

# The role of digital literacy in corporate digital communication and SMEs' performance<sup>1</sup>

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## **Abstract**

Online communication devices should be used effectively to ensure that small and medium enterprises (SMEs) are able to optimize their operations, create relationship with customers and attain sustainable growth. This paper discusses how corporate digital communication (CDC) influences the performance of SMEs based on technological adoption, the presence of social media, and customer engagement as the determinants of SME performance. The sample population in this study included 73,081 SMEs registered with the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN). The hypotheses were tested and the measurement and structural models were evaluated using Structural Equation Modelling- Analysis of Moment Structures (SEM-AMOS). The results indicate that there are strong positive correlations among

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technological adoption, presence of social media, customer engagement and SME performance. The research also established the fact that digital literacy mediates such associations where low digital literacy undermines the effects of corporate digital communication on SME performance. The research offers a solid empirical data, which supports the assumption that the implementation of digital tools in the absence of investing in digital literacy can prevent the potential benefits on SMEs. Therefore, policymakers and business development agencies are advised to focus more on digital upskilling programs, so that SMEs can be better placed to operate within the digital economy.

## **Keywords**

Digital communication, digital literacy, technological adoption, social media, SME.

## **Introduction**

Digital technology has become an integral part of our lives (Sums kaya, & Solomeina, 2022), and it is equally transforming the level at which businesses are conducted and interacting with potential and actual clients. This is more so the case with small and medium enterprises, or SMEs (Siregar et al., 2023). Businesses have been moving toward the digital form of communication to empower their operations, cater to a wider audience, and retain their clientele (Nirmalasari et al., 2022; Nasidi et al., 2024). Although digital tools can be useful in business, most businesses are not fully aware of their impact on the success of the SMEs. This can be linked to the digital literacy or how well people can utilize online communication and technology. Unless the owner of a single business or even a group is aware of how to effectively use digital tools, it may be a disadvantage in this competitive world. The reality is that digital tools are not magic fixes. It is not all about having the tools but also about understanding how to use them. As the world is moving towards digitization, digital tools are becoming an integral part of our lives, signaling the need to understand technology and digital tools as key to success (Parviainen et al., 2017; Muschert, & Shomotova, 2025).

Digital communication in business is all about using online tools to share information and connect with potential customers (Sashi, 2021). It is essential for building mutual relationships and keeping people engaged. Businesses using the right digital tools can make their work simple. Using digital tools helps companies save money and customers better (Marion, & Fixson, 2021). Social media are relatively cheap, allowing businesses to make their products

visible and to communicate with customers directly (Malesev, & Cherry, 2021). This helps in creating a loyal customer base: people start recognizing the brand and feeling more connected. Digital communication tools make it easier for companies to keep in touch with customers (Ingrassia et al., 2022). Customers' satisfaction and trust grow when they feel involved, leading to brand loyalty.

Digital communication has many benefits, but an important factor is how well SME owners and their employees deal with technology and understand the opportunities those can provide. Digital literacy is paramount to SMEs; when business owners know how to use digital tools effectively, the chances of success are very high. Companies or business owners who fail to use such tools, especially social media, could miss a significant chance to relate to customers and promote their products or services. Also, it is tough for business owners to make the most of technology without digital literacy. This can lead to a weak social media presence and customer engagement. If companies are not engaging with customers, they will not likely benefit from good digital communication. This study investigates how corporate digital communication affects SMEs' performance by examining the interactions among technology adoption, social media presence, and customer engagement, paying attention to the moderating role of digital literacy in this process.

## **Literature review**

### ***Corporate digital communication***

Corporate digital communication incorporates the strategic use of digital platforms (Brockhaus et al., 2023) to engage with customers, investors, employees and the general public. Corporate digital communication has become omnipresent with the rise of the internet, social media, and mobile technologies, which have changed how business organizations communicate (Paul et al., 2024). Compared with traditional methods like print or broadcast media, digital communication allows for live interaction, broad reach, borderless communication and personalized messaging (Istijanto, & Purusottama, 2023), nurturing deeper connections with stakeholders. Digital communication allows organizations to disseminate information quickly, immediately respond to feedback and tailor messages or content to specific audiences (Gaysynsky et al., 2022), enhancing engagement and trust. The key approaches to corporate digital communication are integrated communication, which is a certification of consistency in several digital channels, and content marketing, which entails the creation and dissemination of valuable and relevant content to appeal and retain audiences (Capriotti et al., 2021).

