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Digital Literacy in the Context of Small and Medium Enterprises (SMEs): A Performance Dynamics

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Abstract

The rapid technological change and the need for businesses especially small and medium enterprises (SMEs) to follow up this change necessitated this study to examine the relationship existing between digital literacy and the performance of SMEs in Southeast Nigeria as a broad objective. The study was anchored on the Diffusion of Innovation Theory. The population of the study was 1321 SMEs, and the sample size was 289. A structured questionnaire was the instrument for data collection, and it was subjected to both validity and reliability tests. Data were analyzed using a combination of descriptive and inferential statistics and the hypothesis was tested at a 5% level of significance. The findings revealed that there was a statistically significant positive relationship exists between social media engagement and operational efficiency in SMEs in Southeast Nigeria and that a 61% change in the dependent variable is as a result of changes in the independent variables (R = .778, R-Square = .605, F statistics = 371.545, P-value < .05). The study concluded that digital literacy has a statistically significant relationship with performance of SMEs in Southeast Nigeria. Therefore, it was recommended among others that business owners/managers should deploy every means necessary to see that their businesses operate to a certain level of digital literacy to prevent cyber-attacks and create a free workflow in the business.

Keywords: *Digital Literacy, Small and Medium Enterprises (SMEs), Performance, Cyber Security, Social Media Engagement, Operational Efficiency*

INTRODUCTION

The world is experiencing a global upsurge where the economies of numerous nations are seeking ways to advance through available technological skills (Nwafor, Umetiti & Ndu-Anunobi, 2024) and digital literacy is at the centre of all these. Digital literacy encompasses far more than mere competency in specific computer abilities. Indeed, these fundamental skills are essential; nevertheless, the essence of digital literacy is in recognising the significance of these skills in certain situations and the capacity to apply them creatively (Jacobs & Castek, 2018). Digital literacy plays a crucial role in enhancing the performance of Small-Medium Enterprises (SMEs). Using digital technology for SMEs is a new opportunity and challenge for business people (Ilyas, Munir, Tamsah, Mustafa & Yusriadi, 2021).

The use of digital technology for businesses needs to be accompanied by good digital literacy to encourage SMEs' performance to be more optimal (Trinugroho, Pamungkas, Wiwoho, Damayanti & Pramono 2021). Studies have shown that digital literacy positively influences the performance of SMEs in various regions. These findings underscore the importance of enhancing digital literacy among SMEs to improve their overall performance, adapt to digital transformations, and thrive in

the evolving business landscape. Having strong digital literacy skills allow employees to adapt to change in the workplace and leverage new technology needed for the job (Kadhim, 2024).

A digital world needs digital-savvy firms or employees to help navigate the numerous challenges and opportunities presented by technology (Arachie, Nzewi, Emejulu and Kekeocha, 2020). Employees or organisations with digital literacy can recognise and comprehend deficiencies in workplace processes. By comprehending the intricacies of digital instruments, they can optimise work operations and enhance their company's earnings. The task of cultivating digital proficiency among an organization's personnel may appear daunting; nonetheless, it is essential for enhancing productivity, innovation, and growth (Adeoye, Olubiyi, Ajiteru & Adaranijo, 2023).

Digital literacy encompasses the proficient use of diverse digital technologies to generate, search for, and convey solutions to others (Arachie et al., 2020). It involves the ability to locate, assess, and produce content through technology while communicating effectively. This skill set is crucial for navigating the information technology framework that underpins contemporary society. SMEs face several challenges and lapses due to low levels of digital literacy, hindering their ability to fully leverage digital technologies and compete in the digital age (Hargittai, 2019). The owners of SMEs and employees may not fully understand the benefits and potential of digital technologies for their businesses, this lack of awareness can lead to reluctance to invest in digital tools and training. Even when SMEs recognize the importance of digital literacy, they may face a skills gap, lacking the necessary knowledge and abilities to use digital technologies proficiently. This can hinder their ability to adopt and utilize digital tools and platforms and negatively affect their performance. They may also lack the knowledge and resources to protect their businesses from cyber threats, which can deter them from adopting digital tools. Hence, this study was necessitated to look at how digital literacy affects the performance of SMEs as the broad objective. Specifically, this study seeks to:

i. identify the challenges SMEs face in being digitally literate in Southeast Nigeria.
ii. examine the level of cyber security awareness in SMEs in Southeast Nigeria.
iii. ascertain the relationship between social media engagement and operational efficiency in SMEs in Southeast Nigeria.

