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Digital Entrepreneurship and Performance of Micro, Small and Medium Enterprises (Msmes) in South-West Nigeria

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ABSTRACT **Original research paper**

Micro, Small, and Medium Enterprises (MSMEs) in Nigeria particularly in the Southwest region operate in fast-paced, dynamic environments, similar to other global markets. Due to their size and nature, these businesses are constantly challenged to find innovative ways to adapt to ongoing changes in today's skills-based and technology-driven economy. Against this backdrop, the present study focused on examining the role of digital entrepreneurship in enhancing the performance of MSMEs in Southwest Nigeria. The research explored the challenges and potential opportunities associated with the digitalization of business operations, in line with the study's core objectives. Primary data served as the sole source of information, and a quantitative research approach was adopted, utilizing a field survey method. A structured questionnaire was employed as the primary research instrument to facilitate the identification of statistically significant outcomes from the data collected. Three states in the Southwest Lagos, Ogun, and Oyo were purposively selected due to their high concentration of MSMEs. Specifically, the capital cities of each state were targeted for the administration of questionnaires. The study population included 9,886,473 MSMEs, and the sample size was determined using Taro Yamane's formula, yielding approximately 400 respondents. Questionnaires were distributed randomly to owner-managers of MSMEs across the selected states, with the assistance of trained research personnel. A five-point Likert scale was used in the questionnaire, ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). The collected data were analyzed using both descriptive and inferential statistical tools. Descriptive statistics included frequency, percentage, mean, and standard deviation, while regression analysis and ANOVA were employed for inferential statistics.

Findings from the study revealed a significant positive impact of digital entrepreneurship on the efficiency of production and operations management among MSMEs in Southwest Nigeria ($F = 167.239$, $p = 0.000$). Based on this, the study concluded that digital entrepreneurship significantly influences the operational performance of MSMEs in the region. Consequently, it recommends that MSMEs seeking to improve operational efficiency should adopt digital solutions, leverage digital platforms, digitalize their entrepreneurial processes, and implement digitally driven business models to remain competitive and sustainable.

Keywords: Digital Model, Digital Platform, Entrepreneurial Process, Performance, Micro, Small and Medium Enterprises.

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Introduction

Technological innovation is widely recognized as a key catalyst for modernization. Research shows that innovation plays a crucial role in enhancing firms' efficiency and fostering their growth (Arvanitis, Loukis, & Diamantopoulou, 2016; Karakara & Osabuohien, 2020). Its significance is not limited to advanced economies; it is equally vital for developing and emerging countries.

The fact that MSMEs contribute about 99.7 percent of the enterprises worldwide demonstrates MSMEs' importance in contributing to the economic development of MSMEs in most countries in the world (Martin & Namusonge, 2018). It is necessary to develop a strategy that will support development, to remain viable, develop faster, and work proficiently and successfully. MSMEs need to exploit expertise and knowledge resourcefully. Managing cutting-edge technology may lead to enhanced product quality, stability, and price fixation.

Embracing a new technical know-how may also decrease costs by saving resources, with the replacement of conventional materials with inexpensive substitutes. MSMEs play a crucial part in the economy of industrialized, underdeveloped, and unindustrialized countries, which include more than 90 percent of corporate operations in Asia, Latin America, and some African countries, and also contribute over 50 percent of GDP and employment. (Twaliwi & Isaac, 2019).

Micro, Small, and Medium Enterprises (MSMEs) are globally recognized, and especially in Nigeria, as significant contributors to economic and social development. They serve as engines for employment creation, market expansion, value addition, income generation, and poverty alleviation. In Nigeria, MSMEs are estimated to contribute about 48% of the national GDP, represent 96% of all businesses, and provide roughly 84% of total employment (Department of Trade and Industry, 2018).

Therefore, it is a known fact that digitalization and innovation of enterprises (firms) are essential for sustaining the performance of MSMEs in the long run. Due to the ever-changing environment, firms need inventive tactics to improve their performance.