### ***Technological adoption and SME performance***

Technological adoption involves the incorporation of digital communication tools, platforms, and processes in the business processes to improve efficiency, productivity, and competitiveness. The connection between technological adoption and SME performance has been studied by researchers. It was shown that digital transformation has positive effects on the performance of SMEs by assisting in making the right decisions and engaging with customers. Gamage et al.'s (2020) study has emphasized that SMEs in developing countries have difficulties locating technology that is affordable. Eliyana et al. (2024) argue that technological adaptation is vital in improving SMEs performance. The research indicates that SMEs with digital platform capabilities are achieving better outcomes. Ashiru et al. (2023) revealed that SMEs that adopted digital communication tools during the pandemic were better able to adapt to disruptions and possibly maintain business continuity. Ardito et al. (2021) found that SMEs leveraging digital innovation reported higher environmental and financial performance rates. Fu et al. (2024), highlight that technological adoption, especially social media marketing, improves SME performance. Kurniasari et al. (2023) indicate that technological adoption enhances the performance of SMEs in traditional markets. The study argued that social influence positively impacts SMEs' digital adoption; their performance improves as SMEs embrace digital technologies. Other studies, like Bag et al. (2023), Prasanna et al. (2019), Kumar et al. (2021), Nasrollahi et al. (2021) established the relationship between technological adaptation and SMEs' performance. Therefore, based on the reviewed literature, the following hypothesis is formulated:

*H<sub>1</sub>: There is a positive relationship between technological adoption and SMEs' performance.*

### ***Social media presence and SME performance***

Social media is an effective tool of SMEs to increase their visibility, interact with customers, and promote their performance. Studies reveal that the use of social media can possibly improve the performance of SMEs. Platforms such as Facebook<sup>3</sup>, WhatsApp, X, TikTok and Instagram<sup>4</sup> can be used to market SME's product and services. According to a study conducted by Al Halbusi et al. (2024) SMEs that actively use the media received more customer attention and brand recognition, which consequently boosts their sales. Social media allows for communication between the organizations and the customers in a direct

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<sup>3</sup> Belong to Meta company, banned at the territory of the Russian Federation.

<sup>4</sup> Ibid.

manner which builds stronger relationships. Kamboj and Kishor (2024) proved that SMEs that communicate with their customers via social media have an advantage of increased customer satisfaction. Ainin et al. (2015) found out that SMEs that were regular in their use of social media experienced higher growth in profits as compared to those that had no or minimal presence in social media. The social media proved to be effective when SMEs were faced with crisis such as the COVID-19 pandemic. A study by Eggers et al. (2017) emphasized that SMEs that communicated with their clients via social media in the face of the pandemic had an advantage to sustain trust and continuing business. Thus, based on the reviewed literature, the following hypothesis is formulated:

*H<sub>2</sub>: There is a positive relationship between social media presence and SMEs' performance.*

### ***Customer engagement and SME performance***

Customer loyalty, contentment, and overall business success may all be greatly impacted by a company's interactions and connections with its customers, which are referred to as customer engagement. Since it may lead to competitive advantage, word-of-mouth recommendations, and repeat business, cultivating great customer interaction is especially important for SMEs. Engaging customers are more likely to remain loyal to products or services and possibly repeat purchases. Iyelolu et al. (2024) revealed that SMEs with high customer engagement reported improved customer retention rates. Social media, websites, and mobile applications are examples of digital platforms that have become vital tools for SMEs to interact with their customers. Hollebeek et al. (2022) confirmed that SMEs using digital channels for customer engagement experienced higher customer satisfaction and brand advocacy levels. Kedi et al. (2024) emphasized that SMEs that participated in personalized marketing and customer service saw significant improvements in customer satisfaction and overall performance. Engaged customers are more likely to recommend a business to others, which is likely to lead to organic growth. Iyelolu et al. (2024) found that SMEs with strong customer engagement strategies benefited from increased word-of-mouth referrals and positive online reviews. Thus, based on the reviewed literature, the following hypothesis is formulated:

*H<sub>3</sub>: There is a positive relationship between customer engagement and SMEs' performance.*

### ***Moderating role of digital literacy***

In this study, digital literacy refers to the knowledge and skill levels of SME owners, managers, or key staff responsible for digital communication

and decision-making within the enterprise. These actors are crucial in determining how technology is adopted, how social media is managed, and how customer engagement strategies are implemented. The capacity to utilize digital technologies critically and effectively is known as digital literacy, and it is essential to how SMEs use technology, interact with clients, use social media, and succeed in the end. Digital literacy is a crucial moderating element that affects the effectiveness of these programs as SMEs depend more and more on digital tools and platforms. Digital literacy improves the association between technology adoption, social media presence, customer interaction, and SME success. Zahoor et al. (2023) found that digital literacy moderates the relationship between technology adoption and SME performance. In this vein, digitally literate SMEs more effectively utilized advanced communication tools.

