Strategic Orchestration of Digital Technologies and the Scaling of Women-Led Enterprises in Emerging Economies in Abuja, Nigeria

Cindy Nneoma Odoemene
Department Of Business Administration,
Westcliff University Irvine, California

Dauda Yusuf Wotu
Department Of Sociology, Nasarawa
State University, Keffi

Abstract
The study investigates the strategic orchestration of digital technologies and the scaling of women-led enterprises in Abuja, Nigeria. Using a mixed-method research design, 200 women entrepreneurs were surveyed and 20 in-depth interviews conducted, selected through purposive and stratified sampling from a population of 14,624 SMEs. The study anchored on Resources Orchestration Theory. Findings indicate that social media platforms (44.5%) and mobile banking or point-of-sale systems (29%) are the most widely used digital tools, while e-commerce (17%) and cloud applications (9.5%) remain underutilized. Strategic adoption of digital technologies is guided by business objectives (39%), although affordability influences 33% of respondents. High or very high digital skills were reported by 75% of participants, yet operational efficiency benefits were minimal (4%), while customer base growth (38.5%), revenue increase (30.5%), and market expansion (25%) were the primary outcomes. Major barriers include poor internet connectivity (40.5%), high costs (37.5%), and limited access to finance (15%). The study concludes that the strategic orchestration of digital tools, rather than mere adoption, drives enterprise scaling. Recommendations include targeted digital skills training, affordable technology provision, and supportive policies to enhance women-led business growth.

Keywords:
Women entrepreneurship, digital technology, business growth, strategic orchestration

Background to the Study
Digital technology effects in recent years have brought a paradigm shift in the global entrepreneurialecosystem,creatingunprecedented opportunities for business expansion and efficiency. Countries in emerging economies in Africa, Asia, and South America have witnessed a rapid increase in digital adoption through mobile technology and online platforms for financial services (Alam et al., 2022). Information technology has been identified as a potential equalizer to neutralize some gender disadvantages, as women entrepreneurs' connectivity improves access to information, customers, and alternative funding sources without reliance on traditional intermediaries (UN Women, 2021; Sussan & Acs, 2017). However, access to technology alone does not guarantee scalability, as women-owned businesses often fail to extract meaningful benefits from IT adoption (Gurumurthy, Chami & Thomas, 2019).
Digital entrepreneurship has therefore become a critical area of study amidst rapid technological advancements. Research shows that digital technology adoption promotes resource mobilization (Kurowski, 2024) and opportunity recognition (Hammad & El Naggar, 2023). For female-owned businesses, effective digital management can enable scalability through automation, informed decision-making, and expanded customer reach. Women entrepreneurs who embed technology into business models achieve better performance in market expansion, efficiency, and resilience under uncertainty (Dy, Marlow & Martin, 2017; Alkhaled & Berglund, 2018). Performance disparities often stem from

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differences in technological competencies, leadership styles, and institutional support. Emerging economies pose particular challenges for digital orchestration due to infrastructure deficits and regulatory uncertainty, and women are less likely to possess advanced digital skills or robust business networks to leverage technology for scaling (World Bank, 2020; Hilbert, 2016). This study therefore examines how the strategic orchestration of digital technologies influences the scaling of women-led enterprises in emerging economies.

Statement of the Problem

Women entrepreneurs are a vital component of the small and medium enterprise (SME) sector in Nigeria, particularly in Abuja, where their enterprises contribute to employment generation, household income, and urban economic diversification. In recent years, digital technologies such as mobile banking, social media marketing, e-commerce, and cloud-based business tools have been promoted as avenues for improving firm growth and competitiveness in developing economies (Bharadwaj et al., 2013; Nambisan et al., 2019). Despite increasing access to these technologies, women-led enterprises in Abuja largely remain small, informal, and show limited evidence of scaling-up outcomes. Existing empirical research has primarily focused on structural constraints including access to finance, education, and sociocultural barriers that limit the growth prospects of women-owned businesses (Aderemi et al., 2020; Okeke & Eze, 2021). While these studies provide valuable insights into contextual challenges, they offer limited understanding of how women strategically leverage digital technologies to overcome such constraints.