Although interest in digital entrepreneurship and technology-driven innovation has grown significantly, several critical challenges remain unaddressed. High start-up costs and the difficulty of adapting to rapid technological disruptions continue to hinder the adoption of digital entrepreneurship. Furthermore, there is a noticeable lack of clarity regarding the concept itself, with limited exploration from diverse theoretical and practical perspectives. Existing literature often falls short in providing comprehensive contextual and conceptual development, as most prior studies tend to focus on isolated and sporadic aspects of digital entrepreneurship rather than offering a holistic understanding (Shen et al., 2015).

Despite growing interest, there remains a significant gap in the detailed classification of digital technology-enabled entrepreneurship and enterprises, which hampers a comprehensive understanding of the concept and its boundaries (Ngoasong, Park, Yang, Lehto, 2007; Shemi & Procter, 2018). Moreover, the conceptualization of digital entrepreneurship varies considerably across studies. Some researchers define it broadly as the intersection of digital technology and entrepreneurial innovation (Beckman, Eisenhardt, Kotha, Meyer & Rajagopalan, 2012; Ferreira, Fernandes, Jalali, Raposo & Marques, 2016), while others restrict the definition to the achievement of entrepreneurial objectives specifically through digital technological applications (Wallin, Still & Henttonen, 2016). Notably, few recent studies have explored how MSMEs in Southwest Nigeria adopt digital entrepreneurship and the impact of this adoption on their performance. This gap underscores the necessity for the present study, which aims to address and contribute to the limited body of knowledge in this area.

Objectives of the Study

General Objective:

The broad objective of this study is to examine the impact of digital entrepreneurship on the performance of Micro, Small, and Medium Enterprises (MSMEs) in Southwest Nigeria.

Specific Objective:

The primary objective is to examine how digital entrepreneurship influences the efficiency of production and operations management among MSMEs in Southwest Nigeria.

Literature Review

Concepts and Definitions of Digital Entrepreneurship

Kollmann (2020) describes digital entrepreneurship as the creation of a new business within the digital economy, where products and services are delivered via electronic platforms and value is generated entirely through digital means. Digital entrepreneurs are individuals who operate their businesses primarily online. Examples include podcasters, bloggers, digital product sellers, online course creators, and certain freelancers such as virtual assistants and graphic designers. According to Morris, Kuratko, and Cornwall (2021), digital entrepreneurs are typically self-employed individuals who conduct business through digital platforms. These entrepreneurs leverage information technology (IT) and digital media tools to identify and engage potential customers, enabling them to promote their ventures within both local and global markets. Similarly, Gollwitzer (2020) defines digital entrepreneurship as the process of identifying and pursuing entrepreneurial opportunities through the use of technological platforms and communication tools.

Different Model of Digital Entrepreneur

Digital business model

The concept of the "business model" (BM) originated as early as the 1960s (Sahut et al., 2019), but its significance grew substantially with the rise of the digital economy. BM discussions entered mainstream literature primarily in two phases: first, with the advent of electronic business models

(eBMs) during the emergence of e-commerce in the 1990s, and second, with the development of digital business models (digital BMs) in response to the expanding digital economy (Boneva, 2018; Baldwin & Gelatty, 2020; Ries, 2011; Teece, 2018). The relevance of BMs in strategic management and entrepreneurship has increased notably due to the enhanced flexibility offered by digital technologies. These technologies facilitate the coordination of various stages in the value creation process more efficiently than before. In this context, the business model canvas can be viewed as a digitally enhanced evolution of the traditional value chain model, which was widely utilized in the pre-digital era (Sahut et al., 2019).

The model of digitalization of entrepreneurial processes

Nambisan (2017).The evolving and fluid nature of innovation in the digital age has made entrepreneurial processes less rigid and confined than in the traditional economy. As a result, these processes now follow more incremental and non-linear trajectories, largely enabled by digital platforms and artifacts (Nambisan, 2017). The digitalization of entrepreneurship has effectively dissolved the traditional boundaries between the different stages of the entrepreneurial journey, significantly lowering the barriers between invention and innovation (Dong, 2019; Steininger, 2019). In line with this, Sahut et al. (2019) observe that much of the literature on digital entrepreneurship does not emphasize the identification of distinct entrepreneurial phases. Instead, the focus has shifted toward understanding how entrepreneurs can scale their ideas into viable ventures by leveraging digital technologies to enhance opportunity recognition, ideation, idea validation and testing, and the design of effective business models.