SMEs with high digital literacy levels are more likely to create impactful social media campaigns and analyze engagement metrics. Digital literacy enhances the ability of SMEs to use customer data effectively, tailor communications, and build stronger relationships, leading to improved customer satisfaction and loyalty (Dairobi, & Anisah, 2024). Digital literacy acts as a substance for improving SME performance by enabling effective use of technology, social media, and customer engagement strategies. Thus, based on the reviewed literature, the following hypotheses were formulated:

*H<sub>4a</sub>: The digital literacy of SME owners positively moderates the relationship between technological adoption and SME performance.*

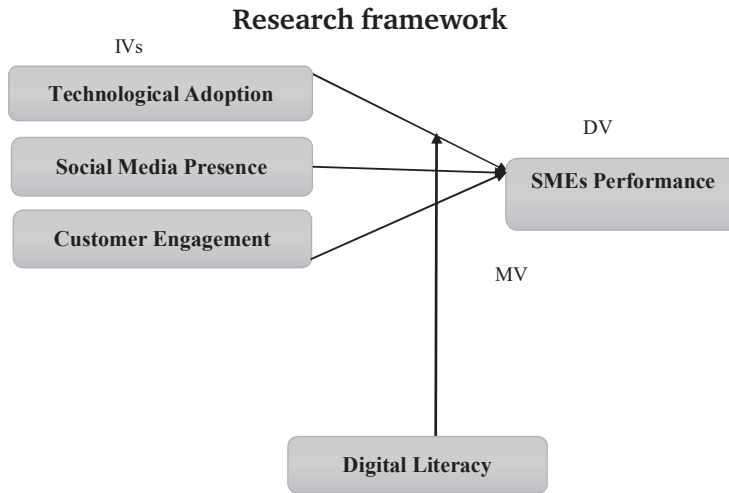
*H<sub>4b</sub>: The digital literacy of SME owners positively moderates the relationship between social media presence and SME performance.*

*H<sub>4c</sub>: The digital literacy of SME owners positively moderates the relationship between customer engagement and SME performance.*

## **Research framework**

The relationship between independent variables (IVs), dependent variable (DV), and moderating variables (MV) are depicted in the research framework for this study (see *Figure 1*). The framework is intended to investigate how corporate digital communication affects the performance of SMEs and the moderating role of digital literacy.

Figure 1



## Methodology

This study adopted a quantitative survey, and a questionnaire was used for data collection. The target population for this study consist of 73,081 SMEs registered with the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN). A simple random sampling (SRS) technique was used to ensure equal representation and reduce selection bias among SMEs across different industries. The study used Krejcie and Morgan's (1970) sample size table, which is widely used in management and social sciences research. Based on the table formula, a population of 73,081 requires 382. To accommodate non-response and errors, the sample size was increased to 400. The survey achieved a response rate of 78%, resulting in 312 valid responses used for analysis. The questionnaire was adapted from previous studies to suit this study. The data were analyzed using SEM-AMOS to examine Confirmatory Factor Analysis (CFA) and Structural Model testing. SEM is preferred in management and social science research because it can simultaneously model complex relationships between multiple constructs and test hypotheses (Awan, 2022). This study assessed multiple latent constructs, i.e. technological adoption, social media presence, customer engagement, and SME performance, and their interrelationships concurrently. Additionally, we examined the moderating role of digital literacy. SEM-AMOS allowed for the simultaneous evaluation of measurement and structural models, ensured construct validity and reliability, and enabled a clearer understanding of the total and indirect effects. Although

simpler statistical methods (e.g., multiple regression) could examine isolated paths, they would not sufficiently capture the complexity of the integrated model or test moderation using multi-group analysis as efficiently.