Research on digital technology adoption in small businesses in Nigeria highlights shallow and unequal adoption patterns. Studies by Afolayan et al. (2022) and Adegbite et al. (2021) reveal that small business owners predominantly use digital tools for communication and marketing, with minimal integration into core business processes such as supply chain management and decision-making. Although low technological capability is identified as a barrier to adoption, there is inadequate exploration of how digital technology orchestration can drive enterprise scaling. Literature further emphasizes that mere availability of digital tools is insufficient for business growth; aligning digital resources with strategic objectives is critical for performance outcomes (Sirmon, Hitt & Ireland, 2007; Helfat et al., 2007). Female entrepreneurs face unique constraints in this regard due to limited management autonomy and restricted access to innovation infrastructure (Brush et al., 2019; Dy et al., 2017), but empirical evidence specific to women in Abuja remains scarce. Despite the growing interest in digital entrepreneurship, research on women-owned businesses in emergingeconomies remains underrepresented. Most studies focus on tech start-ups or male-dominated sectors (Nambisan et al., 2020; Bresciani et al., 2021), providing little insight into how women entrepreneurs strategically structure, bundle, and capitalize on digital technologies to scale their enterprises under institutional, infrastructural, and resource constraints. It is against this backdrop, that this study examine Strategic orchestration of Digital Technologies and the Scaling of Women-Led Enterprises in Emerging Economies in Abuja, Nigeria.

Literature Review

Digital Technology

From the broader perspective, digital technology (DT) is considered to be: computer systems with an aim of processing digital data (Idris, 2019). According to Abbott (2015) and Castro (2019), DT The creation, collection and processing of digital information. Khin and Ho further argued that DT is “any device that functions using a binary computational code (as in laptops, computers and smartphones) and other related online services such as internet, social networking and Wi-Fi (Idris, 2019; Castro, 2019). Examples of Digital Technology systems have been identified as including computer programs and software, web Pages and websites, including social media channels, data and databases (Idris, 2019; Khin & Ho, 2019). Use of Digital Technology can also be found across various sectors and facets of human endeavours, thus creating the ability to achieve the same technology to be employed for various needs as per the users' requirements; the specificity of industry is hence essential in theorizing DT. For For example, Puolitaival et al. (2018) in defining the concept of DT reached the

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conclusion that that there is no consensus in the construction management literature on definition of Digital Technology. However, this study further informed that there is a long list of "the use of digital technologies in the discipline: digital imaging," mobile solutions, monitoring and control technology, sensor technology, automated and digital fabrication, and digital project management (Puolitaival et al., 2018). Puolitaival et al. (2018) further highlighted the fact that the application of all these technologies and many more is what defines DT in the industry knowledge and skills (Sharif & Senin, 2020).

Women Entrepreneurship in Emerging Economies

Women entrepreneurs in emerging economies have to operate in a socio-economic environment which is complex and inhibitive in nature; however, they are critical to bringing about a paradigm shift in this environment. An important finding in current research indicates that women belonging to the Base of the Pyramid are inspired by context-oriented social needs and use technological solutions for enhancing collective well-being in their social setup, but digital access in their case is unproportionate in nature due to structural imbalances (B et al., Pai, 2025). Digital inclusiveness offered by mobile banking and e-marketing helps in expanding economic interfaces in their social setting (B et al., Pai, 2025). This is always accompanied by an intricate and dynamic process of venture creation. Women entrepreneurs combine causal and effectual decision-making. This is achieved through the application of available means, responding to uncertainty, and co-creating opportunities along with all stakeholders. This adaptability makes it easier to survive and innovate in environments where formal institutions are feeble, markets are disintegrating, and unstable regulatory systems exist in emerging economies (Women entrepreneurs in emerging economies: barriers and bridges, 2025).