Models of Digital platforms have become increasingly significant in strategic management literature due to their ability to facilitate collaboration and knowledge sharing among users, firms, and other stakeholders by harnessing the power of network effects (Dutot& Van Horne, 2019). Although platforms can exist in both digital and non-digital forms, scholarly focus has largely shifted toward their digital manifestations. In the context of digital entrepreneurship (DE), research has evolved from analyzing platforms at a systemic level, examining their structure and governance, to exploring firm-level strategies. At this level, studies emphasize how digital entrepreneurs can strategically leverage platforms to maximize benefits while mitigating potential risks associated with platform dependency (Yunis et al., 2018). Furthermore, cooperative relationships between businesses, both upstream and downstream in the value chain, have been shown to support the development of innovative products and services (Nambisan et al., 2017; Vuorikari et al., 2015).

Perceptions of the Firm's Performance

Performance is regarded as an aegis term for all those ideas that study the accomplishment of a firm and its undertakings (Atkinson, 2019). Performance can refer to the authentic outcome/output of definite activities, how an action is implemented, or the capability to achieve results (Lonquist, 2020). Atkinson (2019) define performance as the realization of outcomes that safeguard the delivery of desired results to the shareholders of a firm. There are two basic types of Performance Measurements in any business: Those that are interconnected to results, such as competitiveness, financial act, growth and the factors that focus on results, such as value, flexibility, resource utilization (Neely *et al.,* 2017). A firm's performance is divided into two major areas: Operating performance and financial performance. What is financial performance related to? for authentic results, prior profitability, growth, turnover etc., and operating performance determinants of results such as nimbleness, flexibility, productivity, quality, etc. This study is concerned with performance results and more concretely with growth measured by profitability, employment, and turnover.

Theoretical Review

Dynamic Capabilities Theory

The concept of dynamic capability emerged from the recognition of the complex and evolving relationship between a firm's internal capabilities, the external business environment, and the ongoing need to sustain competitive advantage through continuous resource reconfiguration. Teece et al. (2016) introduced Dynamic Capability Theory (DCT) as a response to the limitations of the Resource-Based Theory (RBT), which was increasingly seen as insufficient in dynamic and rapidly changing environments (Martin et al., 2018). Teece and colleagues argued that many firms that were once successful failed to adapt effectively to environmental shifts, resulting in a decline in performance or even collapse (Hashi et al., 2020). In response, they proposed that dynamic capabilities could address the shortcomings of RBT by enabling firms to adapt, renew, and reconfigure both internal and external competencies to align with evolving market demands.

Teece et al. (2016) defined dynamic capabilities as a firm's ability to integrate, build, and renew its resources in response to continuous change. This view is supported by other scholars who similarly describe dynamic capability as the capacity to adapt resources and competencies to meet the challenges of rapidly changing environments (Teece, Peteraf & Leih, 2016; Zhu et al., 2006). In essence, DCT emphasizes the importance of sensing, seizing, and transforming opportunities in volatile contexts to enhance organizational performance (Zhao & Collier, 2016).

Dynamic capability is therefore seen as essential in unstable or uncertain environments where RBT alone may fall short in delivering sustainable competitive advantage (Teece et al.,

2016). Watson (2016) further argues that simply possessing a set of valuable resources is not sufficient to guarantee improved performance; rather, the firm's ability to acquire, deploy, and adapt these capabilities while overcoming internal and external constraints is what ultimately drives success. As Teece (2018) concludes, it is not the static possession of resources, but the dynamic processes involved in renewing and leveraging them that matter most in competitive environments.

