FACTORS ENHANCING INNOVATION PERFORMANCE OF MICROFINANCE BANKS IN NIGERIA: A COVID-19 PERIOD STUDY

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Abstract

The COVID-19 crisis may have a far-reaching impact on the performance of microfinance banks [MFBs], given the opportunities and threats it presents. One of the ways organisations can improve and maintain performance is through innovation, but the factors promoting innovation during a period of crisis are yet to be fully explored and understood in a MFB setting. The study aimed to examine the antecedents of innovation performance at MFBs in Nigeria during the COVID-19 crisis. To carry out this examination, data were collected from 133 top managers of MFBs operating in southern Nigeria and subjected to the two-step procedure for structural equation modelling using the partial least squares [PLS] analytical technique. The PLS results revealed that digital transformation, environmental scanning, strategic alliances, and safety culture positively and significantly enhanced the innovation performance of MFBs. The study recommended that MFBs should deploy a mix of strategies, as there is no one-way, standalone, or best solution to enhance innovation performance in a crisis situation of this nature. However, managerial consideration should be given to the identified antecedents, given their significance for furthering innovation activities in MFBs.

Keywords: COVID-19, Digital Transformation, Environmental Scanning, Strategic Alliance, Safety Culture, Innovation

1.   INTRODUCTION

The spread of the coronavirus (COVID-19), which started in the Wuhan province of China, was rapid and catastrophic, causing a global health crisis within a short time. Following its emergence in Nigeria, the Nigerian government adopted several mitigation measures to flatten the COVID-19 curve, but without a critical review of their economic implications. Research points out that the economic consequences of pandemic-related restrictions would be adverse and profound because of the sudden disruption of socio-economic activities (Oleribe, Ezechi, Osita-Oleribe, Olawepo, Musa, Omoluabi, Fertleman, Salako, & Taylor-Robinson, 2020; Onuka, 2021). The uncertainty of the duration of the pandemic and the scale of the mitigation measures may amplify the vulnerabilities of a deteriorating economy (Oleribe *et al*., 2020). The gains made in poverty reduction and economic empowerment over the years may be eroded following the disruptive change stemming from COVID-19.

One of the most effective tools for poverty reduction and economic empowerment is microfinance (Kamel, Younsi, & Landolsi, 2022), which is facilitated through microfinance banks [MFBs]. According to the Central Bank of Nigeria [CBN] (2020:5), MFBs are "expected to provide access to financial services such as micro-savings, micro-credits, transfer services, and other financial products targeted at the economically active poor." However, achieving this goal in the face of poor economic conditions is harder and more challenging than usual. This difficulty in goal attainment is amplified by pandemic-related uncertainties and challenges (Onuka, 2021). MFBs render services to the most vulnerable population segment, with many individuals who were not in this category being pushed into this segment due to resource depletion and constraints from the COVID-19 restriction on socio-economic activities. The financial contraction under conditions of minimal economic activity would have significant performance implications for MFBs, with many experiencing reduced loan portfolios, high credit risk, liquidity problems, and stringent regulatory directives on loan rescheduling and moratorium (Czura, Englmaier, Ho, & Spantig, 2022; Ibrahim, 2022; Yeboah, Antoh, & Kumi, 2021). Though these challenges persist, MFBs are also adjusting in different ways to overcome this daunting situation. MFBs are confronted with the issue of devising practical solutions to survive and grow amid the COVID-19 crisis (Sudjatmoko, Mohammad, Marcella, Mariani, & Angeline, 2023). This is accomplished through innovation, which is the intentional transformation of ideas into practical opportunities for problem-solving. Innovation is important because conventional models, approaches, and practices may be less effective in dealing with unprecedented changes in the business environment (Sharma, Shin, Santa-Maria, & Nicolau, 2021). The extent to which MFBs perform innovation denotes innovation performance.