Digital Technologies in Small and Medium Enterprises

A digital transformation is a major factor in today's economic transformation and is commonly confused with automating processes, which involves no changes to business processes by adopting digital technologies and tools (Kraus et al., 2021; Li et al., 2018). For instance, digital transformation can be seen as a transformation that affects an organization's external and internal aspects, such as assets, employees, corporate cultures, and finances. For a successful digital transformation, it is essential to ensure that a transformation within the organization occurs (Anshin & Bobyleva, 2021; Gomez-Trujillo & Gonzalez-Perez, 2022; Sousa-Zomer et al., 2020).

Despite being an important factor in worldwide economies, SMEs encounter certain issues regarding the integration of digital technologies because of their limited capabilities and infrastructure (Meier, 2021). Some of the important factors that impact the digital transformation of SMEs are infrastructure and human capabilities (Kuusisto, 2017 and Rachinger et al., 2019), organizational infrastructure (Kuusisto, 2017 and Rachinger et al., 2019), owner-manager intentions (Li et al., 2018 and Rossato and Castellani, 2020), and external factors like market conditions and government policies (Meier, 2021).

Strategic Orchestration of Digital Technologies

Digital technology orchestration is a paradigmatic change in management practice that distinguishes itself in the context of a new era of innovation, and particularly in the context of smaller, less resourceful enterprises, from mere technology adoption, in that it involves the strategic, dynamic, and synergistic integration of a variety of different pieces of technology and human capabilities to reshape, in a value-creating manner, the value-creating processes of an enterprise (Sirmon, Hitt & Ireland, 2007; Helfat et al., 2007). It highlights management's proactive role in reassembling and attempting to reap strategic benefits from these different pieces, and in doing so, the quality of discovery capabilities stands out as crucial in gaining access to and effectively reassembling global resources (Teece, 2014).

Empirical Review

Prabha, Alok, and Kumar (2025) demonstrates that the mere possession or basic use of these tools does not directly translate into business scaling outcomes like sales growth or market

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expansion. Their analysis of 213 women digital entrepreneurs in India reveals a crucial distinction: reliance on basic technologies (e.g., mobile/web apps) remains an isolated, transactional activity if not strategically managed. In contrast, transformational technologies (e.g., IoT, AR) facilitate performance both directly and, more significantly, indirectly through the mediating process of business model experimentation**.** This finding positions resource orchestration the managerial action of structuring, bundling, and leveraging acquired resources as the essential mechanism that converts digital access into scaling potential.

Theoretical Framework

This paper anchored on Resources Orchestration Theory:

Resource Orchestration Theory

Resource Orchestration Theory (ROT) was first articulated by Sirmon, Hitt, and Ireland in 2007 as a complement to the Resource-Based View (RBV) of the firm. Although RBV focuses on a firm's valuable, rare, inimitable, and non-substitutable (VRIN) resources as a source of sustained competitive advantage, it has been argued to suffer from a static approach and a lack of insight into how resources are effectively managed (Sirmon, Hitt & Ireland, 2007; Sirmon et al., 2011).

Basic Assumptions of Resource Orchestration Theory:

1. Resources are essential but insufficient for competitive advantage: Businesses need to have VRIN resources, but their worth is determined by managerial choices about how to use them.
2. Managerial actions are crucial: According to Sirmon et al. (2007), strategic management entails actively organizing the company's resources, combining complementary resources, and utilizing them to take advantage of opportunities.
3. Dynamic and context-dependent: Resource orchestration acknowledges that capabilities and resources need to be constantly adjusted to market volatility, technological advancements, and environmental shifts.
4.Value results from synergistic combinations: Competitive advantage is produced by the strategic alignment and integration of individual resources, which results in synergistic outcomes.