Methodology

Research Design

The research method adopted for this study is a field survey research technique, specifically a questionnaire. The primary data was collected through the administration of a questionnaire on key persons of Micro, Small, and Medium Enterprises from the selected states in Southwestern Nigeria, especially the owner-managers of the enterprises. Furthermore, questionnaires were used as a research instrument, which enhanced the identification of statistically significant results from the data analysis procedure.

Area of Study

The study was conducted in Southwest Nigeria, comprising six states: Ogun, Oyo, Osun, Ekiti, Ondo, and Lagos. Geographically, the region is situated between longitudes 2°31′ and 6°00′ East, and latitudes 6°21′ and 8°37′ North, covering a total land area of approximately 77,818 square kilometers (Oluwatusin & Ojo, 2017). According to the National Population Commission (NPC, 2007), the region had a population of 27,511,892 at the time of the last census, consisting of 14,049,594 males and 13,462,298 females.

Southwest Nigeria experiences two primary climatic seasons: the rainy season, which typically lasts from April to October, and the dry season, spanning from November to March. The region has a relatively moderate temperature range, generally between 21°C and 28°C, and a high humidity level averaging around 77%. The predominant occupation among residents is agriculture, although other common trades include commerce, transportation (particularly driving), and craftsmanship such as furniture making. While English serves as the official language, Yoruba is the widely spoken indigenous language, featuring various dialects across the region (Oluwatusin & Ojo, 2017).

Population of the Study

The population of this study comprises of Micro, Small and Medium Enterprises in Southwest Nigeria which is nine million, eight hundred and eighty-six thousand, four hundred and seventy-three (9,886,473) as shown in table 3.1 below.

Table 1 Population distribution of MSMEs in Southwest Nigeria

S/N	State	Micro	Small	Medium	Total
1	Lagos	3,329,156	8,042	354	3,337552
2	Oyo	1,909,475	6,039	92	1,915,606
3	Osun	1,370,908	2,995	12	1,373,915
4	Ogun	1,178,109	2,394	71	1,180,574
5	Ondo	1,058,025	2,324	39	1,060,388
6	Ekiti	1,017,510	926	2	1,018,438
	Total				**9,886,473**

Source: NBS & SMEDAN (2022)

Sampling Size Determination and Sampling Technique

The study utilized Taro Yamane's (1967) formula to determine the appropriate sample size. This formula is particularly useful for calculating an ideal sample size when the population size is known, taking into account the desired level of precision, confidence level, and the estimated proportion of the population possessing a particular attribute. It provides a statistically sound method for determining the number of respondents needed to ensure the results are representative and reliable within a defined margin of error.

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

n = sample size
N = population
1 = constant
e = error $(0.05)^2$

Therefore, the calculation of the sample size for this study is given thus

. 95% is the confidence interval for the study

$$n = \frac{9{,}886{,}473}{1 + 9886{,}473(0.05)^2}$$

$$n = \frac{9{,}886{,}473}{1+9{,}886{,}473(0.0025)}$$

$$n = \frac{9{,}886{,}473}{24717.1825}$$

n = 399.984

Therefore, the sample size is 399.984

n = 400

This study purposively selected three states in Southwestern Nigeria that is mostly concentrated with MSMEs. The states selected are Lagos, Ogun and Oyo states. However, the capitals of each of the selected states were considered in the process of questionnaire administration due to high industrial concentration in those areas. Furthermore, the questionnaire was administered to four hundred (400) MSMEs sampled in total.