Studies observed that many organisations accelerated and reinforced innovative work given the crisis's novelty, criticality, and disruptiveness (Amankwah-Amoah, 2021; YahiaMarzouk & Jin, 2022). This seems to suggest that the crisis did not only present a challenge to management but also presented an opportunity to innovate. However, there is still limited research on the opportunities provided by the crisis for businesses (Amankwah-Amoah, 2021). There are

certain contextual factors that hold the potential to improve innovation performance under such conditions. Guided by literature, the contextual factors of digital transformation (Pavloy & El Sawy, 2010), environmental scanning (Blaique, Abu-Salim, Asad Mir, & Omahony, 2024), strategic alliance (Islam, Hossain, & Mia, 2018), and safety culture (Aboramadam, Albashiti, Alharazin, & Zaidoune, 2019) were considered central to this study. This is connected to their close link to organisational resilience, competitiveness, and sustainability in highly volatile environments. Innovation forms the springboard for the attainment of these desirable outcomes (Gopalakrishnan & Kovoor-Misra, 2021). Innovation antecedents during the pandemic merit examination, given that the findings hold the potential to shape innovation strategy, practice, and performance in resource-constrained environments. The relative contributions of contextual factors to innovation performance during the pandemic are important empirical issues and remain unexplored in a MFB setting (Gopalakrishnan & Kovoor-Misra, 2021; Kumar *et al.*, 2022; Sudjatmoko *et al.*, 2023). Additionally, not all innovation antecedents may prove effective in furthering innovation in a crisis context, which makes it necessary to identify factors that can enhance the organisational capability to incorporate changes aligned with the imperatives of the COVID-19 crisis. Onuka (2021) observed that ample studies exist on the coronavirus pandemic effects on MFB in developed and developing countries, but there is still a paucity of research drawn from the Nigerian experience. Even so, little is known about the enabling factors of innovation performance in MFBs, as research has mainly focused on their financial and social performance. To fill this gap, this research was undertaken to enhance our understanding accordingly.

This study is significant because the innovation performance of MFBs has a direct impact on wealth creation, poverty reduction, and economic empowerment (Akingunola, Olowofela, & Yunusa, 2018), which makes it necessary to examine the probable links to inform decision-making at the organisational and national level. The work of MFBs is more important than ever before, as the pandemic exacerbated existing social problems such as hunger and unemployment, which have existed for decades (Weaver, 2020). Because a crisis of this nature is likely to occur in the future, understanding how innovation results and outcomes can be improved or maintained during a similar crisis is imperative. Therefore, the objective of this study is to find out the main effects of digital transformation, environmental scanning, strategic alliances, and safety culture on the innovation performance of MFBs.

2.   Literature Review

Innovation Performance

Innovation performance is the extent to which useful ideas are successfully transformed into practical solutions that create more value and meet new needs (Ononye, 2022). It is closely related to efforts to adapt or update organisational strategy, services, processes, and practices to reflect changes in the environment (Sudjatmoko *et al.*, 2023). Lim (2022) posits that the unprecedented changes brought by COVID-19 to the business environment have led to a new normal, thereby necessitating the reevaluation of organisational activities to induce changes for organisational survival and success. Given this, there is a pressing need to devise new ways of

doing things to lessen the disruptive impact of COVID-19 on organisational activities (Gopalakrishnan & Kovoor-Misra, 2021). Arguably, environmental uncertainties, rooted in the disruptive change of COVID-19, create indeterminate opportunities for superior performance through the introduction of novelty (Freel, 2005). Sudjatmoko *et al*. (2023) found that innovation reduced the impact of COVID-19 on organisational performance. It is plausible to infer that, under pandemic conditions, innovation efforts should be spurred to enable the attainment of stable business results. The negative effect of COVID-19 on organisational performance has been extensively researched and documented across different economic sectors (YahiaMarzouk & Jin, 2022). The study believes there are performance aspects or parameters that may not be negatively affected. One of which is innovation performance. This notion is predicated on the suggestion of Gopalakrishnan and Kovoor-Misra (2021) and Sudjatmoko *et al*. (2023) that one way to survive and grow in a crisis situation is through innovation. The reconfiguration or adaptation of existing models, approaches, and practices is presumed to have significant performance implications for organisations. The next stream of sub-headings would be on possible innovation antecedents, as guided by existing literature.