REVIEW OF RELATED LITERATURE

Digital Literacy

Digital literacy is not a fixed skill set but rather a spectrum of abilities that develop and evolve, as technology advances, digital literacy evolves, requiring ongoing learning and adaptation. Essentially, it is about recognizing that digital skills are dynamic and should be continually updated and expanded. Selwyn (2020) points out that digital literacy is not a singular skill but a complex and dynamic process that unfolds across a continuum of engagement with digital technologies. Livingstone and Helsper (2019) state that it is important to recognize the different levels of digital literacy and to provide appropriate support for individuals at each stage of their development. It is not a static endpoint but an ongoing process of learning, adaptation, and evolution (Mousa, 2021).

Digital literacy should not only cover current tools and platforms but also prepare individuals to navigate future changes and innovations. This approach highlights the importance of cultivating adaptable, critical, and forward-thinking skills that can accommodate ongoing technological advancements and shifts in digital practices. Hargadon and Brown (2019) in their journal state that digital literacy in the 21st century must encompass critical thinking, problem-solving, collaboration, and creativity in a digital environment. The Organization for Economic Cooperation and Development (OECD) (2019) in its publication points out that individuals need to be equipped with the skills and knowledge to navigate the evolving digital landscape, including artificial intelligence,

big data, and the Internet of Things. Individuals need to continuously develop their digital skills and knowledge to keep pace with the rapid changes in technology and society (European Commission, 2020).

It is noteworthy that digital literacy is no longer simply about technical proficiency but also encompasses equity and inclusion**.** It ensures that all individuals, regardless of their background or socioeconomic status, have the skills and access needed to participate fully in the digital world. It addresses disparities in technology access, knowledge, and usage. This approach fosters a more inclusive society where everyone has the opportunity to succeed in a technology-driven world, contributing to greater equity in educational, economic, and social opportunities. Selwyn (2022) opines that digital literacy is not just about individual skills; it is also about ensuring equitable access and participation in the digital world for all. The United Nations Educational, Scientific and Cultural Organization (2021) states that it is essential to address the digital divide and to promote digital literacy among marginalized communities.

Challenges Faced by SMEs in being Digitally Literate

Small and Medium Enterprises (SMEs) play a vital role in economies worldwide, contributing significantly to job creation, innovation, and economic growth (Arachie, et al., 2020). However, they face numerous challenges that can hinder their development and sustainability. One of the most significant challenges for SMEs is securing adequate financing. Ekanem (2018) avers that SMEs often struggle to provide the collateral required by traditional lenders (e.g., banks). This is particularly true for start-ups and businesses with limited assets. Ribeiro, Azzoni and Souza (2020) state that new and young SMEs may lack a strong credit history, making them less attractive to lenders. SMEs often face higher interest rates on loans compared to larger companies (Brown & Petersen, 2019).

Finding and retaining qualified employees is another major hurdle for SMEs. They are often faced with challenges such as skills gaps, competition for talent, entering and competing in established markets and limited training opportunities. Mer and Virdi (2024) in their study state that the rapid pace of technological advancements has led to a growing skills gap, making it difficult for SMEs to find employees with the necessary expertise. Herrmann (2019) avers that SMEs may lack the resources to provide adequate training and development opportunities for their employees. SMEs may struggle to compete with larger, well-established firms that enjoy economies of scale and brand recognition (Jones, 2018). They often have limited resources for marketing and advertising, making it challenging to reach potential customers (Smith, 2020). Reimers (2020) opines that transitioning to online platforms and navigating e-commerce complexities can be a significant barrier for SMEs.

Embracing new technologies and staying innovative is crucial for SMEs to remain competitive, however, SMEs are being held back from attaining this goal which may be as a result of cost barriers, lack of technological expertise, cyberattacks and regulatory burden and complexity. These averments were affirmed by Smith (2020) who states that implementing new technologies can be expensive, especially for resource-constrained SMEs. Smith (2020) further states that SMEs may lack the technical expertise to effectively implement and manage new technologies.

Cyber security Awareness

Cyber security is made up of two words, cyber and security. Nwabuike, Onodugo, Arachie, and Nkwunonwo (2020) assert that "cyber," originating from cybernetics, denotes skill or control. It was initially characterised as the integration of life forms and information systems within a networked environment. Conversely, security is defined as the requisite conditions for sustaining a system,

wherein the sequence of activities that uphold these conditions, along with factors that may induce deviations, are classified as threats (Yokohama, 2017). Cyber security awareness, is therefore, a crucial aspect of protecting individuals and organizations from cyber threats and attacks. It involves educating employees, users, and stakeholders about potential risks, security best practices, and the importance of maintaining secure practices while using digital devices, systems, and networks. Kumar and Shankar (2015) in their study highlight that cyber security awareness is essential for mitigating risks and reducing vulnerabilities within organizations.

