



The Effect of the Global Health Crisis on Organizational Marketing and Culture of Innovation

Farouk Umar Kofar Naisa¹ · Enjun Xia¹ · Abubakar Sadiq Ibrahim¹ · Adams Adeiza² · Abdul Gaffar Khan^{1,3}

Received: 6 May 2023 / Accepted: 27 October 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Abstract

The study examined how SME's particularly in emerging economies should choose and implement marketing innovation strategies based on external factors, internal advantages, and their own characteristics, enriching crisis management literature and providing new scenarios for research on marketing innovations, consumer behavior and patterns during and after the global crises. The survey included 217 SME's in Nigeria. The 'A' priori sample size calculator for structural equation models determines the sample size. Data was analyzed using PLS-SEM to appropriately estimate study latent construct relationships. The findings of the study indicated that the global health crisis has affected organizational innovation, consumption, and behavior. Due to technological adoption and complexity, market innovation methods have not been severely impacted by the epidemic. This study also examines how organizations might develop and execute pandemic strategies and concludes with a discussion of the theoretical and practical consequences that may guide future research. Using the global health crisis to understand shifts in the culture of innovation, consumer behaviors, and market innovation strategies in an organization to improve performance and ensure firm continuity, this study identified several business performance options, a suitable path to explore, and the impact of using it to retain market space in line with consumption patterns. This research examines how the global health crisis affects organizational cultures of innovation and performance. This is accomplished in light of the significance of SMEs' creative efforts in Nigeria in achieving the goals of idea-driven enterprises. Finally, the study recommended four marketing innovation strategies for SME's and organizations to choose from for crisis management and control in the pandemic and post pandemic crisis.

Keywords Global Health Crisis · Covid-19 · Market innovation · Culture of innovation · Technology sophistication · Disruptive innovation theory

Extended author information available on the last page of the article



Introduction

The global economy has slowed dramatically owing to the health crisis. Globally, this obstacle has slowed SME growth and commercial strategies (Rowan & Galanakis, 2020). The global health crisis caused by the COVID-19 pandemic has had a significant impact on businesses worldwide, including in Nigeria. The pandemic has disrupted supply chains, decreased consumer spending, and forced businesses to adapt to new ways of operating. One area that has been affected is organizational culture of innovation and marketing (Blaique et al., 2023). Organizational culture is a term used to describe a set of values that an organization has created and communicated through conventions and observed social behaviours. However, there are different definitions of what culture means due to a differences in perspective and researcher viewpoints (Kim & Chang, 2019). While culture of innovation is the organization's cultural framework that is compatible with cooperation and knowledge exchange as well as the creation of new thoughts (Aboramadan et al., 2020). Jogaratnam (2017) finds that supportive and innovative cultural types are significantly related to firm performance. As shown in the organisational literature, higher company performance is a result of having a "strong" corporate culture (Aboramadan et al., 2020; Schuldt & Gomes, 2020).

With consumer behavior changes, businesses have had to adjust their marketing strategies to meet changing needs. This has had an impact on the culture of innovation within organizations, as businesses seek to adapt to new challenges. Thus, recent occurrences should prompt SMEs and organizations in emerging economies and other countries to prepare for crises and pandemics. Nevertheless, insights from the experiences of various developed nations demonstrate their adeptness at managing challenges through proactive approaches. This research endeavors to fill the existing gap by concentrating on small and medium-sized enterprises (SMEs) and similar entities in emerging economies like Nigeria. The aim is to identify suitable marketing innovation strategies, determine their selection criteria, and outline methods for implementation. These efforts are geared towards enabling these organizations to effectively adapt to shifting customer consumption trends, ensuring their resilience and recovery in the face of the sudden onset of the COVID-19 pandemic. It is imperative to underline that the global health crisis has not only triggered immediate upheaval across numerous countries, providing the impetus for investigating survival strategies, but also underscores the need to prepare for unforeseeable, abrupt, and uncontrollable external factors, such as pandemics, that may arise in the future.

While some scholars perceive market innovation, or open innovation, as a proactive approach to crisis mitigation within firms and organizations (Wang et al., 2020; Naidoo, 2010), the attention directed towards research on organizational crisis management has been notable. However, the concept of market or open innovation has received less scrutiny as a potent avenue for crisis management, with the exception of Naidoo (2010) and Wang et al.'s (2020) work. Yet, these studies have not sufficiently elucidated the specific marketing innovation strategies and methodologies relevant during global crises, whether economic and financial in nature or health-related like the Covid-19 pandemic. Particularly during the Covid-19 pandemic and its aftermath, when there has been a discernible shift in consumer preferences and

purchasing behaviors (Hartwig & Dempsey, 2022), businesses have found it imperative to innovate their marketing approaches to navigate the pandemic's impact on the market landscape.