Digital Transformation

Digital transformation, understood as the use of a combination of computing, communication, connectivity, and information technologies to change business models and operations for the creation of more value and benefits (Do, Ha An Thi Pham, Eleftherios, & Hoang, 2022), has taken centre stage in the era of technological advancements. Nguyen-Thi-Huong, Nguyen-Phuong, and Van Nguyen (2023) mention that technological advancement has been changing productive sectors around the globe, and the pandemic situation has contributed to the acceleration of this process. The mitigation measures of COVID-19 led to significant changes in interaction among people and businesses. Because of the limited offline contact among people and businesses, communications and transactions have shifted online. The relevance of digital transformation in furthering innovation may be connected to the restriction of offline contacts for socio-economic transactions. Theiri and Hadoussa (2024) found that banks that provide digital services perform better because they are able to redesign internal processes and existing methods to support stable business operations in unpredictable, uncertain, and challenging contexts. However, the digital penetration in the microfinance sector in Nigeria is low, as many still use the traditional business model of delivering financial services and support to clients (Adebiyi, Olusegun, & Yakubu, 2022). According to Ibramhim (2022), the coronavirus crisis has exposed the fragilities of MFBs and the manner in which they operate. A shift to digital platforms and mobile services is necessary to improve access to financial services and support, which in turn ensures microfinance sustainability. Pavloy and El Sawy (2010) argued that firms with a strong technology-enabled competitive advantage can enhance their improvisation capabilities, i.e., the ability to adapt existing resources to develop new capabilities to manage urgent, unpredictable, and novel environmental contexts. Given this, the following hypothesis was put forward:

H1: Digital transformation can significantly enhance innovation performance.

Environmental Scanning

"Environmental scanning acts as a radar for identifying environmental signals and helps with developing compatible strategies to direct the organization in an adaptable way" (Pourmohammadi, Bastani, Shojaei, Hatam, & Salehi, 2020:1). The business environment is changing at an unprecedented rate due to COVID-19, and. the routine observation of environmental factors provides useful insights for management to develop a range of possible strategic responses that can induce organisational change (YahiaMarzouk & Jin, 2022). Arguably, MFBs operating with low scanning capabilities, especially during the COVID-19 era, will find themselves unable to navigate forces that were detectable for some time but that were ignored. Ultimately, this impacts their innovation capabilities (Aldehayyat, 2015; Fadzli & Zamberi, 2013; Nikoyi *et al*., 2022). Ononye and Igwe (2017) mention that organisational survival and performance require firms to observe and comprehend the shifting character of the environment, the interconnectedness among the environmental factors, and the salient role of knowledge in reconfiguring competences, processes, or practices to the changing environment. Environmental scanning is a strategic foresight approach whose goal is to provide relevant environmental information for uncertainty reduction in the decision-making process. It stimulates learning and fosters opportunity exploration and exploitation (Moqaddamerad & Ali, 2024). Pourmohammadi *et al*. (2020) acknowledge that rapid and disruptive changes in the external environment increase the need for scanning in organisations. As a matter of fact, it has been shown to support innovation capabilities (Blaique *et al*., 2024; YahiaMarzouk & Jin, 2022; 2023). Therefore, it is plausible to infer that the environmental scanning capabilities would improve innovation performance during the crisis. This led to the formulation of the second hypothesis, which is as follows:

H2: Environmental scanning can significantly enhance innovation performance.