Organizations that prioritize cyber security awareness often conduct training sessions, workshops, and provide resources to help employees recognize and respond to cyber threats effectively. By promoting cyber security awareness, organizations can reduce the likelihood of falling victim to cyber-attacks, data breaches, ransomware, phishing scams, and other malicious activities. Kantarci and Cicekli (2019) in their study emphasize the need for engaging content, interactive exercises, and tailored training programs that cater to specific roles and responsibilities within organizations. Khan et al. (2021) emphasize the need for awareness programs that educate individuals about common social engineering tactics and how to avoid falling prey to such attacks.

Organizations and individuals must study the factors influencing cyber security awareness and possible tactics to avoid falling prey to the attack. Ahmad et al. (2017) in their study identify factors like employee demographics, job responsibilities, organizational culture, and leadership commitment as crucial elements in shaping individual and organizational awareness levels. Rahman et al. (2023) offer a comprehensive analysis of the current state of cybersecurity awareness and outline key recommendations for future research. The authors emphasize the need for a holistic approach that considers cultural influences, ethical considerations, and the evolving nature of cyber threats.

Social Media Engagement

Social media engagement in business can be a powerful tool for building brand awareness, connecting with customers, driving traffic to a website, and generating leads and sales. It allows businesses to reach a wide audience, engage with their target market in real time, and create a sense of community around their brand. However, businesses need to have a well-thought-out strategy in place to effectively leverage social media platforms. Smith (2017) avers that social media engagement is about more than just getting likes and shares. It is about building relationships with your customers and creating a community around your brand. Patel (2016) states that engaging with your audience on social media can lead to increased brand awareness, higher conversion rates, and stronger customer loyalty.

Effective social media engagement involves creating and sharing valuable content that resonates with your audience, actively responding to comments and messages, participating in conversations, and building relationships with followers. It's important to maintain a consistent brand voice and persona across all social media channels to convey a cohesive message and establish trust with your audience. Porterfield (2019) opines that building a strong social media community requires ongoing effort, but the rewards are worth it.

Businesses should also monitor social media analytics to track the performance of their content, understand their audience's preferences, and adjust their strategy accordingly. By engaging with their audience authentically and consistently, businesses can strengthen their brand presence, foster customer loyalty, and drive business growth through social media. Adewumi et al. (2024) aver that platforms like Facebook, Instagram, Twitter, and LinkedIn offer various tools and analytics that allow businesses to tailor their marketing efforts, target specific demographics, and measure the success of their campaigns. Machine learning algorithms can analyze vast amounts of data from

social media interactions to identify the best times to post, the most engaging types of content, and the optimal frequency of posts (Nwaimo, Adegbola & Adegbola, 2024).

Small and Medium Enterprises Performance

The existence of small businesses in different nations is crucial to their growth and development (Arachie, Dibua, Idigo, 2023). However, their performance can be influenced by a myriad of factors, both external and internal. External factors such as economic conditions, industry competition, regulatory environment, and access to financing can impact SME performance (Albalushi & Naqshbandi, 2022). For example, during times of economic downturn, SMEs may struggle with reduced consumer spending and demand, leading to lower revenues and profitability. On the other hand, a favourable regulatory environment and access to funding can provide SMEs with opportunities for growth and expansion. Chircop and Debono (2019) aver that factors such as access to finance, innovation, and human capital are crucial for enhancing SME performance. Moktadir and Mukit (2020) state that factors such as access to finance, managerial skills, and market orientation significantly influence SME performance. Competition can stimulate innovation and efficiency, but it can also pose challenges for smaller businesses (Porter, 2016). OECD (2018) avers that favourable regulations can promote SME growth, while complex regulations can create barriers. Smalley and Payne (2019) state that government support programs, such as grants and loans, can be crucial for SME development.

Internal factors such as leadership, management practices, technology adoption, innovation, and workforce skills also play a critical role in determining SME performance. Effective leadership and management practices are essential for guiding the business towards its goals and ensuring operational efficiency. Adopting technology and innovative practices can help SMEs stay competitive and meet changing market demands. Additionally, investing in workforce development and skills training can enhance productivity and overall performance. Yoo and Lee (2018) agree that adopting new technologies can boost productivity and competitiveness, but it requires significant investment. Afsar et al. (2019) in their study discovered that transformational leadership positively impacts SME performance. Doyle and Payne (2020) state that a clear strategic plan improves SME performance. Coad and Rao (2018) in their study found that SMEs with higher levels of innovation and internationalization tend to have better performance outcomes.