Moreover, these studies have not offered insights into how organizations or corporate entities can develop, select, and execute well-structured marketing innovation plans and protocols that are tailored to address the unique challenges posed by the Covid-19 pandemic—a crisis distinct from other health-related issues or pandemics. The worldwide effort to manage the virus's transmission has predominantly concentrated on implementing public health tactics aimed at constraining and minimizing the spread. These strategies encompass guidelines like the stay-at-home mandate, practicing hand hygiene, maintaining social distance, imposing lockdowns, and advocating for community-wide use of protective masks, measures that are now being adopted across almost every country (Rowan & Galanakis, 2020). However, these interventions have had adverse effects on economic progress, particularly in less developed nations, rendering various sectors susceptible to the repercussions of sudden unemployment stemming from the COVID-19 crisis, and leaving numerous individuals reliant on government assistance.

Blaique et al. (2023) highlighted that the pandemic's impact on both health and the environment, along with the recommended steps for monitoring and alleviation, have compelled numerous enterprises, institutions (both governmental and non-governmental), and even educational establishments to reassess their operational frameworks. Hence, numerous researchers in the field of marketing innovation have regarded this concept as an integral aspect of a company's strategic orientation and dedication. This involves a distinctive approach that brings about significant enhancements in marketing techniques. This approach enables businesses to utilize their resources effectively and efficiently to generate exceptional value and establish a unique position in the market. In accordance with the work of Wang et al. (2020), who proposed a dual-dimensional framework for marketing innovation strategies – one related to the impetus behind innovations and the other concerning the extent of collaborative innovations in response to the COVID-19 crisis, based on successful Chinese enterprises – this investigation delved into the influence of the global pandemic or health crises on both market innovation and the culture of innovation within most companies. To commence, we analyzed the impact of the COVID-19 pandemic on the innovation cultures of small and medium-sized enterprises (SMEs) in Nigeria.

Our second analysis examined how the COVID-19 pandemic or global health crisis affected Nigerian SME's market innovation strategies. Finally, we revealed the relevance technology adoption for Nigerian SME's, which enriches crisis management literature and providing new marketing innovation research scenarios. Although internet penetration and connectivity have increased globally, small enterprises (SMEs) in Africa and low-income countries have not fully embraced the benefits of ICT, due to an ineffective digital technology framework (Syahmardi et al., 2021). Studying digital marketing adoption among SME's, particularly during pandemics, can provide valuable data for stakeholders and policymakers to develop mitigation plans, and particularly for SME's that are most affected by shocks and pandemics. As a specific contribution to literature and practice, the study developed and recommended four marketing innovation strategies for SME's and organizations to choose

from and develop pandemic, post pandemic crisis management strategies. Lastly, our study concluded with a discussion of the theoretical and practical consequences that may guide future research.

Theoretical Framework and Hypothesis Development

The Disruptive Innovation Perspective

The research embraces the disruptive innovation theory proposed by Christensen et al. (2018). This theory has gained traction across various industries, significantly shaping perspectives and investigations in fields such as innovation management, strategy, and organizational studies. Disruptive innovations are recognized by scholars as potent tools for forging novel markets, especially in times marked by financial, logistic, or broader economic and security crises. However, recent examinations haven't yet applied this theory to elucidate its impact on innovation culture and market innovation, particularly within emerging and potentially more vulnerable economies during global pandemics or health crises. This study stands as a pioneering effort in this direction.

The theory underscores that culture serves as an enduring competitive advantage. This advantage emerges not only due to its value and rarity but also due to the challenge competitors face in replicating it, given that many of its critical elements are implicit. In light of open innovation's pertinence and its influence on innovative endeavors by SMEs and organizations in Nigeria, as well as its role in propelling idea-centric companies and research and development units, the study introduces a conceptual framework to illustrate these dynamics.

The study's hypotheses are formulated based on the disruptive innovation theory and informed by previous works (Ajide et al., 2020; Charoensukmongkol, 2022). However, there is a scarcity of empirical investigations on this subject, especially in the context of developing countries like Nigeria, and a lack of extension on the disruptive innovation theory. Hence, this study significantly contributes empirically to address these gaps.

The Impact of the Global Health Crisis on Culture of Innovation

A number of studies have examined the impact of the COVID-19 pandemic on organizational marketing and culture of innovation. A study of exploring how entrepreneurs' improvisational behavior affected Thai SMEs' performance amid the economic crisis during the COVID-19 epidemic (Charoensukmongkol, 2022) reveals external elements (competitive intensity) and internal ones (financial and human resources) that might improve the influence of improvisational behavior on business performance. The investigation indicates a favorable correlation between entrepreneur improvisation and business performance. The moderating effect research also demonstrated that improvisational conduct improves business performance more for enterprises with greater competitive intensity and financial and human resources.

This has led to an increased use of social media, email marketing, and other digital and technological platforms as confirmed by the studies of Blaique et al. (2023) which further examined the human motivation during COVID-19: the role of organizational learning, resilience, and psychological empowerment. The study found that businesses that were able to adapt quickly to the changing environment were more likely to be innovative. This was because these businesses were able to identify new opportunities and adapt their strategies to take advantage of them. In Nigeria, the impact of the pandemic on consumer behavior was found to have become more price-sensitive, with many looking for bargains and discounts (Olatunji et al., 2020) examined. This has led businesses to adjust their marketing strategies to focus more on value propositions and discounts. More recently, impact of the pandemic on consumer trust in brands found that consumers had become more skeptical of marketing claims, and were more likely to trust brands that were transparent and honest about their operations (Ozili, 2021). Thus, we hypothesize:

H1. There is a positive impact of the COVID-19 pandemic or the global health crisis on the culture of innovation of organizations in Nigeria.