In the context of the Strategic Orchestration of Digital Technologies and Scaling of Women-Led Enterprises in Emerging Economies, Resource Orchestration Theory acts as an efficient conceptual lens to understand how digital technologies contribute toward enterprise scaling. ROT extends the Resource-Based View by placing greater emphasis on the fact that resources alone cannot suffice for sustained competitive advantage; rather, it is the managerial processes of structuring, bundling, and leveraging resources that determine performance outcomes (Sirmon, Hitt & Ireland, 2007; Sirmon et al., 2011). This perspective thus leads to a deeper understanding of how women entrepreneurs in emerging economies can actively deploy digital tools to overcome resource constraints and drive business growth. E-commerce, mobile banking, social media, and cloud-based applications are examples of tangible and intangible resources through which women entrepreneurs can further their operations and efficiency, widen markets, and upscale sales activities. According to the-resource orchestration theory, the mere possession of resources in the form of digital technologies is not enough; rather, competitive advantage stems from the strategic orchestration of digital technologies, which involves their deliberate, handled, and balanced alignment towards the enterprise's goals, integration with complementary capabilities, and resourceful management to produce value.

Managerial orchestration, according to ROT, means that women entrepreneurs are considered resource orchestrators who utilize and bundle digital technology to meet strategic intentions. For instance, combining social marketing and online payments, as well as customer analytics, would improve marketing reach in addition to increasing a firm's performance, indicating that their theory stresses strategic combinations of resources and capabilities (Karimi & Walter, 2015; Kane et al., 2015). This indicates that digital technology, in itself, is not valuable but requires strategic management to ensure important business outcomes.

Finally, the ROT is especially useful when considering the emerging economy of Abuja, Nigeria, and the challenges of female entrepreneurship, which include infrastructural challenges, financing, and uncertainty (World Bank, 2020; Hilbert, 2016). Through the

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process of orchestration, the ROT illustrates how the strategic use of available digital technology can overcome the challenges and create sustainable enterprise success (Sirmon et al., 2007; Teece, 2014). This is achieved through performance and the use of indicators, which include enterprise growth, market development, automation, unsustainability, and illustrates the importance of and the need for expertise in management to ensure the success of digital technology and overcome the challenges of the emerging economy, especially in Abuja, Nigeria.

Methodology

Research Design

In order to thoroughly investigate how strategic coordination of digital technologies affects the growth of women-led businesses in Abuja, this study uses a mixed-method research design that combines quantitative and qualitative techniques. While the qualitative component offers contextual insights into the procedures and difficulties faced by female entrepreneurs, the quantitative component enables the measurement of relationships between variables digital technology adoption, managerial orchestration, and enterprise scaling. Both the quantifiable results of technology orchestration and the complex managerial and contextual elements impacting enterprise growth can be captured with this design (Creswell, 2014; Johnson, Onwuegbuzie & Turner, 2007).

Population of the Study

Women entrepreneurs running small and medium-sized businesses (SMEs) in Abuja, Nigeria, make up the study population. The Federal Capital Territory (FCT) has about 14,624 SMEs owned and run by women, according to a 2023 report from the Federal Ministry of Commerce and Industry (Federal Ministry of Commerce and Industry, Abuja, 2023). This provides a strong empirical foundation for the study's population. According to the National Bureau of Statistics (NBS) and Small Firm Diaries report, women own roughly 40% of micro, small, and medium-sized businesses in Nigeria. This indicates that women's economic activity is important in entrepreneurial ecosystems. The Abuja context is especially appropriate for examining the strategic orchestration of digital resources because these women entrepreneurs work in a variety of industries, such as retail, services, fashion, food, and technology-enabled businesses. They also display varying degrees of digital technology adoption, managerial skills, and enterprise scaling outcomes.

Sampling Technique and Sample Size

To ensure that participants had experience pertinent to the study's objectives, a purposive sampling technique was used to select female entrepreneurs who utilized digital technologies in their business operations. To guarantee representation across various business sectors and enterprise sizes, stratified sampling was also employed. The quantitative survey targeted a minimum sample of 200 female entrepreneurs based on Krejcie and Morgan's (1970) sample size determination formula. For the qualitative component, 20 in-depth interviews were conducted to obtain comprehensive insights into the orchestration practices and challenges encountered by female entrepreneurs.