Operational Efficiency

Operational efficiency in business refers to maximizing output while minimizing input. It involves identifying and implementing processes and systems that streamline operations, reduce waste, and improve productivity. Walker (2018) states that operational efficiency directly translates to higher profits by reducing costs, optimizing resource utilization, and enhancing productivity. It enables businesses to offer competitive pricing, faster delivery, and higher quality products/services (Berman, 2015). It goes beyond traditional financial indicators and includes measures of resource utilization, process cycle time, and quality control (Singh, Clement & Sonwaney, 2018).

Factors like technology and human capital can affect operational efficiency. Gajic, Petrovic, Milanovic, Conic and Gligorijevic (2024) opine that advancements in technology like automation, artificial intelligence, and cloud computing significantly enhance operational efficiency. Erzsébet, Németh, Katona, Kovács & Tollár (2015) aver that skilled employees, motivated workforce, and effective leadership are crucial for driving operational efficiency. By improving operational efficiency, SMEs can lower costs, increase profitability, and enhance competitiveness in the market. It also allows businesses to be more responsive to customer demands, adapt to changing market conditions, and achieve sustainable growth.

Theoretical Framework

This work is anchored on the Diffusion of Innovation Theory. This theory was propounded by Everett Rogers in 1962 after conducting experiments to find out how new ideas, technology, products, or practices spread through a population. It has been widely applied in various fields, from marketing and communication to public health and technology adoption. The research primarily concentrated on the perceived characteristics of technologies and the innovativeness of the organisations that implement them. Rogers identifies five characteristics of an innovation that affect its adoption: relative benefit over existing technologies, compatibility with organisational workflows and expertise, implementation difficulty, trialability, and observability of the innovation's evolution within the organisation and among competitors. Digital literacy is a key driver of innovation adoption for SMEs, and Rogers' Diffusion of Innovation Theory offers a framework to understand their journey. By recognizing those five attributes and the key factors influencing adoption, SMEs can tailor their strategies to maximize the benefits of digital technologies and achieve significant performance improvements. Batra and Kumar (2017) agree that digital literacy is increasingly recognized as a crucial factor in adopting digital innovations, particularly for SMEs.

The link between this theory and the study is for SMEs to understand the need to value innovation and have a good understanding of technology in order to embrace digital solutions as challenges are inevitable and exhaustible. Being digital will also help in gaining a competitive advantage.

Empirical Review

Lestari, Sulastri, Shihab, and Andriana (2024) examined the impact of social media marketing on the commercial performance of SMEs in Palembang, South Sumatera. Quantitative approaches were employed, and data analysis was conducted utilising descriptive statistics. Samples were chosen with the incidental sampling technique. The data gathering method involved delivering questionnaires to 42 small and medium-sized enterprise owners in Palembang, South Sumatra. Results revealed that 76 percent of participants utilised social media for marketing purposes. It was also revealed that social media marketing influenced annual sales performance by 10 to 30 percent.

Ojobo, Orga and Okechukwu (2023) investigated the impact of digital literacy on the performance of small-scale businesses in Enugu State. The research employed a descriptive survey design methodology. The principal source of data was the administration of a questionnaire. A total of 366 selected proprietors of small-scale enterprises in Enugu, each having a minimum of five years of operation. Three hundred twenty-two (322) staff members completed and submitted the questionnaire accurately. This resulted in an 88 percent response rate. The results demonstrated that Digital Literacy significantly positively influenced the number of commercial transactions in small-scale enterprises in Enugu State, $Z(95, n = 322) = 7.885 < 9.557, p < .05$. Digital literacy significantly positively influenced the service costs of small-scale businesses in Enugu State, $Z(95, n = 322) = 8.248 < 12.037, p < .05$.

Elvira and Yusuf (2023) investigated the relationship between digital literacy and the performance of SMEs in Nairobi County, Kenya. The target population comprised 21,000 SMEs licensed by Nairobi City County, from which a sample of 100 SMEs was selected. The study performed both descriptive and inferential analyses. The results indicated that Digital Literacy substantially affects the Firm Performance of SMEs. The correlation between digital culture, technical capacity, and the performance of SMEs is significant. Nonetheless, they accounted for merely 31.2% of the variance in the Firm Performance of SMEs in Nairobi. The research identified a modestly significant association between Firm Performance, Digital Culture, and Technical Capacity. Technical capacity, however, exhibited a negative association with firm performance. The research identified a

substantial positive correlation between the performance of SMEs and their digital culture. The Technical Capacity had a substantial negative correlation with the Firm Performance of SMEs.