Also, the COVID-19 pandemic has had a significant impact on businesses worldwide, including their marketing strategies and culture of innovation. The global health crisis has caused many companies to reassess their marketing tactics, adopt new technologies, and adjust to new consumer behavior (Charoensukmongkol, 2022; Charoensukmongkol & Pandey, 2023). In a study by Nguyen et al. (2020), they found that the pandemic has caused many businesses to shift their marketing strategies towards digital channels, such as social media, email marketing, and online advertising. Studies also noted that companies are focusing more on customer retention and loyalty programs to maintain their customer base during the pandemic the pandemic and has also led to changes in the culture of innovation within organizations (Blaique et al., 2023). The authors noted that companies are now more willing to experiment with new ideas and technologies, and are adopting a more agile approach to innovation.

Similarly, Olufunke et al. (2023) found that the pandemic has led to a greater emphasis on innovation within companies, particularly in the areas of digitalization and sustainability. The authors noted that businesses are now more willing to invest in new technologies and processes to adapt to the changing business environment. The study serves as the basis for the current study's hypothesis.

H1b. There is a negative impact of the COVID-19 pandemic or the global health crisis on the culture of innovation of organizations in Nigeria.

The Impact of the Global Health Crisis on Market Innovation Strategies

The influence of the COVID-19 pandemic on the global economy has been undeniable since early 2020. However, its impact has been particularly adverse in developing nations, leading to shifts in consumer buying behaviors and preferences due to safety and health concerns (Wang et al., 2020). A notable example is Nigeria, where

lockdowns and social distancing measures have detrimentally affected businesses. This is compounded by the fact that many organizations in Nigeria have not embraced artificial intelligence systems for marketing, leading to decreased investments and capabilities in this area (Ajide et al., 2020). Consequently, these factors have severely impacted operational revenues. Research reveals a lack of proactive strategies among Nigerian organizations to manage declines in cash flow during unforeseen crises like the ongoing COVID-19 pandemic. This deficiency is exacerbated by a weak regulatory framework and government policies that fail to provide adequate safeguards against such profound global crises (Ozili, 2021).

Furthermore, the pandemic's repercussions have been felt by global corporations, resulting in substantial declines in orders, heightened cost pressures related to rent, wages, and taxes, elevated raw material prices, reduced demand, logistical challenges, and difficulties in locating alternative suppliers (Ozili, 2021). Hence, we hypothesized.

H2. There is a positive impact of the COVID-19 pandemic or the global health crisis on market innovation strategies of organizations in Nigeria.

Additionally, the lockdown measures have caused a shift in consumer purchasing patterns and attitudes towards more cautious spending, following the emergence of COVID-19. Many consumers now prefer a more moderate lifestyle by cutting down on the purchase of unnecessary goods to avoid wasteful expenses (Ozili, 2021). Consequently, this led to a significant drop in the revenue of companies during the initial quarter of 2020 (Wang et al., 2020). In Nigeria, the absence of sufficient welfare-focused support from the government could be a contributing factor to the decrease in consumer spending during the pandemic (Blaique et al., 2023). In this challenging period, most businesses faced obstacles such as insufficient governmental aid, lack of incentives, and unreliable power supply. These factors hindered their productivity and ability to fulfill consumer demands during the crisis (Ozili, 2021). This is because the prevailing choice for businesses both in Nigeria and globally is to navigate challenges and turn crises into opportunities.

Notably, research on globalization and entrepreneurial strategies emphasized the potential of investing in technological innovations, including advanced information systems and artificial intelligence (Kiyabo & Isaga, 2020; Vaitoonkiat & Charoen-sukmongkol, 2020). This drive prompted numerous Nigerian companies to maintain productivity during the crisis, thereby mitigating the severity of the pandemic's impact, contrary to initial expectations (Ajide et al., 2020). As a result, technology played a role in influencing market innovation and overall performance during the health crisis (Farrugia & Plutowski, 2020). However, studies predominantly indicated that firms and organizations should proactively devise survival strategies in the face of pandemics and health crises (Wang et al., 2020). In this regard, marketing innovation has emerged as a proactive solution for managing pandemics, natural disasters, and environmental crises, as demonstrated by the research of Ozili (2021). Unlike technological innovations that usually require extensive research and development cycles, marketing innovations tend to be more adaptable to swiftly changing customer demands (Wang et al., 2020). Therefore, we hypothesized.