Data Collection Method

Data collection was conducted in two stages: Quantitative Survey: Questionnaires were distributed both physically and electronically to maximize reach. Follow-up reminders were sent to ensure high response rates. Qualitative Interviews: In-depth interviews were conducted either in person or via video conferencing, recorded with participants' consent, and transcribed verbatim for analysis. Throughout the study, ethical principles, including informed consent, voluntary participation, and confidentiality, were strictly observed.

Method of Data Analysis

The study used both quantitative and qualitative methods of data analysis. Descriptive statistics like frequencies, percentages, and means were used to analyze the quantitative data collected from the questionnaires in order to summarize participant characteristics, levels of digital technology adoption, managerial orchestration practices, and enterprise scaling outcomes. This methodology allowed the study to provide a thorough picture of the trends and patterns among Abuja's women-led businesses. Qualitative Data: Thematic analysis was used to examine the data from the in-depth

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interviews. In order to find recurrent themes, patterns, and insights about the use of digital technology, orchestration techniques, and difficulties faced by female entrepreneurs, transcripts were thoroughly examined.

Analysis of Findings

Table 1: Socio-Demographic Characteristic of Respondents

Variable	Category	Frequency	Percentages
Age	Below 25	21	10.5
	25–34	70	35
	35–44	50	25
	45–54	34	17
	55 and above	25	12.5
Marital Status	Single	74	37
	Married	57	28.5
	Divorce	40	20
	Widowed	29	14.5
Educational Status	No formal education	15	7.5
	Primary education	31	15.5
	Secondary education	50	25
	OND/NCE	41	20.5
	Bachelor degree	39	19.5
	Post-graduate degree	24	12
Nature of business	Retail and trading	59	29.5
	Fashion and beauty	48	24
	Food and catering	60	30
	ICT/Technology	21	10.5
	Manufacturing/produce	10	5
	Others	2	1
Year of business	Less than 2yrs	44	22
	2-4yrs	82	41
	5-7yrs	36	18
	8-10yrs	25	12.5
	Above 10yrs	13	6.5
Size of enterprise	Micro enterprise	58	29
	Small enterprise	78	39
	Medium enterprise	64	32
Total		**200**	**100%**

Source: Field work, 2026

Table 1. According to the respondents' age distribution, women in economically active and productive age groups predominate in entrepreneurial endeavors. The age group of 25–34 years old accounts for the largest percentage of respondents (35 percent), followed by 35–44 years old (25 percent). This implies that young and middle-aged women who actively participate in income-generating activities are the main drivers of women's entrepreneurship in Abuja. 10.5% of respondents are under the age of 25, while 17% and 12.5% of respondents are between the ages of 45 and 54 and 55 and older, respectively, demonstrating consistent entrepreneurial involvement throughout various life stages.

Based on marital status, it can be noted from the table that a wide representation is reflected. Single female entrepreneurs represent the highest group (37 percent), trailed by those who are married (28.5 percent). Divorced and widowed female entrepreneurs represent 20 percent and 14.5 percent, respectively.

The educational background of the respondents shows that there is diversity in their human capital. Even though a few respondents are not educated at all (7.5 percent), the larger percentage of the

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respondents are educated at least at the basic level. Respondents who attained secondary education made up 25 percent, followed by 20.5 percent who attained OND/NCE and 19.5 percent who attained a bachelor's degree. It is important to note that 12 percent of the respondents attained postgraduate degrees.

On the nature of business, it was indicated that a large number of women entrepreneurs are engaged in retail and trading businesses (29.5 percent), food and catering services (30 percent), fashion and related beauty businesses (24 percent), and information and communication technology businesses (10.5 percent). Manufacturing and related produce businesses are low at 5 percent.