Lagos = $\frac{3{,}337{,}552}{6{,}443{,}726} \times 400 = 208$

Ogun = $\frac{1{,}180{,}574}{6{,}443{,}726} \times 400 = 73$

Oyo = $\frac{1{,}915{,}606}{6{,}443{,}726} \times 400 = 119$

Results and Discussion

Background information of the respondents

Table 2 Number of questionnaire Administered and Retrieved

Characteristics	Frequency	Percent
Number of questionnaire Administered		
States		
Lagos	208	52.0
Ogun	73	18.3
Oyo	119	29.7
Total	400	100.0
Number of Questionnaire Retrieved		
States		
Lagos	201	50.3
Ogun	69	17.3
Oyo	115	28.8
Total	385	96.4

Source: Author's Computation, (2025)

Table 3 Background Information of the Respondents

Characteristics	Frequency	Percent
Gender of the respondents		
Male	296	76.88
Female	89	23.12
Total	385	100.0
Age of the respondent		
Less than 30 years	73	19.0
30-49 years	199	51.7
50 years and above	113	29.3

Total	385	100.0
Marital Status		
Single	162	42.1
Married	177	46.0
Divorced	46	11.9
Total	385	100.0
Qualification of the respondent		
WAEC, NECO, NCE and ND	87	22.6
HND/B.Sc.	214	55.6
Postgraduate Degree (M.Sc./MBA/Ph.D.)	84	21.8
Total	385	100.0
Firm size		
Below 10 employees	175	45.5
10-49 employees	114	29.6
More than 49 employees	96	24.9
Total	385	100.0
The year the business started operations (Age of the Business)		
6	57	14.8
5-14 years	152	39.6
More than 14 years	104	27.0
Total	385	100.0
Source of Capital		
Family and friends	352	91.4
Personal savings	10	2.6
Bank loans	18	4.7
Others	5	1.3
Total	**385**	**100.0**

Source: Author's Computation, (2025)

Table 4 Digital Business Model and Efficiency of Production and Operations of MSMEs

Digital Entrepreneurship Enabler	SA	A	Ind	D	SD	Total	Mean	Standard Deviation
Digital technology adopted to understanding customer needs enhances the efficiency of production and operations management of our enterprises	164 (42.6)	87 (22.6)	116 (30.1)	14 (3.6)	4 (1.0)	385 (100)	**4.02**	**0.984**
Digital technologies adopted that enable enterprises to move Shifting from a controlled value chain orientation to a network-based orientation anchored on a web of interconnected relationships can significantly enhance production efficiency. This transition allows firms to leverage collaborative partnerships, shared resources, and real-time information flows, ultimately improving coordination, reducing costs, and fostering innovation across the production process, and operations management of our enterprises.	285 (74.0)	86 (22.3)	9 (2.3)	5 (1.3)	-	385 (100)	**4.69**	**0.582**

Source: Author's Computation, (2025)

Effect of Digital Entrepreneurship on the Efficiency of Production and Operations Management of MSMEs in Southwest Nigeria

Table 4 presents the descriptive results on the impact of the digital entrepreneurship business model on the efficiency of production and operations among MSMEs in Southwest Nigeria. The findings reveal that a large proportion of respondents, 164 (42.6%) and 87 (22.6%), strongly agreed and agreed respectively that adopting digital technology to better understand customer needs improved the efficiency of production and operations management in their enterprises. In contrast, 116 respondents (30.1%) were neutral, while 14 (3.6%) and 4 (1%) disagreed and strongly disagreed, respectively, with this assertion.

Furthermore, the table shows the mean (4.02) and standard deviation (0.984) which imply that the respondents in the study area unanimously agreed that digital technology adopted to understanding customer needs enhanced the efficiency of production and operations management of MSMEs.

The table reveals that a majority of the respondents285 (74%) strongly agree and 86 (22.3%) agree that the adoption of digital technologies enabled enterprises to shift from a controlled value chain orientation to a network orientation, rooted in a web of relationships, which enhanced the efficiency of production and operations management among the selected MSMEs. Conversely, only 9 respondents (2.3%) were indifferent, while 5 respondents (1.3%) disagreed with this assertion. The calculated mean score of 4.69 and a standard deviation of 0.582 indicate a strong consensus among the respondents in support of the idea. This suggests that most respondents firmly believe that the integration of digital technologies has significantly contributed to improving production and operational efficiency through the transition to a more interconnected, network-based operational model among MSMEs in Southwest Nigeria.