Strategic Alliances

Strategic alliances represent cooperative arrangements or collaborative relationships between organisations for the reciprocal share of strategic resources for performance improvement and organisational development. It provides opportunities for organisations to find new ways to access, obtain, and exploit knowledge, competencies, and skills necessary for problem solving (Drewniak & Karaszewski, 2020). The resources of an organisation are often not enough for stable and enhanced operations in turbulent environments. Given this, organisations need to access and obtain unique and complementary resources that span their organisational boundaries. The integration of new and additional resources can increase organisational capacity to induce change and stimulate innovation processes (Ferreira, Coelho, & Moutinho, 2021; Ononye, 2021). Drawing from the dynamic capability theory, strategic alliances develop capabilities and competencies that enable adaptation to a crisis situation. This is because it fosters an open innovation paradigm that taps into the strengths of collaborating organisations (Srisathan, Ketkaew, Jitjak, Ngiwphrom, & Naruetharadhol, 2022).

Gaglio, Kraemer-Mbula, & Lorenz (2022) stressed that though organisations may leverage strategic alliances for innovation, their ability to transform external resources into superior

performance is contingent on resource complementarity. For example, Adebiyi *et al*. (2022:63) suggested that "MFBs can take advantage of what Fintech offers by providing Fintech needs, such as its customer base. This partnership could help the MFBs leap from traditional business models to digital ones. MFBs still enjoy the underwriting capabilities that help them ensure repayments from their customers using peer pressure, personal contacts, and continued access to credit. The Fintech companies lacked these motivational aspects of loan repayments, leading to high default rates." Nwokocha, Anyanwu, Madu, & Nwankwo (2021) argued that the thrust for strategic alliance is the value creation potential of shared resources and also found that organisations in Nigeria, small-scale industries in particular, experienced an increase in their operations following the use of strategic alliance. Ferreira *et al*. (2021) found that strategic alliances positively and significantly impacted the innovation of small and medium enterprises in Portugal. Using American and Canadian firms listed in the Dunn and Bradstreet database, Islam *et al*. (2018) found that the strategic alliance and innovation relationship is positive but insignificant. This study was not conducted in a COVID-19 context; however, it is important to extend it to a crisis situation to confirm whether it may have applicable value. Given this, the following hypothesis was put forward:

H3: Strategic alliance can significantly improve innovation performance.

Safety Culture

Safety culture is an aspect of organisational culture that focuses on shared values, beliefs, attitudes, and behaviours in health and safety management. The COVID-19 crisis, which posed a major health issue for organisations, can be characterised as a safety concern because of the risk to employees' psychological state, health, and wellbeing. Such a high-risk event demands management continuously develop, adopt, and update safety standards to minimise the occurrence of safety-related problems and incidents. Without active learning, SC will not evolve and reach its full potential. This makes safety culture a learning culture. Learning cultures develop innovation capabilities (Tran, 2008). The incomplete information about COVID-19 implications stimulates learning to understand how to navigate the uncertainties and complexities of the crisis. Crisis accelerates change and innovation, but employees exposed to a variety of risks affecting safety may not focus and perform well in innovative activities. Arguably, the COVID-19 adverse effect on employee health can disrupt work progress and momentum (Harel, 2021).

Saleem, Malik, & Qureshi (2021) suggest that COVID-19-induced mental, psychological, and physical problems are preventable when management demonstrates commitment to employee safety by building a strong safety culture. As illustrated by the norms of reciprocity, employees tend to reciprocate by demonstrating extra-role behaviours, which has the potential to enhance different performance parameters. Employees learn and model behaviours from the actions of managers; this makes managerial commitment to safety central to the expression of safety culture in an organisation (Bisbey, Kilcullen, Thomas, Ottosen, Tsao, & Salas, 2021; Choudhry, Fang, & Mohamed, 2007). Management's support for safety can help to build trust, teamwork, and knowledge sharing and, in turn, foster innovative work behaviour among

employees (Ononye, 2023). Safety culture is an important concept in the world of organisations, but not much consensus has been reached on its antecedents, contents, and outcomes (Guldenmund, 2000). Since safety culture is a subculture of organisational culture, its link to innovation performance can be drawn from the close relationship between organisational culture and innovation (Aboramadam *et al.*, 2019; Martins & Terblanche, 2003). Given this, the fifth hypothesis was proposed:

H4: Safety culture can significantly improve innovation performance.