Patria, Alam, Mulyadi, and Setyarko (2023) investigated the impact of digital technology, digital literacy, and digital marketing on the performance of SMEs in Bekasi, West Java. The research employed a quantitative methodology via a survey approach. Data for the study were gathered via a questionnaire method, utilising a sample of 338 respondents through convenience and snowball sampling techniques. The research data was analysed using SPSS software version 25.0. Multiple regression analysis was employed to determine the impact of independent variables on the dependent variable. This study's findings indicate that digital technology, digital literacy, and digital marketing significantly and positively influence SME performance.

Kádárová, Lachvajderová, and Sukopová (2023) examined the correlation between digitalisation and business performance in SMEs during the COVID-19 pandemic across all European countries. The research examined the effect of digitalisation on the performance of small and medium-sized enterprises (SMEs). The research employs the statistical software EViews 12 to conduct an econometric analysis of panel data, examining the impact of digitalisation on SME performance and validating the proposed hypotheses. The dataset consisted of 135 observations gathered over a five-year span from 27 European nations. A linear regression model was employed to evaluate the hypotheses, demonstrating the link between the independent and dependent variables. Model specifications are established by a series of tests. The outcomes of this study indicated that the incorporation of digital technology and digital intensity substantially propels digitalisation in European SMEs, resulting in favourable effects on performance.

Nurliah, Azzahra, Azizah, Suzana, and Hardjowikarto (2023) investigated how digital technology in the application of digitalisation skills might mediate the influence of business on MSME performance in Kaliwulu village, Indonesia. This study employs a quantitative methodology utilising questionnaire design and explanatory research, incorporating purposive sampling of product types marketed, MSMEs engaging in sales via social media and e-commerce, and MSMEs that have undergone entrepreneurship training, with a sample size of 268 MSMEs in Kaliwulu Village and a response rate of 50 MSMEs. The employed analysis is SmartPLS. The analysis results indicate that the utilisation of digitalisation skills somewhat mediates the effect of business on MSME success. Digital technology serves as an intermediary variable that enables MSMEs to compete in the global market by facilitating online marketing, thereby enhancing product sales. Additionally, it allows for more efficient product processing and effective distribution.

Aryanto (2022) examined the digital literacy proficiency of SME participants in Bayat Klaten, Indonesia. The study employed a census method involving all members of the cluster specialising in batik natural dyes in Bayat Kebon Indah Klaten. All 186 batik members were excluded as respondents in this study due to their involvement in digital marketing activities to promote their natural dyes batik items. The utilisation of social media for product promotion was susceptible to the impacts of digital illiteracy. Digital literacy serves as a mediating variable that connects digital marketing capabilities with the success of small and medium-sized enterprises (SMEs). The results indicated that digital marketing capability greatly influences SME business performance, digital literacy considerably affects SME business performance, and digital literacy has a substantial impact on digital marketing capability. The study's implications revealed that digital literacy enabled respondents to disbelieve hoaxes and various deceptive commercial practices, hence enhancing their caution in business management.

Frimpong, Agyapong, and Agyapong (2022) examined the relationship between financial literacy, access to digital financing, and the performance of SMEs in Ghana's Central Region. The research examined the digital platform knowledge and utilisation of SMEs. The study analysed the correlation between financial literacy, access to digital finance, and the performance of small and medium-sized enterprises (SMEs). The investigation utilised a quantitative methodology. A total of 400 responses were collected from SMEs in Cape Coast, Mankessim, Assin Fosu, Agona Swedru, and Kasoa utilising the purposive sampling technique. The research employed self-administered questionnaires for data collection. SPSS was utilised to assess descriptive statistics. The findings indicated that SMEs in the studied regions utilise Mobile Money more than any other digital channel. PLS-SEM was employed to examine the correlation between financial literacy, digital finance, and SME performance. Financial literacy was found to have a beneficial impact on access to digital money. Furthermore, access to digital financing enhanced performance. Digital finance facilitates the connection between financial literacy and the performance of SMEs. Access to digital money is as essential as financial awareness for enhancing performance.

Rakib, Azis, Najib, and Isma (2022) examined the impact of digital literacy, business innovation, and competitive advantage on the sustainability of SMEs in Makassar, Indonesia. This study used a quantitative methodology, with a research population of 409 SMEs receiving help in Makassar City, Indonesia. The sample is determined using the Slovin formula, resulting in 202 respondents. The sample was conducted by probabilistic methods with a basic random sample procedure. The data collection method employed field data derived from research variable indicators, which were subsequently evaluated for validity and reliability. The data analysis technique employs SEM Amos 21. The findings indicated that digital literacy and innovation significantly influence competitive advantage and business sustainability, whereas digital literacy and business innovation notably affect the sustainability of SMEs through competitive advantage.