H2b. *There is a negative impact of the COVID-19 pandemic or the global health crisis on market innovation strategies of organizations in Nigeria.*

Digitalization of Marketing Activities and Technology Adoption of SME's in the Global Health Crisis

Digital marketing refers to the specific field of marketing that utilizes the Internet and other digital technologies. The use of various digital platforms such as application software, mobile phones, websites, and social media platforms, together with digital tools like search engine optimization, e-mail, mobile marketing, and influencer marketing, is employed by organizations and businesses to advertise and sell their goods and services (Chinakidzwa & Phiri, 2020). Social media marketing is a component of digital marketing that primarily focuses on using social media platforms as a means to promote and advertise goods and services. In addition, it is worth noting that social media marketing is mostly confined to online platforms, while digital marketing encompasses both online and offline realms. Since the onset of the pandemic, studies have conducted studies to investigate the effects of the epidemic on enterprises (Chinakidzwa & Phiri, 2020; Bartik et al., 2020; Otache, 2020; Ozili, 2021).

According to Paniagua and Sapena (2014), digital marketing has been demonstrated to facilitate the commercial activities of medium firms due to its cheap adoption cost. This is achieved by eliminating geographical obstacles in business operations, as highlighted by Alarcón et al. (2018). Previous studies (Ahmad et al., 2019; Ainin et al., 2015; Eze et al., 2020) have all shown evidence supporting a favorable correlation between the adoption of digital marketing strategies and the overall success of businesses. Nevertheless, despite the increasing prevalence of internet access and connectivity on a global scale, numerous enterprises, particularly SME's situated in Africa and other economically disadvantaged nations have yet to fully exploit the substantial advantages offered by information and communication technologies (Syahmardi et al., 2021).

The aforementioned studies have shed light on the adverse consequences of the COVID-19 pandemic on various businesses, with a particular emphasis on small and medium-sized enterprises (SMEs). These repercussions encompass a decrease in operational activities, disruptions in the supply chain, a surge in unemployment leading to worker layoffs, business closures, challenges in the agricultural and food sectors, closure of educational institutions, and a decline in oil revenue, primarily affecting Nigeria. The use of digital and social media marketing channels has been introduced as a means to mitigate the adverse effects of the COVID-19 pandemic. Moreover, there is a need for further investigation into the impact of COVID-19 on the utilization of digital marketing in SME's. Although limited in number, existing studies have yielded valuable insights that can serve as a catalyst for future research. For instance, Patma et al. (2020) conducted an online survey and discovered that the perceived benefits and external pressure significantly influenced the digitalization of small and medium enterprises (SMEs) in Indonesia.

Similarly, (Donthu & Gustafsson, 2020; Zamani, 2022) have documented an increase in the use of digital and social media marketing, particularly during the

period of lockdown. Nevertheless, despite the increasing prevalence of internet access and connectivity on a global scale, numerous businesses, particularly small and medium enterprises (SMEs) in Nigeria and other low-income nations, have yet to fully exploit the substantial advantages offered by information and communication technologies (Syahmardi et al., 2021). During the pandemic, small and medium firms were the worst impacted because of their vulnerability and insufficient resources (Otache, 2020). Additionally, SMEs rely on daily revenue from their commercial operations. Several preventative and control measures were undertaken, including mandatory mask usage, social separation, and lockdowns. Despite the government lifting the prohibition on transportation, several SMEs remained closed owing to poor economic activity and perhaps an ineffective government digital technology supportive framework (Otache, 2020; Ozili, 2021).

Thus, highlighting the relevance of digital technology and digital marketing in order to mitigate the effect of the global health crisis and hence SME's should understand market dynamics via governmental support and digital technology framework in order to have a successful transition into the digital space that will enhance proactive marketing and wider consumer reach.

Based on the above mentioned theorized relationship, we thus, depicted our conceptual model (see Figure 1).

Methods

Research Design and Data Collection

This research conducted a preliminary investigation involving a group of 100 randomly chosen participants from various small and medium-sized enterprises (SMEs) located in three different industrial zones in Nigeria: South Western, North Western, and South Eastern regions. Many SMEs rely on global supply chains to source mate-