Theoretical Framework: Dynamic Capability Framework

The dynamic capability framework of Teece, Pisano, and Shuen (1997) is a commonly used framework for studying challenging and changing environments by providing a mechanism for developing, extending, and adapting existing capabilities. This framework provides a useful theoretical lens for examining MFBs' ability to respond to the disruptive changes caused by the pandemic. Given this, the study contends that sustainable performance and advantages are attained when MFBs continuously develop, extend, and adapt capabilities, resources, and solutions aligned with the imperatives of a changing and disruptive environment. Dynamic capabilities may be rooted in managerial decisions and strategic change that follows the current state of the environment (Kähkönen, Evangelista, Hallikas, Immonen, & Lintukangas, 2023). The main thrust of developing digital transformation, environmental scanning, strategic alliances, and safety culture is to enable MFBs to successfully evolve with changing times through value creation. These constructs provide unique capabilities that could prove useful for surviving through innovation in volatile and uncertain times.

3.   METHODOLOGY

The study adopted the survey design method to elicit information from top managers of MFBs through the administration of a questionnaire. The selection of top managers is reinforced by their active involvement in decisions about managing the attendant challenges and threats of the pandemic. In this line, they are also actively involved in innovation activities in their respective organisation. The total population of MFBs operating in southern (south-south) Nigeria is about 99 (Nigeria Deposit Insurance Corporation [NDIC], n.d.). The census approach was used in collecting data from the study's population. Invitations were sent out in a letter stating the research topic and objective, a declaration of confidentiality for responses, and the mode of questionnaire administration. The questionnaire was attached to this invitation. The researchers' also mentioned that responses should be informed and guided by available data during this period. 79 MFBs agreed to voluntary participation in the survey. The questionnaire administration and collection were done from July to November 2021. The study's questionnaire was administered electronically through Google Forms, with links shared via WhatsApp and email with participants. Reminders were sent out fortnightly to improve the response rates. Out of 158 links sent, a total of 133 responses were received and duly completed. The demographic profile of the respondents shows that 77 (58%) and 56 (42%)

were males and females, respectively. A greater number of the respondents were within the age bracket of 36–45 years (87), 23 were between 46 and 55 years, 12 were between 25 and 35 years, and 11 were above 55 years. The mean age of the respondents was 39.7 years. The minimum educational qualification was a bachelor's degree. The average tenure of employment was 13.5 years.

Table 1. Questionnaire Development

Construct	No. of Questions	Source
Digital transformation	5	Kontić and Vidicki (2018)
Environmental scanning	2	Moqaddamerad and Ali (2024)
Strategic alliance	4	Robson, Katsikeas, Schlegelmilch, & Pramböck, (2019)
Safety culture	4	Choudhry *et al.* (2007)
Innovation performance	4	Ononye and Igwe (2019)

The nineteen (19) measurement items in the questionnaire were placed on a five-point Likert scale of strongly disagree (1) to strongly agree (5). Find the measurement items attached in the appendix. The questionnaire was subjected to a pre-test to examine the appropriateness and simplicity of the languages used. The face validation was performed by two academics and three industry experts in the management field. The questionnaire was randomly administered to 12 participants, whose responses were excluded from the final sample to avoid data contamination. Modifications were made in tandem with comments from the pre-test. The questionnaire yielded good reliability (internal consistency) scores when tested for Cronbach's alpha for each construct (digital transformation $\alpha = 0.783$, environmental scanning $\alpha = 0.831$, strategic alliance $\alpha = 0.766$, safety culture $\alpha = 0.829$, and innovation performance $\alpha = 0.795$); SPSS 20.0 was used to perform this analysis.

The data were analysed with the two-step procedure for partial least squares structural equation modelling (PLS-SEM). The measurement was estimated to determine the reliability and validity of the measurement items and latent constructs. After which, the structural model was estimated to test the specified relationships among the latent constructs. The PLS-SEM is suitable for small samples and when there are no data assumptions (Hair, Hult, Ringe, & Sarstedt, 2017). The SmartPLS 3 software was used to perform the PLS-SEM procedure. According to Ononye (2023:959), "SmartPLS is a popular structural equation modelling software that explains the psychometric properties of the measurement model and estimates the parameters of the structural model simultaneously."