From the years of running the business, it can be noted that a large number of women are still young entrepreneurs. This is evident from the fact that the largest percentage of businesses run by women are between 2-4 years old, which is 41 percent. Those that have been operating less than 2 years are the second largest, which is 22 percent. Those operating between 5-7 years are 18 percent, whereas the oldest, more than 10 years, is just 6.5 percent.

Lastly, the enterprise size indicates that the majority of respondents run small businesses. Micro businesses make up 29% of the sample, while small businesses make up 39%. While some women-owned businesses have expanded beyond micro levels, the majority still fall into the micro and small enterprise categories, as evidenced by the 32 percent of medium-sized businesses.

Analysis of Study Objectives

Section A: Digital Technology Usage

Table 2: Digital Technologies Currently Utilized in Business Operations

Technology used	Frequency	Percentage %
Social media platforms	89	44.5
Mobile banking or POS systems	58	29
E-commerce platforms	34	17
Cloud-based applications	19	9.5
Total	**200**	**100.0**

Source: Field Work, 2026

Table 2. According to the results, social media platforms account for 44.5 percent of respondents, making them the most popular digital technology. The use of mobile banking or point-of-sale systems comes in second at 29%, demonstrating the significance of digital financial tools in streamlining transactions. Cloud-based apps have the lowest usage, at 9.5 percent, while e-commerce platforms are used by 17 percent of respondents. According to this distribution, more sophisticated technologies that facilitate backend operations and data management are still underutilized by female entrepreneurs, who mostly use simple, market-facing digital tools.

Respondents said:

“I mainly use social media platforms such as WhatsApp and Instagram for advertising my products and communicating with customers. I also rely on mobile banking and POS systems to receive payments and manage daily transactions.” This response reflects the dominant use of market-facing and transactional digital tools among women-owned SMEs in emerging economies, as documented by Nambisan (2017) and Sussan and Acs (2017), who argue that social media and mobile financial technologies lower entry barriers and enable micro-entrepreneurs to engage customers efficiently (Interview with Micro-enterprise owner, retail sector, 2026).

Section C: Strategic Orchestration of Digital Technologies

Table 3 Decision Criteria for Selecting Digital Technologies in Business Operations

Strategic Orchestration	Frequency	Percentage %
Based on business goals	78	39
Based on affordability	66	33
Based on recommendations from others	43	21.5
Trial and error	3	1.5

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No specific decision process	10	5
Total	**200**	**100.0**

Source: Field Work, 2026

Table 3. A significant percentage of female entrepreneurs (39%) stated that their selection of digital technologies is determined by their company's objectives, suggesting a strategic component. However, 33% of respondents chose technologies primarily based on their affordability, underscoring the impact of budgetary limitations. Trial and error (1.5%) and no particular decision-making process (5%), on the other hand, make up only 21.5% of decisions. Overall, the results imply that, despite the existence of strategic intent, cost factors rather than methodical planning have a major influence on digital technology decisions.

Respondent argued:

"Social media is the most important tool for my business because it allows me to showcase my products, attract customers, and receive orders without having a physical shop in many locations." This finding supports prior studies by Abbas et al., 2019; UN Women, (2021) showing that social media platforms serve as virtual marketplaces for women entrepreneurs, compensating for limited physical infrastructure and capital (interview with Small enterprise owner, fashion business, 2026).

Section D: Managerial Capability and Digital Skills

Table 4 How would you rate your ability to use digital technologies for business purposes

Rate	**Frequency**	**Percentage %**
Very high	59	29.5
High	91	45.5
Moderate	25	12.5
Low	14	7
Very low	11	5.5
Total	**200**	**100.0**

Source: Field Work, 2026

Table 4 below analyzes respondents' self-perceived level of ability in utilizing digital technologies for business purposes. The findings reveal that respondents generally rate their level of ability fairly high. In particular, 29.5 percent of respondents rate their level of ability as very high, while another 45.5 percent rate their level of ability as high. At the same time, 12.5 percent of respondents rate their level of ability as merely moderate, while another 12.5 percent rate their level of ability as low and very low. In conclusion, while many of the respondents rate their level of ability fairly high, many of them obviously need further training.