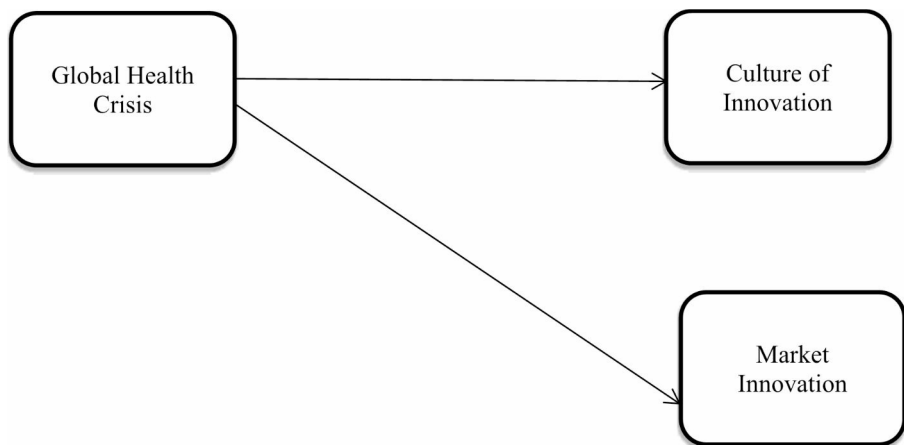


Fig. 1 The conceptual framework

rials, components, and products. A health crisis can disrupt these supply chains, causing delays, shortages, and increased costs, which can adversely affect SMEs' ability to produce and deliver their goods and services. We selected SMEs as participants which can influence our core constructs. However, the participant pool included service-oriented businesses like financial technology (fintech) SME's, banks, insurance firms, hospitals, and other service providers. Additionally, manufacturing enterprises engaged in producing consumer goods and vital items like plastics, along with recycling companies, were also provided with the survey forms. The goal was to ensure the accuracy and effectiveness of the questionnaires. To identify suitable respondents and guarantee the quality of the questionnaires, a snowballing technique (Miles et al., 2014) was utilized. Initially, a core group of contacts was approached, and they were then asked to suggest individuals with significant seniority and experience in other SMEs. These identified individuals were then contacted to participate and complete the survey. To formulate the survey questionnaires, an extensive review of existing studies on the subject was conducted, along with input from scholars, researchers, and experts in management. Developing the research constructs as a result. Cronbach's alpha of 0.7 and above was used to determine the survey's content validity and reliability. More specifically, the results of pilot study confirmed the face and content validity of measures.

Before collecting our data, we engaged in communication with the managers of each Small and Medium Enterprises (SMEs) via email correspondence. They expressed their willingness to collaborate in our study. We communicated to them the significance of the global health crisis in relation to the innovation within their respective organizations. The list of SMEs was obtained from the corporate affairs commission (CAC) of Nigeria online site, and we employed a stratified sampling approach to select those SMEs that best represented the entire SMEs population. We arrived at a sample size of 285 responses, determined by focusing on SMEs with notable performance in their specific industries and markets within designated industrial regions of Nigerian factors, such as the number of operational branches across regions, market presence, advertising capacity, and staff strength were taken into consideration. For instance, SMEs and startups like Kuda and Prospa (specializing in financial technology and digital banking) were chosen due to their strong promotional and online advertising capabilities, particularly important during the pandemic when their clientele was predominantly composed of online users. Furthermore, the constraints and protocols imposed by the pandemic justified this selection.

We introduced our research process and eligibility criteria to potential participants. Firstly, participants needed to be permanent employees. Secondly, they were required to hold middle-level positions within their organizations. Thirdly, a minimum of two years of experience within the same organization was mandatory. We conveyed the nature of our study as an academic research project, emphasizing the voluntary nature of participation. During the survey phase, participants were presented with an informed consent form, assuring them of their right to withdraw from the study at any point. We explicitly assured them that all information would remain confidential and that data would only be presented in an aggregated manner. Additionally, it was communicated that respondents who completed all three questionnaires would be entered into a lottery for a chance to receive a special gift, such as a smartphone.

A total of 285 sample survey questionnaires were distributed to 290 businesses operating in a variety of sectors, including services, manufacturing and others. The sample size was determined with the 'A' priori sample size calculator for structural equation models (Soper, 2017). A total of 232 of these questionnaires were returned for additional analysis, and only 217 were returned and found suitable for use in our study. The respondent were marketing and operational heads and their profile was analyzed in the current research using SPSS 22, and a preliminary analysis was run using PLS-SEM using Smart-PLS 3.2.8 to evaluate the study's theorized hypotheses. The optimal level of factor loadings for indicators was equal to 0.5 or higher (Hulland, 1999) and any factor loading that was lower from threshold were deleted.

Measures

The demographic information of the respondents is included in the first portion of the questionnaires; while the measurement variables for the research that helped build the study constructs are included in the second section. The research variables are broken down into 3 constructs in the second part, each of which has 16 items. As a result, the build six elements used to assess the global health crisis (GHS) are adapted from the works of Wang et al. (2020). & Charoensukmongkol (2022). We examined the intensity of the pandemic in order to truly measure the constructions observed variables, even if the phrase "global health crisis" cannot really be assessed even with accepted research. Factors include the negative effect on logistics, the raw material supply, the impact of the mandatory lockdown, a shift in consumer buying patterns and purchasing power, etc. market innovation, which included six items and was measured based in factors such as product innovation, process innovation, market share and penetration, customer-centric innovation, collaboration and partnerships and technology adoption. We modified from the works of Li et al. (2022) & Blaique et al. (2023), while the culture of innovation included four items (Ajide et al., 2020; Corsaro & D'Amico, 2022). Items such as risk tolerance, leadership support, open communication and the cross functional collaboration capability of teams on business tasks were measured to define culture of innovation. The scores for each question ranged from 1 (*strongly disagree*) to 6 (*strongly agreed*) on a six-point Likert scale. The reliability coefficient for the reported items was above 0.70. We measured construct connections using a 6-item scale (see appendix).