### Reliability and validity test

The reliability and validity test results, as presented in *Table 1*, assess the reliability, convergent validity, and discriminant validity of the constructs in the measurement model. Construct reliability (CR) values indicate strong internal consistency, with all constructs exceeding the recommended threshold of 0.70 (Hair et al., 2010). The average variance extracted (AVE) values further confirm convergent validity, as all constructs exceed the minimum threshold of 0.50 (Hair et al., 2006, 2011). SME performance (0.561), technology adoption (0.592), social media presence (0.543), and customer engagement (0.509) indicate that their respective latent constructs explain the majority of variance in the observed indicators. Discriminant validity is assessed, which requires the square root of each construct's AVE to be greater than its correlations with other constructs. The square roots of AVE for SME performance (0.749), technology adoption (0.770), social media presence (0.737), and customer engagement (0.713) exceed their corresponding inter-construct correlations. This confirms that each construct is distinct from the others, demonstrating that the model measures separate but related dimensions.

*Table 1*

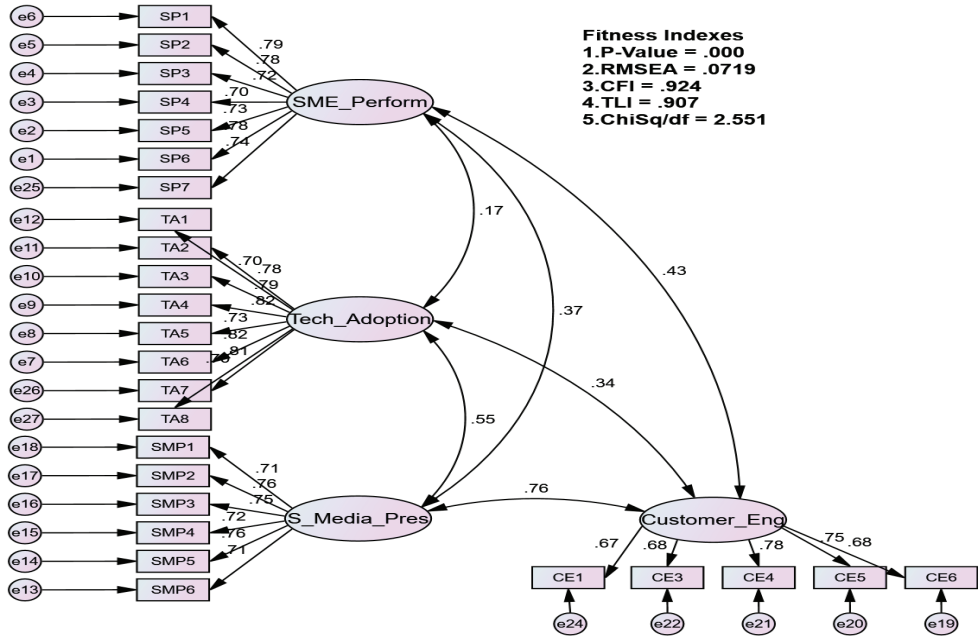
Validity test						
	CR	AVE	SP	TA	SP	CE
SME_Performance	0.899	0.561	0.749			
Tech_Adoption	0.921	0.592	0.172	0.770		
S_Media_Pres	0.877	0.543	0.374	0.548	0.737	
Customer_Eng	0.838	0.509	0.431	0.345	0.622	0.713

### Results

*Figure 2* represents a Pooled Confirmatory Factor Analysis (CFA) model, which integrates multiple latent constructs within a single measurement framework to assess their validity and reliability. This approach is commonly used to confirm the measurement structure of the theoretical model by assessing factor loadings, model fit indices, and the relationships between constructs. Each latent construct in the model is represented as an oval, while its observed variables are depicted as rectangles.