Respondents said:

"I choose digital technologies based on what supports my business goals and what I can afford. I consider whether the technology will help me reach more customers or make transactions easier." This align with the illustration of the resource structuring decision emphasized in Resource Orchestration Theory, where entrepreneurs align resources with strategic intent under financial constraints (Sirmon et al., 2007; Helfat et al., 2007). Similar cost-sensitive decision-making has been observed among women entrepreneurs in developing economies Afolayan et al., 2022, (Interview with Small enterprise owner, food services, 2026).

Section E: Enterprise Scaling and Business Growth

Table 5 Forms of Business Growth Attributed to Digital Technology Use

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Form of Business Growth	Frequency	Percentage %
Increased customers	77	38.5
Increased revenue	61	30.5
Expansion to new markets	50	25
Improved operational efficiency	8	4
No noticeable growth	4	2
Total	**200**	**100.0**

Source: Field Work, 2026

Table 5. Indicate that, increased customer base (38.5%) and revenue (30.5%) are the most frequently reported results. Just 4% of respondents linked the use of digital technology to increased operational efficiency, while 25% reported expanding into new markets. Just 2% of respondents said there was no discernible growth. These results show that digital technologies are mainly used for revenue generation and market expansion, with little use for improving internal productivity and process optimization.

Respondents opined that:

"Digital technologies have helped my business grow by increasing customer demand and sales volume." This finding align with (Alkhaled & Berglund, 2018; Autio et al., 2018) prior evidence that digital tools facilitate market expansion and revenue growth, particularly for women-led SMEs (interview with Medium enterprise owner, fashion and accessories, 2026).

Section F: Challenges and Contextual Factors

Table 6 **Major Challenges in the Use of DigitalTechnologiesfor Business Operations**

Challenges	Frequency	Percentage %
Poor internet connectivity	81	40.5
High cost of digital tools	75	37.5
Limited digital skills	10	5
Lack of access to finance	30	15
Gender-related constraints	4	2
Total	**200**	**100.0**

Source: Field Work, 2026

The main obstacles to using digital technologies for business operations are shown in Table 6. The biggest issue, which affects 40.5% of respondents, is poor internet connectivity. Lack of access to financing (15%) and the high cost of digital tools (37.5%) come in second and third, respectively. Gender-related limitations (2 percent) and limited digital skills (5 percent) are less common. The findings imply that financial and infrastructure barriers are more significant obstacles to the efficient use of digital technology than personal aptitude or gender-specific characteristics.

Discussion of Findings

The findings reveal that social media platforms constitute the most widely used digital technology among the respondents, as they make up 44.5 percent of respondents, while mobile banking or point of sale comes in second at 29 percent. Contrary to these findings, platforms such as e-commerce and cloud apps are not very popular among women. In affirming the above outcome, Nambisan (2017) submits that digital technologies with lower entry barriers, such as social media, allow micro and small enterprises to "take part in the market with little or no capital investment." Furthermore, Sussan and Acs (2017) underscore the salience of social media and mobile finance technology with the ability to lower transaction costs and raise market visibility in the delineation of digital entrepreneurship. According to the study, 39% of participants choose digital technologies based on business objectives, suggesting that strategic intent plays a role in digital decision-making. However, a smaller percentage of respondents rely on recommendations or informal experimentation,

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while affordability continues to be a significant determinant, impacting 33 percent of respondents. This result is in line with Resource Orchestration Theory (Sirmon et al., 2007; Helfat et al., 2007), which holds that entrepreneurs manage resource constraints while organizing, bundling, and utilizing resources in ways that support strategic goals.

The findings show that a significant proportion of the respondents consider their digital skills high or very high, cumulatively totalling 75%. This notwithstanding, still a considerable number reported a rating of moderate to very low levels of ability. This is indicative of unevenness in the possession of digital competence across the sample. These findings are therefore in line with previous studies that also indicated that, for women entrepreneurs in developing contexts, digital skill acquisition is mostly experiential and informally driven. However, as pointed out by scholars like van Dijk (2020), self-reported competence might mask these emerging gaps in advanced digital capabilities, especially those concerning data analytics and process automation.