Results

Descriptive Statistics

According to previous studies' findings (Ozili, 2021; Zhang et al., 2022), managerial, technological, and innovation culture can estimate capabilities. Thus, we employed demographic characteristics, such as gender, age, education, work experience, and number of employees per SMEs. Although, elderly and seasoned workers can handle larger task in market innovation and strategies better than younger and less experi-

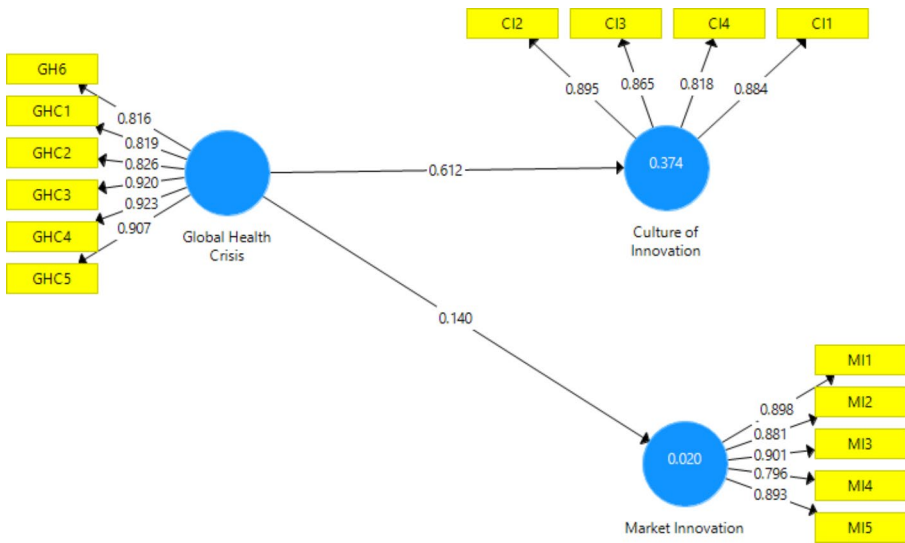


Fig. II The measurement model

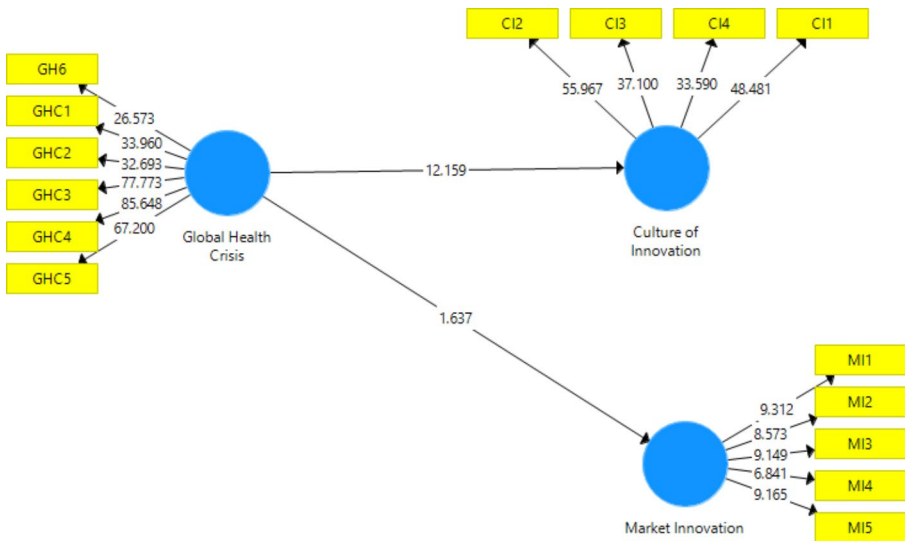


Fig. III The structural model

enced ones, regardless of degree. We utilized these characteristics to predict current scenarios associated study data.

A description of the study’s findings and a demographic analysis of the sample respondents are provided in this section. Figures II and III show how Smart PLS 3.2.8 was used to test the study model. In order to calculate the t-values and assess the significance of the relation, the current study used samples from 217 cases. Henseler et al. (2015) assert that through controlling for the error that reduces correlations and

increases the theory's validity, PLS predicts moderator effects more accurately. From the outcomes in Table I that 98 respondents (26.9%) are female and 119 respondents (73.1%) are male. This suggests that male managers outweigh female owners. Also, only 9% of the workforce was within the age of 20–29, while 17% were within the age of 30–39, 27% were within the age of 40–49, 40% were within the age of 50–59 and only 14% were within 60 years and above.

Table I shows the nature of the businesses, which indicated that 91 (42%) of the respondents are into services, 58 (27%) into custom services while 39 (18%) are into industrial services, 20 (9%) are into manufacturing while others 9 (4%) respondents are among other specifications. This shows that majority of the respondents constituting are either into services or IT. The findings in Table I indicated that 85 (39%) respondents hold a bachelors' degree, 119 (55%) hold a masters' degree, 13 (6%) hold above master degree. This implies that most of the respondents operating either a micro or small enterprises. The average number of employees was 6 per SMEs. Table I gives a complete summary of the demography.