Table 5 Digitalisation of Entrepreneurial Process and Efficiency of Production and Operations Management of MSMEs

Digital Entrepreneurship Enabler	SA	A	Ind	D	SD	Total	Mean	Standard Deviation
The digitalization of the process of generating ideas in our enterprise enhances the efficiency of production and operations management of our enterprises	134 (34.8)	108 (28.1)	124 (32.2)	15 (3.9)	4 (1.0)	385 (100)	**3.92**	**0.957**
The digitalization of the process of generalizing the possibility of the ideas into a tangible offer by considering all the factors needed in producing and marketing the product (Simulation) enhances the efficiency of production and operations management	174 (45.2)	143 (37.1)	50 (13.0)	10 (2.6)	8 (2.1)	385 (100)	**4.21**	**0.912**
The digitalization process of feasibility study and business plan development in our enterprise enhances the efficiency of production and operations management of our enterprises	204 (53.0)	154 (40.0)	13 (3.4)	10 (2.6)	4 (1.0)	385 (100)	**4.41**	**0.769**

Source: Author's Computation, (2025)

Table 5 presents the descriptive analysis of the effect of digitalizing entrepreneurial processes on the efficiency of production and operations among MSMEs in Southwest Nigeria.

Findings indicate that 134 respondents (34.8%) and 108 respondents (28.1%) strongly agreed and agreed, respectively, that the digitalization of idea generation processes enhanced production and operations efficiency. Conversely, 124 respondents (32.2%) were neutral, while 15 (3.9%) disagreed and 4 (1%) strongly disagreed. The mean score of 3.92 with a standard deviation of 0.957 suggests that, on average, respondents agreed that digitalization of idea generation positively influenced efficiency.

Similarly, 174 respondents (45.2%) and 143 respondents (37.1%) strongly agreed and agreed, respectively, that simulating ideas into tangible offerings by considering production and marketing factors improved operational efficiency. On the other hand, 50 respondents (13%) were undecided, while 10 (2.6%) disagreed and 8 (2.1%) strongly disagreed. The mean score of 4.21 and standard deviation of 0.912 further indicate strong agreement that simulation-driven digitalization enhances efficiency.

In addition, 204 respondents (53%) and 154 respondents (40%) strongly agreed and agreed, respectively, that digitalizing feasibility studies and business plan development enhanced the efficiency of production and operations. Only 13 respondents (3.4%) were neutral, while 10 (2.6%) disagreed and 4 (1%) strongly disagreed. The mean value of 4.41 with a standard deviation of 0.863 confirms that respondents overwhelmingly supported the view that digitalized feasibility analysis and business planning significantly improved operational efficiency.

Table 6: Digital Platforms and Efficiency of Production and Operations Management of MSMEs

Digital Entrepreneurship Enabler	SA	A	Ind	D	SD	Total	Mean	Standard Deviation

Adoption of E-payments enhances the efficiency of production and operations management of our enterprises	133 (34.5)	213 (55.3)	13 (3.4)	18 (4.7)	8 (2.1)	385 (100)	**4.16**	**0.855**
Adoption of E-marketing (Digital marketing) enhances the efficiency of production and operations management of our enterprises	133 (34.5)	213 (55.3)	29 (7.5)	10 (2.6)	-	385 (100)	**4.22**	**0.692**
Adoption of E-business enhances the efficiency of production and operations management of our enterprises	121 (31.4)	222 (57.7)	21 (5.5)	10 (2.6)	11 (2.9)	385 (100)	**4.12**	**0.847**

Source: Author's Computation (2025)

Table 6 presents a descriptive analysis of the impact of digital platforms on the efficiency of production and operations management among MSMEs in Southwest Nigeria. The data indicates that the majority of respondents—133 (34.5%) strongly agree and 213 (55.3%) agree—that the adoption of electronic payments (E-payments) has improved the efficiency of production and operations management within these enterprises. In contrast, smaller proportions of respondents were indifferent (13; 3.4%), disagreed (18; 4.7%), or strongly disagreed (8; 2.1%) with this assertion. The mean score of 4.16 and a standard deviation of 0.855 further reflect a strong consensus among respondents that the integration of E-payment systems positively contributes to enhancing operational and production efficiencies in MSMEs.