The finding revealed that digital technologies have mainly generated greater customer populations and revenue increases, while fewer associations are noted for operational efficiencies. The expansion of markets is noted for one quarter of the responses, indicating digital technologies have enabled some spatial and market scaling. This finding also corroborates the rationalization of Autio et al. (2018), who posit that the utility of digital technologies lies in the swift expansion of the market or the demand for small businesses, especially if the environment lacks the necessary infrastructural support. In the same vein, Alkhaled and Berglund (2018), for their part, posit that women-led SMEs are increasingly accessing digital platforms for the expansion of the business compared to internal processes. In this respect, the limited focus of the findings on internal processes diverges sharply with the propositions of Brynjolfsson and McAfee (2014), who posit on the potential benefits of the digitalization of businesses on productivity.

Finally, finding shown that poor internet connectivity and high costs of digital tools emerged as the most significant barriers to effective use of digital technologies. Secondly, access to finance is highlighted as a major constraint, while gender-related barriers and deficits in digital skills are less frequently reported. These findings indicate that structural and infrastructural factors pose greater challenges than either individual capacity or gender norms. This result is in congruence with Heeks (2018), who stresses that for developing economies, digital inequality is driven more by infrastructure and affordability issues than by the will or even awareness of the people. In similar fashion, World Bank (2021) reveals that unreliable connectivity and high costs lead to a significantly shallower depth of digital adoption amongst SMEs in SSA.

Conclusion

This study examined the strategic orchestration of digital technologies and the scaling of women-led enterprises in emerging economies, focusing on Abuja, Nigeria. The findings, however, highlight that women entrepreneurs are utilizing more surface-level, technology-based approaches, which include data and mobile banking, for increasing customer relationships. In contrast, technology, e-commerce, and cloud computing are considered immensely low among entrepreneurs. The strategic element affects technology adoption, but, most importantly, a financial factor affects technology adoption. The study concluded that most entrepreneurs, however, have high levels of technological skills, but, again, face difficulties in data and automation technologies. Moreover, technology has significantly contributed to increasing revenues, expanding relationships, and growing existing businesses, but its effect on increasing efficiency among businesses remains low. Structural and infrastructural limitations, however, have become major limitations for entrepreneurs, which include low internet connectivity, costs imposed by technology, and issues regarding accessibility and availability of funds.

Consequently, the present study, guided by Resource Orchestration Theory, sought to show the critical role that the bundling and orchestrating of digital technologies by female entrepreneurs plays in the utilization of available technological resources to enhance their business growth. In this sense, the present study makes a vital contribution to the literature by demonstrating the significance of the orchestration process to female business enterprise performance instead of the adoption

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of technology per se. Essentially, the practical implications of the study are on the role of infrastructural development, availability of affordable technology, and the construction of financial and digital capacity among female entrepreneurs. In the end, it can be suggested that female business enterprise development via critical orchestration of digital technologies can result in enormous benefits to their businesses, wider markets, and economic growth of emerging economies.

Recommendations

Based on the findings of this study, the following policies were recommended:

i. Policymakers and financial institutions should provide affordable digital tools, subsidized internet access, and women-focused financing schemes to enable adoption of advanced technologies and support enterprise scaling.
ii. Targeted training, mentorship, and capacity-building programs should be implemented to strengthen women entrepreneurs' digital skills and their ability to strategically orchestrate technologies in alignment with business goals.
iii. Women-led enterprises should leverage social media, e-commerce, and mobile applications to reach new customers, expand markets, and diversify revenue streams, with guidance on effective digital marketing and customer engagement.
iv. Governments and relevant agencies should implement gender-sensitive policies, provide regulatory support, and create enabling environments that reduce infrastructural and systemic barriers, ensuring sustainable digital entrepreneurship growth.

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