Common Method Variance

Because of the potential effects for CMV, we split our data collection over two distinct windows. We employed confirmatory factor analysis (CFA) and Harman's one-factor test to alleviate CMV (Podsakoff et al., 2003). Thus, we first conducted Harman's

Table I Demographic characteristics

Demographics	Categories	Frequencies and Percentage
Gender	Male	119 (54.8%)
	Female	98 (45.2%)
Age	20–29	20 (9%)
	30–39	37 (17%)
	40–49	59(27%)
	50–59	87 (40%)
	60 and above	14 (7%)
Industry	Services	91 (42%)
	Custom services	58 (27%)
	Industrial services	39 (18%)
	Manufacturing	20 (9%)
	Others	9 (4%)
Education	Lower than Higher Secondary	None
	Bachelor	85 (39%)
	Masters	119 (55%)
	PhD and others	13 (6%)
Experience	Less than 5	9 (4%)
	5–10	76 (35%)
	11–15	58 (27%)
	16–20	44 (20%)
	More than 20	30 (14%)

Note. N=217

one-factor test on all first-order components. Seven factors with eigenvalues greater than one was found using EFA, and these factors explained 73.7% of the total variance. In addition, the first component only explains 26.3% of the total variation; this is considerably below the minimum acceptable 50%. The results from using CFA single-factor measurement model are less than ideal as well as CFA with a χ^2 (1697) value of 26457.32, RMSEA of 0.17, CFI of 0.14, NNFI of 0.098, and SRMR of 0.17. Our findings confirm the lack of severity of CMV.

Effect Size for Direct Relationship (f^2)

The impact magnitude of Market Innovation was assessed using the external factors outlined in the model. The outcomes are displayed in Table 4, illustrating the magnitude of influence for the study's components. In light of these findings, it becomes evident that the magnitudes of influence for all four components are minor. Adhering to the criteria established by Cohen's (1998) metrics, the effect size (0.02 indicating small, 0.15 indicating medium, 0.35 indicating substantial) is supported. The computation of the effect size followed the subsequent formula.

$$Effect\ Size\ (f^2) = \frac{R^2_{Included} - xR^2_{Excluded}}{1 - R^2_{Included}}$$

Where, f^2 = effect sizes.

R^2 included= R^2 with a particular construct included in the model.

R^2 excluded= R^2 with a particular construct excluded from the model.

1 = is constant.

The suitability of the effect size is gauged based on its numerical range, spanning from 0.35 to 0.02, which corresponds to high, moderate, and low significance levels, respectively, as outlined by Dijkstra and Henseler (2015). Nonetheless, even the most minimal value associated with a construct should not be disregarded, given its potential to impact or introduce variations in the endogenous variables. Consequently, this designated value or categorization serves as a determinant in assessing the appropriateness of integrating a specific construct into the model. As illustrated in Table V, the effect size is 0.598 for the Culture of Innovation construct, while for Market Innovation, it stands at 0.020. Consequently, the calculated effect size is provided by Smart PLS 3.2.8, as indicated in Table V.

Hypothesis Testing

The outcomes displayed in Table VI depict the anticipated pathways within the study's model. These outcomes unveil the direct influences of the constructs under investigation. To assess the postulated relationships, t-statistics, and path estimations were computed through a bootstrapping method employing 5,000 resampling iterations. The model's structural pathways were analyzed as presented in Table VI. The analysis unveiled that the global health crisis holds substantial and statistically sig-

nificant sway over the culture of innovation, as evidenced by the noteworthy beta estimate ($\beta=0.612$, $t\text{-value}=12.845$, $p<0.001$). This finding aligns with the initial hypothesis of the study, corroborating analogous research that arrived at congruent findings. Conversely, the results also disclosed that the global health crisis has either minimal or negligible influence on market innovation, indicated by the study's estimations ($\beta=0.140$, $t\text{-value}=1.597$, $p>0.001$). Given that many organizations have sizeable investments in artificial intelligence and technology adoption, the pandemic's impact on market innovation appears to have been less detrimental, in accordance with insights from earlier studies.

Discussion

Hypothesis 1 (H1) posited a positive correlation between the global health crisis and the fostering of an innovative culture. This conjecture finds validation in the outcomes illustrated in Figure II, III, as well as Table VI. The study's results substantiate the argument outlined in the second part of H1. The findings elucidate that the evolving external landscape, marked by occurrences like global pandemics and health crises, not only introduces opportunities but also challenges to the operations of small and medium-sized enterprises (SMEs). Consequently, this leads to heightened uncertainty in terms of survival and advancement. Nonetheless, it's worth noting that, contrary to common belief, the primary driver behind the losses and insolvencies of numerous SMEs is not the lack of innovation capability, but rather the deficiency in organizational flexibility. This lack of adaptability inhibits swift responses and adjustments to shifts in the external milieu (Li et al., 2022).

For instance, the scenario in Nigeria demonstrates the adverse repercussions of lockdowns and social distancing measures on numerous enterprises (Ajide et al., 2020). These actions have had a profound negative impact on revenue streams. Studies have indicated that the majority of Nigerian organizations have yet to establish proactive measures to manage cash flow decline during unforeseen contingencies like the ongoing COVID-19 pandemic. The resultant strain on cash flow is exacerbated by the absence of a robust framework or government policies that would offer safeguards against such profound global crises (Ajide et al., 2020). Consequently, this predicament has adversely affected the innovation capacity and the broader culture of innovation in these organizations. This erosion in innovation capability can be attributed, in part, to the shift towards remote work, which has impeded effective monitoring and evaluation of employee alignment with corporate culture due to reduced face-to-face interactions.