The table also indicates that a majority of respondents,133 (34.5%), strongly agree and 213 (55.3%) agree that the adoption of E-marketing (digital marketing) has enhanced the efficiency of production and operations management within the enterprises. Meanwhile, 29 (7.5%) of the respondents were indifferent, and 10 (2.6%) disagreed with this assertion. The mean score of 4.22 and a standard deviation of 0.692 further highlight a strong consensus among respondents, demonstrating widespread agreement that the use of E-marketing contributes positively to improving production and operational efficiency in MSMEs.

The table further reveals that a majority of respondents,121 (31.4%), strongly agree and 222 (57.7%) agree that the adoption of E-business has enhanced the efficiency of production and operations management of MSMEs. Conversely, 21 (5.5%) were indifferent, 10 (2.6%) disagreed, and 11 (2.9%) strongly disagreed with this view. The mean value of 4.12 and standard deviation of 0.847 indicate a strong consensus among respondents, reflecting widespread agreement that E-business adoption positively impacts the efficiency of production and operations management in MSMEs.

Table 7: Effect of Digital Entrepreneurship on Efficiency of Production and Operations Management of MSMEs (Coefficients)

a. Dependent Variable: Efficiency of Production and Operations Management

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	1.142	.186	Beta	6.141	.000
	DBM	.100	.036	.114	2.798	.005
	DEP	.170	.028	.240	6.002	.000
	DP	.400	.025	.576	16.124	.000

Source: Author's Computation, (2025)

Table 8 Model summary of regression estimates

a. Predictors: (Constant), DBM, DEP, DP

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.754[a]	0.569	0.563	0.337

Source: Author's Computation, (2025)

Table 9 Combined Effect of Digital Entrepreneurship on Efficiency of Production and Operations Management of MSMEs

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	56.695	3	18.898	167.239	.000[b]
	Residual	42.930	381	0.113		
	Total	99.626	384			

a. **Dependent Variable: Efficiency of Production and Operations Management**
b. **Predictors: (Constant), DBM, DEP, DP**

Source: Author's Computation, (2025)

Test of Hypothesis three

Ho3: There is no significant effect of digital entrepreneurship on the efficiency of Production and Operations Management of MSMEs in Southwest Nigeria.
Tables 4 to 9 present the analysis of the effect of digital entrepreneurship on the efficiency of production and operations management of MSMEs in Southwest Nigeria.

Table 7 reveals that the digital business model has a significant positive impact on the efficiency of production and operations management of MSMEs in the study area (B = 0.100; t = 2.798; p = 0.005). Similarly, the digitalization of entrepreneurial processes significantly and positively influences the efficiency of production and operations management (B = 0.170; t = 6.002; p = 0.000). Moreover, digital platforms also show a strong positive effect on production and operations efficiency (B = 0.400; t = 16.124; p = 0.000).

Table 8 reports a coefficient of determination (R^2) of 0.569, indicating that approximately 57% of the variation in production and operations efficiency among MSMEs in the study area is explained by digital entrepreneurship.

Finally, **Table 9** shows that digital entrepreneurship has a statistically significant overall effect on production and operations management of MSMEs (F = 167.239, p = 0.000) in Southwest Nigeria.

These results lead to the rejection of the null hypothesis, confirming that digital entrepreneurship significantly influences the efficiency of production and operations management of MSMEs in the region.

Decision on hypothesis three

Based on the results of tables 7 to 9, it is meaningfully justifiable to conclude that digital entrepreneurship hasa significant effect on the efficiency of production and operations of MSMEs in Southwest Nigeria.

Recommendations

The study recommends that MSMEs that want to improve on its profit level; customer satisfaction; and efficiency of production and operations management need to be digitally enabled or digitalized. Furthermore, MSMEs need to maximize the digital platforms; digitalizations of entrepreneurial process and digital business model at their disposal.

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