Arachie, et al., (2020) investigated digital literacy in the post-Coronavirus period from a management viewpoint for small enterprises in Africa. The research employed a qualitative methodology. The study aimed to examine the essential digital skills required for small firms in Africa to maintain competitiveness in the post-COVID-19 landscape and to assess the problems encountered by these enterprises in adopting ICT in their operations. The findings indicated that the possession of digital abilities by business owners and workers could distinguish between competitive and non-competitive organisations.

METHODOLOGY

This work used a survey research design because of the nature of the study. This study collected data from sampled respondents through a questionnaire. The population of the study is 1321 SMEs registered in the Ministry of Commerce and Industry in the five southeast states in Nigeria as of the 18th of September, 2024. The sample size of the study is 298 as calculated by using Krejcie and Morgan's 1970 sample size determination formula. The source of data for this study is majorly primary. Specifically, a structured questionnaire was used for this purpose. The data collection instrument is a Likert-structured questionnaire with 2 parts. The first part captured the demographic characteristics of the respondents while the second part captured data for objectives one to three. The scale will be as follows: Strongly agree (5), Agree (4), Undecided (3), Disagree (2) and Strongly disagree (1). The data for the study was collected using online and in-person techniques. Two research assistants were used for the in-person collection while Google form was used for the online collection distributed to the emails and WhatsApp numbers of the respondents. The validity of the instrument was tested using content validity. The topic, objective, research question and hypotheses of the study were evaluated by two experts and the questionnaire was validated by making sure the

questions were in line with what the study intends to achieve. The reliability of the instrument was done using Cronbach Alpha which tested for internal consistency of the questionnaire. The responses analysed from the pre-test showed a reliability coefficient of 0.767 which indicates that it is consistent enough to be used for this study...The data were analyzed using a combination of descriptive and inferential statistics, through the help of Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics include frequencies, means and ranks while inferential statistics is simple regression (to test the extent of the relationship). The hypothesis is tested at a 5% (0.05) level of significance. The hypothesis will be accepted if the probability value (p-value) observed after the analysis is less than the level of significance deployed (0.05), otherwise, the null hypothesis will be accepted.

Descriptive Statistics for Research Questions

A total of 298 copies of the questionnaire were distributed with emphasis on SMEs with at least 2 employees, out of which 278 were collected, but in the end, 245 were finally used for the study, representing 82% of the total distributed copies of the questionnaire. Out of the total collected questionnaire, 33 copies were not used because they were incorrectly filled, mutilated or incompletely filled.

Research Question One

What are the challenges SMEs face in being digitally literate in southeast Nigeria?

Table 1: Distribution of responses for challenges SMEs face in southeast Nigeria

S/N	Questionnaire Items	SA (5)	A (4)	UD (3)	D (2)	SD (1)	Mean	Verdict	Rank
	Challenges								
1	We struggle to find qualified employees with the necessary digital skills	160	78	-	5	2	4.59	Accept	2nd
2	Our company lacks the resources (budget, time) to invest in digital training for employees.	90	109	-	36	10	3.95	Accept	3rd
3	We have difficulty keeping up with the rapid pace of technological change.	46	80	25	44	50	3.11	Accept	6th
4	We lack clear strategies and plans for incorporating digital technologies into our operations	18	78	-	100	49	2.66	Reject	8th
5	We are unsure about the best digital tools and platforms to use for our business.	66	70	10	59	40	3.26	Accept	5th
6	We lack access to reliable and affordable internet connectivity	190	31	12	12	-	4.63	Accept	1st
7	We face difficulties integrating new technologies with existing operations.	37	79	-	30	99	2.69	Reject	7th
8	Our current information technology (IT) infrastructure is outdated and hinders digital adoption.	70	99	18	45	13	3.69		4th