4.   RESULTS

A preliminary analysis was performed on the dataset to check whether it was factorable. The Kaiser-Meyer-Olkin [KMO] measure of sampling adequacy and Bartlett's test for sphericity were used for this determination. These initial tests were performed with SPSS 20.0. The KMO values (digital transformation = 0.611, environmental scanning = 0.605, strategic alliance $\alpha = 0.766$, safety culture = 0.682, and innovation performance = 0.659) were higher than the

acceptable value of 0.60, and the Bartlett's test for sphericity for all the latent constructs was significant at p < 0.05. Thus, the factorability of the dataset was confirmed for the application of the PLS-SEM procedure. In performing the PLS-SEM procedure, the rule of thumb in Hair et al. (2017) was followed for interpretation of results. The study proceeded to the first step, which is the estimation of the measurement model for the reliability and validity of the six latent constructs.

Table 2 showed the descriptive statistics of the latent constructs. It also summarised the measurement model results. The factor loadings [FL] of the measurement items of all the constructs exceeded the recommended score of 0.707, suggesting acceptable item reliability among the constructs was achieved. The composite reliability [CR] values, which confirmed construct validity among the constructs, were above the acceptable limit of 0.70. The average variance extracted [AVE] of each construct exceeded the recommended cut-off value of 0.50, which proves that convergent validity among the constructs was adequate. The variance inflation factor [VIF] values were below the cut-off value of 5.0, suggesting there were no multicollinearity issues among the constructs. In this line, Koch (2015) also recommended that VIF values below 3.3 show that common method bias does not present a challenge in the model and reliable statistical inferences can be drawn therefrom.

Table 2. Descriptive Statistics and Measurement Model Results

	Construct	Mean	Standard Deviation	Agreement level	FL Range > .707	CR > .70	AVE > .50	VIF
1	DT	3.779	0.931	High	0.755 - 0.799	0.730	0.563	1.397
2	ES	3.870	0.842	High	0.843 - 0.860	0.767	0.641	1.851
3	SA	3.810	0.927	High	0.731 - 0.784	0.719	0.595	1.067
4	SC	3.755	0.955	High	0.816 - 0.833	0.803	0.686	1.504
5	IP	3.951	0.802	High	0.789 - 0.819	0.778	0.607	

Note: DT: Digital tansformation; ES: Environmental scanning; SA: Strategic alliance;
    SC: Safety culture; IP: Innovation performance; CR: Composite reliability;
    AVE: Average variance extracted; VIF: Variance inflation factor

Table 3 presents the Fornell-Larcker criterion results. The results show that satisfactory discriminant validity was attained because the correlation of each construct exceeded the correlations among the constructs. This result also reinforces the construct validity of digital transformation, environmental scanning, strategic alliance, safety culture, and innovation performance. Having attained acceptable results in the selected quality criteria, the study proceeded to estimate the structural model for hypothesis testing.

Table 3. Fornell-Larcker criterion

	Construct	1	2	3	4	5
1	DT	0.750				
2	ES	0.179	0.801			
3	SA	0.344	0.217	0.771		
4	SC	0.238	0.041	0.111	0.828	
5	IP	0.161	0.107	0.088	0.139	0.779

Note: DT: Digital transformation; ES: Environmental scanning;
SA: Strategic alliance; SC: Safety culture; IP: Innovation performance

Table 4. Structural Model Estimation

H	Paths	β	$P < 0.05$	Remark
1	DT→ IP	0.213	0.000	Accepted
2	ES → IP	0.342	0.000	Accepted
3	SA → IP	0.295	0.000	Accepted
4	SC → IP	0.229	0.000	Accepted
	R^2	0.592		
	SRMR	0.071		
	NFI	0.894		

Note: DT: Digital transformation; ES: Environmental scanning;
SA: Strategic alliance; SC: Safety culture; IP: Innovation performance
SMSR: Standardised root mean square residual; NFI: Normed fit index

Table 4 shows the results of the structural model, which was assessed with the path coefficients [β] and *p*-value. While the β value demonstrated the nature of the relationship, the *p*-value indicated its significance. In further analysis, the predictive quality of the model was assessed with the coefficient of determination [R^2], and the model fit was assessed with the standardised root mean square residual [SMSR] and normed fit index [NFI].