Figure 2

Pooled CFA



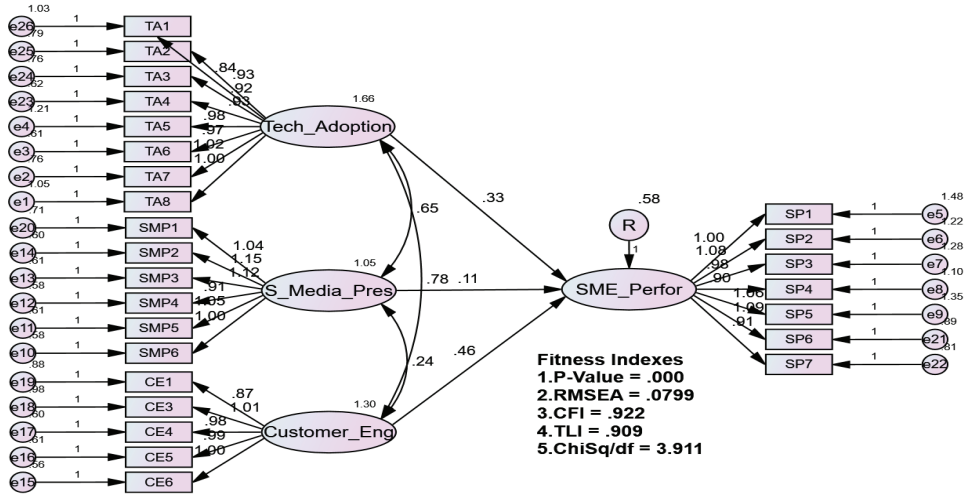
**Structural model analysis**

This structural equation model (SEM) represents the relationships between multiple latent variables, including technology adoption (TA), social media presence (SMP), customer engagement (CE), and SME performance (SP). The diagram shows factor loadings, path coefficients, and model fitness indexes. Multiple observed variables measure each latent variable. Technology adoption is indicated by TA1 to TA8, social media presence by SMP1 to SMP6, customer engagement by CE1 to CE6, and SME performance by SP1 to SP7. The factor loadings, represented by values on the arrows from the latent variables to their indicators, suggest strong relationships, with most values exceeding 0.80, indicating a good measurement model as recommended by Cheung et al. (2024).

The structural paths prove the relationships among the latent constructs. Technology adoption has a direct effect on SME performance (0.33) and an indirect influence through social media presence (0.65) and customer engagement (0.24). Social media presence substantially directly affects SMEs' performance (0.78), while customer engagement has a moderate effect (0.46). These coefficients suggest that social media presence is the strongest predictor of SME performance among the three independent variables (see Figure 3).

Figure 3

Unstandardized SEM



The model fitness indexes suggest an acceptable model fit. The p-value is .000, which indicates statistical significance. The RMSEA value of 0.0799 is within the acceptable range, suggesting a reasonably close fit. The CFI is 0.922, above the 0.90 threshold, demonstrating a good fit. The TLI is 0.909, further supporting the model's adequacy. Lastly, the Chi-square/df ratio of 3.911 indicates a moderate model fit.

Hypotheses testing

The regression weights for each path analysis reported in the research hypotheses for the study are shown in Table 2. The path coefficient from technology adoption (TA) to SME performance is 0.330, with a standard error (S.E.) of 0.049 and a critical ratio (C.R.) of 6.735. The P-value ( $p < 0.001$ ) indicates a highly significant relationship, suggesting that technology adoption has a moderate but positive effect on SME performance. Equally, social media presence (SMP) shows a statistically significant impact on SME Performance, with a path coefficient of 0.110, S.E. of 0.026, and a C.R. of 4.231 ( $p = 0.05$ ). While social media presence contributes to SME performance, its effect size is relatively minor compared to other predictors. However, customer engagement (CE) emerges as the strongest predictor of SME performance, with a path coefficient of 0.457, S.E. of 0.055, and a C.R. of 8.319 ( $p < 0.001$ ). This highly significant relationship underscores the importance of customer engagement in driving business success.

Table 2

**Path coefficients**

Path	Estimate	S.E.	C.R.	P
SME_Performance ← Tech_Adoption	.330	0.049	6.735	***
SME_Performance ← Social_Media_Presence	.110	0.026	4.231	***
SME_Performance ← Customer_Engagement	.457	0.055	8.319	***

**Moderation analysis**

This research uses digital literacy (DL) as a categorical variable. A multi-group analysis was conducted to test the moderating effect and compare the study model. The data set for testing the moderating effect of digital literacy was divided into two: low digital literacy (group 1) and high digital literacy (group 2). Each category was constrained by a parameter (1), while the constrained and unconstrained model result was compared. If the difference in Chi-Square value between the constrained and unconstrained is greater than 3.84, the path is moderated (Awang, 2015). However, for moderation to exist, the difference in the Chi-Square degree of freedom (DF) must be 1 (Saeed et al., 2024).

The moderation analysis for high digital literacy in *Table 3* was significant across all three relationships. For the first hypothesis (TA → SME), the chi-square value for the constrained model is 1870.582 with 587 degrees of freedom, while the unconstrained model shows a chi-square value of 1865.703 with 586 degrees of freedom. The chi-square difference is 4.879 with a difference of 1 degree of freedom. Since this significant change indicates that digital literacy moderates the relationship between TA and SME. The hypothesis is supported. The second hypothesis (SMP → SME) has a larger difference, having the change of chi-square of 35.22 and the difference of 1 degrees of freedom. This is a notable moderating influence that indicates that high digital literacy is a highly influential determinant of the strength of the relationship between SMP and SME, which is in support of the hypothesis. In the same way, the difference in the chi-square in the third hypothesis (CE SME) is 32.887, again with a 1 degree of freedom, with this difference being significant. This finding proves the hypothesis formulated as in the presence of high digital literacy, there is a moderating influence between the relationships between CE and SME.