Source: Field Survey, 2024

Table 1 shows the distribution of responses for the challenges of the respondents and the ranking of these challenges. The object of analysis here is the mean, with a threshold of 3 and above. That is, any questionnaire item with a mean of 3 and above should be accepted as one of the challenges SMEs faces in being digitally literate, otherwise, it will be rejected. When they were asked if they struggle to find qualified employees with the necessary digital skills**,** a mean of 4.9 shows that they agreed which also showed in the ranking that it is the highest challenge they face. A mean of 3.95 reveals that

the respondents agreed that their company lacks the resources to invest in digital training for employees and this is the 3rd challenge they face from the highest order. When they were asked if they have difficulty in keeping up with the rapid pace of technological change, it shows a mean of 3.11 showing that they also agreed, that is, they do have difficulty in keeping up with the technological pace it is ranked 6th in the list of challenges they face. However, they disagreed with the question of whether they lack clear strategies and plans for incorporating digital technologies into their operations with a mean of 2.66, this means they do not lack the strategies which is why it is the last (8th) in the list of challenges they face. When they were asked if they were unsure about the best digital tools and platforms to use, a mean of 3.26 indicates that they accepted, this turned out to be the 5th place in terms of ranking of challenges they face. Similarly, they maintained that they do lack access to reliable and affordable internet with a mean of 4.63, placing it in the 1st position in the ranking of challenges SMEs in the Southeast face. When asked if they face difficulties integrating new technologies with existing operations, they disagreed showing a mean of 2.69, that is to say, they do not face difficulties integrating new technologies, ranking it as the 7th most difficult challenge. They concurred with a mean of 3.69 when asked if their current information technology infrastructure is outdated, this showed that it is the 4th challenge they face in the list of challenges.

Research Question Two

What is the level of cyber security awareness in SMEs in Southeast Nigeria

Table 2: Distribution of responses for cyber security awareness
Source: Field Survey, 2024.

S/N	Questionnaire Items	SA (5)	A (4)	UD (3)	D (2)	SD (1)	Mean	Verdict	Rank
	Cyber security Awareness								
1	We always teach our employees about internet crimes and how to prevent them.	-	19	-	130	96	1.76	Reject	j4th
2	We have clear policies and procedures to prevent internet crimes.	-	13	-	89	143	1.52	Reject	6th
3	We use strong passwords for all our business accounts	67	121	12	30	15	3.80	Accept	1st
4	We keep our software and systems updated.	49	56	-	89	51	2.85	Reject	2nd
5	We are aware of common online threats.	19	40	39	70	77	2.40	Reject	3rd
6	We have a plan in place for protecting our systems if hacked.	10	20	11	60	144	1.74	Reject	5th
7	We use codes (data encryption) to protect sensitive information.	-	34	-	**84**	**127**	1.76	Reject	j4th
8	We check our systems regularly to identify weaknesses	-	12	-	69	164	1.43	Reject	7th

Table 2 indicates the distribution of responses for internet safety awareness of the respondents and the ranking of the level of awareness. The analysis here is carried out using the mean, with a benchmark of acceptance of 3 and above. When the respondents were asked if they always teach their employees about internet crimes and how to prevent them, a mean of 1.76 shows that they disagreed, which also indicates that it is joint 4th in the ranking of the level of awareness. The

respondents disagreed that they have clear policies and procedures to prevent internet crimes with a mean of 1.52 this is the 6th in the rank of awareness. A mean of 3.80 shows that they agreed that they use strong passwords for all their business accounts, being the 1st in the ranking shows that it is the highest level of cyber security awareness, while a mean of 42.85 indicates that they disagreed that they keep their software and systems updated, showing the 2nd level of awareness in the ranking. They also agreed that they are aware of common online threats with a mean of 2.4, placing in 3rd position in the ranking of awareness. They also disagreed that they have a plan in place for protecting their systems if hacked with a mean of 1.74, this showed the 5th level of awareness in the ranking. A mean of 1.76 shows that the respondents disagreed that they use data encryption to protect sensitive information which is the joint 4th in the level of awareness rank. Similarly, they disagreed with a mean of 1.43 that they check their systems regularly to identify weaknesses, which is the 7th level of cyber security awareness the studied SMEs have.

Research Question Three

What is the relationship between social media engagement and operational efficiency in Southeast Nigeria?

Table 3: Distribution of Responses for Social Media Engagement and Operational Efficiency