H1 argues that digital transformation can significantly enhance innovation performance, and the PLS-SEM result ($\beta = 0.213$, $p = 0.000$) found this argument true. Thus, H1 was accepted. This result supports Theiri and Hadoussa (2024) and Pavloy and El Sawy (2010), who argued that digitalisation helps in reconfiguring organisational resources and capabilities to align with novel environmental contexts. Therefore, the finding suggests that digital transformation's improvement of internal organisational processes and capabilities can spur the innovation performance of MFBs significantly.

H2 argued that environmental scanning can significantly enhance innovation performance, which was also supported by the PLS-SEM result ($\beta = 0.342$, $p = 0.000$). Thus, H2 was confirmed. This finding concurs with the position of recent studies (Blaique et al., 2024; YahiaMarzouk & Jin, 2022; 2023). The finding suggests that improvements in environmental scanning capabilities are highly essential for MFBs looking to observe and understand the shifting nature of the business environment during a crisis situation. They need to be aware of the changing conditions as they emerge to realise the full benefits of innovation activities.

H3 proposed that strategic alliances can significantly improve innovation performance, and the PLS-SEM result ($\beta = 0.295$, $p = 0.000$) validated this proposition, which led to the acceptance of H3. This result affirms the position of Nwokocha et al. (2021) and Ferreira et al. (2021), who reported a positive and significant strategic alliance and innovation performance relationship in a crisis context. However, it contradicts the position of Islam et al. (2018), who documented a positive and insignificant relationship. The reason for this contradictory result can be linked to the study's context, COVID-19. The finding suggests that MFBs can form collaborative arrangements with the aim of accessing complementary external resources, which are otherwise lacking internally, to develop solutions to problems caused by the high level of disruptive change associated with the pandemic.

H4 contended that safety culture can significantly improve innovation performance, and the PLS-SEM result ($\beta = 0.229$, $p = 0.000$) proves this contention holds true. Thus, H4 was

supported. Although the probable link was drawn from organisational culture's positive and significant relationship with innovation (Aboramadam et al., 2019; Martins & Terblanche, 2003), the finding is relatively new to research. In this line, improvements in safety culture result in an increase in innovation performance during the pandemic. However, the finding suggests that a culture that supports employees' health and safety cultivates the right context that drives performance in innovation activities.

Regarding the predictive quality of the structural model, digital transformation, environmental scanning, strategic alliances, and safety culture moderately explained 59.2 percent of the variance in innovation performance. R^2 values below 0.75 and higher than 0.50 indicate moderate predictive power (Hair et al., 2017). The SMSR and NFI were within the recommended threshold for good model fit. SMSR (0.071) was less than 0.08, and NFI (0.894) was close to 1, demonstrating acceptable model fit (Kline, 2014).

5.   CONCLUSION

The study examined the antecedents of innovation performance in MFBs in Nigeria, drawing from the COVID-19 experience. The antecedents included digital transformation, environmental scanning, strategic alliances, and safety culture. In performing this examination, data were obtained from 133 top managers operating in MFBs in southern Nigeria and subjected to the PLS-SEM analytical procedure. The study found and concluded that digital transformation, environmental scanning, strategic alliances, and safety culture are significant strategic tools for enhancing the innovation performance of MFBs.

The study had both theoretical and practical implications. In theory, it could be argued that not all performance parameters were negatively impacted as COVID-19 presented opportunities for further innovation. The study also identified innovation performance antecedents in an under-explored organisation, MFBs, drawing from the Nigerian experience. Given that COVID-19 is a novel health crisis, little is known about its antecedents, content, and outcomes (Onuka, 2021). The study responds to this observation by demonstrating the influence of digital transformation, environmental scanning, strategic alliances, and safety culture, which are much discussed but less frequently investigated empirically, on innovation performance in a COVID-19 context.