Table 3

Moderation test for high digital literacy group data

Hypotheses	Chi-Square (Constrained model)	DF	Chi-Square (Unconstrained model)	DF	Difference in Chi-Square	Difference in DF	Result on moderation	Result on hypotheses
TA -- > SME	1870.582	587	1865.703	586	4.879	1	Significant	Supported
SMP -- > SME	1900.923	587	1865.703	586	35.22	1	Significant	Supported
CE -- > SME	1898.590	587	1865.703	586	32.887	1	Significant	Supported

The result of the moderation regarding the low digital literacy group is provided in Table 4, and it indicates a different trend. In the first hypothesis (TA – SME), the chi-square difference is only 0.057 with a difference of 1 degree of freedom which is insignificant, that means that digital literacy does not moderate this relationship. In this way, the hypothesis is not confirmed. In the case of the second hypothesis (SMP→SME), the difference in chi-square is 0.525, and the degree of freedom is 1, which is not significant either. The results of this finding imply that the association between SMP and SME is not affected in the high digital literacy setting, hence the hypothesis was not proven. However, the third hypothesis (CE →SME) has a significant chi-square difference of 5.787 at 1 degree of freedom. Such a drastic moderation effect implies that even in individuals who are not highly digitally literate, CE still has a strong impact on SMEs, which supports the hypothesis developed.

Table 4

Moderation test for low digital literacy group data

Hypotheses	Chi-Square (Constrained model)	DF	Chi-Square (Unconstrained model)	DF	Difference in Chi-Square	Difference in DF	Result on moderation	Result on hypotheses
TA -- > SME	1898.647	588	1898.590	587	0.057	1	Insignificant	Not Supported
SMP -- > SME	1899.115	588	1898.590	587	0.525	1	Insignificant	Not Supported
CE -- > SME	1904.377	588	1898.590	587	5.787	1	Significant	Supported

## **Conclusion**

The paper concludes that corporate digital communication improves the performance of SMEs. One of the pillars is technological adoption which helps SMEs to make operations easier, efficient and competitive in an ever-digitalizing marketplace. Secondly, the research sheds light on the significance of having a strong social media profile, which supports the presence of the brand in the market, communication with customers, and reaching the broader market. By means of well-planned content marketing, the timely customer service, the campaigns premised on engagement, SMEs can create better relations with the audience, which instills trust and loyalty. Thirdly, the importance of customer engagement as a major driver of performance improvement is mentioned. By utilizing digital communication tools, such as customized email marketing, interactive websites, and responsive social media messages, the SMEs can develop a more personalized and pleasing customer experience. One of the most important results of the study is the moderating role of digital literacy. The study demonstrates that companies where digital competencies are more robust tend to optimize the advantages of these communication strategies. By investing in the development of digital skills in their employees, SMEs can better leverage new technologies, evolve in line with emerging digital trends, and adopt new marketing strategies. Consequently, these digitally literate enterprises are faster, more resilient, and capable of achieving long-term growth.

Lastly, the paper adds to the existing literature on SME digital transformation by providing empirical evidence on the impact of corporate-level digital communication plans that are moderated by digital literacy on SME performance in a developing country setting. Moreover, the paper fills in a gap in non-Western academic literature by analyzing Nigerian SMEs, presenting new information in underrepresented areas in the study of global digitalization.

## **Limitations**

The limitation of this study could be the fact that it uses more complex statistical modelling models like SEM-AMOS, which may be too complex with the hypotheses being tested. Whereas, we think that SSM was justified in this case due to the latent variables, moderation analysis, and the combined character of the model, the future research can be able to reproduce these results through simpler statistical models to make them more accessible and comparable. In addition, the cross-sectional design does not allow us to determine the relationship between variables. The research on the pre-registration of SMEs only in Nigeria by SMEDAN, can be a limitation of the generalization of the

results to other areas or unregistered SMEs. Once more, there can be social desirability bias when using self-reported questionnaires. Nonetheless, these drawbacks are alleviated by methodological rigueur, which comprises random sampling, high response rate, and verified measuring tools. These limitations do not play a big role in undermining the validity of the main findings, which are in line with the theoretical expectations and the empirical literature.

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