S/N	Questionnaire Items	SA (5)	A (4)	UD (3)	D (2)	SD (1)	Mean	Verdict
	Independent Variables (Digital Literacy)							
	Social Media Engagement							
1	Our business actively uses social media platforms to engage with customers	22	45	-	80	98	2.24	Reject
2	We actively monitor and respond to comments and messages on our social media pages	12	30	-	102	101	1.97	Reject
3	Social media has helped us reach a wider audience and increase brand awareness	30	12	10	79	114	2.04	Reject
4	We use social media to interact with our customers and build relationships	40	76	-	60	69	2.83	Reject
5	We use social media analytics to track our performance and improve our strategies	10	19	7	109	100	1.90	Reject
	Dependent Variables (SME Performance)							
	Operational Efficiency							
1	We use digital tools to automate and streamline our business processes.	12	19	-	110	104	1.88	Reject
2	Social media usage can make us to save costs in advertising in traditional media.	105	72	23	25	20	3.89	Accept
3	With digital initiatives, we can undertake training that can enable us to save costs and make better use of our resources.	89	102	-	53	-	3.92	Accept
4	Cloud computing services can help us to improve data storage and access.	67	120	19	39	-	3.88	Accept
5	We can increase the awareness of customers about our product/services using social media.	129	101	3	12	-	4.42	Accept

Source: Field Survey, 2024

Table 3 indicates the distribution of responses for social media engagement and business operation efficiency of the respondents. The analysis is based on the mean of the individual questionnaire items,

with a benchmark of acceptance of 3 and above. For questions used in measuring social media engagement, the respondents rejected that they actively use social media platforms to engage with customers, with a mean of 2.24. A mean of 1.97 also shows that they rejected that they actively monitor and respond to comments and messages on social media pages. They also disagreed that social media has helped them reach a wider audience and increase brand awareness with a mean of 2.04. They also rejected that they use social media to interact with their customers as shown with a mean of 2.83 and also rejected that they build relationships and that they use social media analytics to track their performance and improve their strategies with a mean of 1.90.

For questionnaire items concerning operational efficiency, when the respondents were asked if they use digital tools to automate and streamline their business processes, a mean of 1.88 shows that they disagreed. However, a mean of 3.89 indicates that social media usage can make them save costs in advertising in traditional media. On the same line, they agreed as shown with a mean of 3.92 that with digital initiative, they can undertake training that can enable them to save cost and make better use of their resources. They also accepted that cloud computing services can help them to improve data storage and access with a mean of 3.88 and accepted with a mean of 4.41 that they can increase the awareness of customers about their product/services using social media.

Test of Hypothesis

There is a significant relationship existing between social media engagement and operational efficiency in SMEs in Southeast Nigeria, Anambra State.

Table 4: Regression Result for the hypothesis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	t	Sig.
1	.778[a]	.605	.604	2.957	372.545	19.301	.000[b]

a. Predictors: (Constant), Q5

Source: Field Survey, 2024

Table 4 shows details of the regression analysis result for the hypothesis which states that there is a significant relationship existing between social media engagement and operational efficiency in SMEs in Southeast Nigeria. From the table, it is shown that a positive relationship exists between the variables (social media engagement and operational efficiency) as revealed by R of .778. From the Table which shows that R-Square is .605, indicating that a 61% change in the dependent variable (operational efficiency) is explained by changes in the independent variables (social media engagement). From the Table, it is shown that the F statistics is 371.545, the t statistics is 19.301 and the p-value is < 0.01. This indicates that statistically, there is a significant relationship between social media engagement and operational efficiency as the p-value is lesser than the level of significance used (p-value < .05).

Conclusions

The findings of this study clearly show that digital literacy has a significant impact on SME performance in Southeast Nigeria. However, cyber security awareness and social media engagement are crucial elements of digital literacy that directly impact how SMEs respond to the fast-changing digital world. SMEs that are aware of cyber threats and have plans and policies in place against cyber-attacks will gain customer trust, and have a good reputation and free workflows. Additionally,

SMEs that use social media to interact with customers and track their performance have a wider audience, increased brand awareness and are more informed which gives them competitive advantage and operational efficiency. In conclusion, the results emphasize the need for SMEs, particularly in Southeast Nigeria to keep up with the rapid pace of technological change, invest in digital training for their employees and keep their information technology (IT) infrastructure updated. These digital skills will not only improve operational efficiency and productivity but will also create room to eliminate the digital divide.

Recommendations

The following are recommended by this study:

i. Business owners/managers in Southeast Nigeria should prioritize the need to overcome digital challenges by taking measures such as: hiring potential employees with digital skills, engaging the employees and management in digital training regularly and providing the necessary digital tools in order to stay ahead of the dynamic business environment.

ii. Business owners/managers should use stronger security measures such as 2-factor authentication, encrypted storage data, encrypted communications, intrusion detection, bandwidth management and staff security training. They should also have tools and processes in place to assess cyber security risks by are exposed to.

iii. Business owners/managers should invest in building stronger customer relationships through social media platforms which can be managed through consistent customer follow-ups as well as engagements via social marketing platforms and also use its analytics to track performance and improve their strategies.

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