In practice, MFBs should deploy a mix of strategies, as there is no one-way or best solution to enhancing innovation performance in a crisis context. However, they can build robust dynamic capabilities according to the changing environment. To this end, MFBs should incorporate digital technologies and solutions to maintain stable organisational functioning and foster adaptation to an environment characterized by restrictions on offline economic activities. For a novel health event, environmental scanning should be done regularly to gain important insights that can be used to navigate the emergent challenges through innovation. MFBs should select the right strategic partners to correct any resource deficit that would put them in a vulnerable position in the face of a crisis situation. It is also important that a culture fit is established to foster innovative thinking, behaviours, and actions during a period of a health crisis. The study focused on the COVID-19 context, but that is not the only reason for

organisations to innovate. Organisations must innovate to be adaptable to unforeseen and changing circumstances. This can lead to superior performance in both present and future situations. Therefore, the suggested courses of action should also help MFBs manage, survive, and recover from catastrophic events causing significant economic disruptions or changes in the business environment.

The limitation of the study is that it focused mainly on the direct effect of certain antecedents on innovation performance. The relationships among the variables and the intervening variables at play were overlooked in this study, which presents a research area for future studies. Furthermore, this study focused only on MFBs situated in southern Nigeria. Studies on the innovation performance of MFBs are still limited and need to be extended to improve the generality of the findings. This study used subjective measures; future research, particularly when determining innovation performance, should take objective measures into account.

Declaration of Conflicting Interests

The authors declared no conflicts of interest with respect to the research, authorship, and publication of this article.

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APPENDIX

MEASUREMENT ITEMS

DIGITAL TRANSFORMATION					
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
The integration of digital technology into operational activities is important to my organisation.					
My organisation is able to leverage digital solutions whenever possible.					
The core operational processes are automated and digitised.					
Employees have the competences necessary to conduct digital transformation.					
The digital policies and platforms have been scaled up for seamless financial services and support during the pandemic.					
INNOVATION					
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
There have been changes introduced by management to improve policies, services, processes, or practices in the past year (during the COVID-19 period).					
Services, processes, or policies that embody new ideas are quickly introduced to customers					
Services, processes, or policies are adapted from recent experiences.					
We develop our actions and decisions together with relevant stakeholders.					
KNOWLEDGE-ORIENTED LEADERSHIP					
Over the past few years, especially during the pandemic………….	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Managers have assumed the role of knowledge leaders, which is mainly characterized by openness, tolerance of mistakes, and mediation for the achievement of the firm's objectives.					
Leadership has been creating an environment for responsible behaviour and teamwork.					
Managers promote learning from experience, tolerating mistakes up to a certain point.					
Managers behave as advisers, and controls are just an assessment of the accomplishment of objectives.					
Managers promote the acquisition of external knowledge.					
Managers reward employees who share and apply their knowledge.					
ENVIRONMENTAL SCANNING					

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
In my firm, we engage in identifying key drivers of change that influence our organisation, especially during the COVID-19 period					
Our organisation analyses the environment from a long-term viewpoint					
SAFETY CULTURE					
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
In my firm, we demonstrate strong commitment to and support for safety management, especially during the COVID-19 period.					
Employees are actively encouraged to adhere to or comply with safety measures initiated by management.					
Employees' inputs regarding safety are taken into consideration.					
There are mechanisms in place meant to monitor, correct, review, and improve safety performance in my organisation					
STRATEGIC ALLIANCES					
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
In the past 3 years, we have formed collaborative arrangements with other firms for the sharing of complementary resources. (formulation capability)					
The collaborative arrangement(s) was useful to my organisation during the pandemic (management capability)					
The overall performance of the alliance is satisfactory. (management capability)					
We intend to broaden and/or deepen alliance relationships to obtain more value or benefits. (search capability)					