Hypotheses 2 (H2) and 2b (H2b) were also subjected to scrutiny through the PLS algorithm. The results indicate that the global health crisis referred to in this study as the COVID-19 pandemic—did not yield a significant impact on market innovation. In other words, the pandemic resulted in a stagnation of market dynamics and operations. The consequences of the COVID-19 outbreak were harsh, causing substantial setbacks for global firms. These included plummeting orders, cost pressures encompassing rent, wages, and taxes, heightened raw material prices, inadequate demand, logistical challenges, and struggles to secure alternative suppliers (Wang

et al., 2020). The lockdowns also induced a shift in consumer purchasing behaviors towards more conservative patterns. Consumers preferred maintaining a moderate lifestyle by curtailing purchases of non-essential goods that might lead to wasteful spending. This shift contributed to a sharp decline in firms' revenues during the initial quarter of 2020 (Wang et al., 2020). However, despite these upheavals, the impact on market innovation appears to have been relatively limited, as indicated by the study's findings.

Empirical Findings

This section provides an overview of the research findings. The assessment of the research model by Smart PLS 3.2.8 is depicted in Figures II and III. To determine the significance of relationships, assess the standard error of estimates, and compute t-values, a bootstrapping procedure involving 5,000 samples and 217 cases was carried out. The analysis commenced with a convergent validity assessment, gauging the extent to which diverse items capture the same underlying concept. Subsequently, the discriminant validity assessment was conducted to ensure that the measurement truly represents the intended variables, which was indicated by low correlations between the focal measurement and other constructs. Discriminant validity was also evaluated by comparing squared correlations between constructs and extracted variances, following the methods outlined by Dijkstra and Henseler (2015) and Hair et al. (2014).

Lastly, both Figure II and Table II were employed to evaluate the inter-item consistency of the measurement items, utilizing Cronbach's alpha coefficient.

Table II illustrates that all items surpassed the 0.4 threshold, displaying substantial loadings onto their respective core constructs, which serves as evidence of discriminant validity. In Table III, a comparison is made between this research's discriminant validity, assessed using the Average Variance Extracted (AVE), and the correlation matrix of each variable. Notably, all highlighted values meet the

Table II Items loading, composite reliability and average variance extracted

Constructs	Items	Loading	α	CR	AVE
Global Health Crisis	GHC1	0.819	0.935	0.949	0.757
	GHC2	0.826			
	GHC3	0.920			
	GHC4	0.923			
	GHC5	0.907			
	GHC6	0.816			
Culture of Innovation	CI1	0.884	0.889	0.923	.750
	CI2	0.895			
	CI3	0.865			
	CI4	0.818			
Market Innovation	MI1	0.898	0.923	0.942	0.765
	MI2	0.881			
	MI3	0.901			
	MI4	0.796			
	MI5	0.893			

Note. GHC=global health crisis, CI=cultural innovation, MI=market innovation. α =Cronbach's alpha, CR=composite reliability, AVE=average variance extracted

Table III Fornell-larcker criterion

Constructs	Culture of Innovation	Global Health Crisis	Market Innovation
Culture of Innovation	0.866		
Global Health Crisis	0.612	0.870	
Market Innovation	0.000	0.140	0.875

Note. The square root of the average variance extracted represents the value that is highlighted in bold

Table VI Results for the structural path model of direct effects

Hypothesized paths	Path coefficient	Standard error	T- value	P-value	Decisions
H1: Global Health Crisis -> Culture of Innovation	0.612	0.048	12.845	0.000	Supported
H2: Global Health Crisis -> Market Innovation	0.140	0.088	1.597	0.111	Not Supported

Note. GHS=global health crisis, CI=culture of innovation, MI=marketing innovation. $p < **p < 0.01$; $***p < 0.001$

Table V The effect size of the relationships between the studies constructs

Constructs	Culture of Innovation	Market Innovation
Culture of Innovation	-	-
Global Health Crisis	0.598	0.020
Market Innovation	-	.

Table IV Heterotrait-monotrait ratio (HTMT)

Constructs	Culture of Innovation	Global Health Crisis	Market Innovation
Culture of Innovation			
Global Health Crisis	0.669		
Market Innovation	0.066	0.144	

criterion outlined by Fornell and Larcker (1981). While the Fornell and Larcker (1981) criterion and cross-loading techniques have faced criticism from Henseler et al. (2015) for their leniency in validating validity, the recommendation to adopt the Heterotrait-Monotrait Ratio of Correlations (HTMT) based on a multitrait-multimethod matrix by Henseler (2017) was noted. This is displayed in Table IV through the HTMT values employed in this study.

Furthermore, the examination of discriminant validity is also presented in Table III, denoting the Fornell-Larcker Criterion. Meanwhile, Table VI expounds on the outcomes of the direct effects within the structural path model, and Table V divulges the effect size pertaining to the relationships among the study's con-

structs. In both Tables III and IV, it is evident that the measurement model attains commendable convergent and discriminant validity.

The findings underscore that, despite the far-reaching impact of the global pandemic, market innovation flourished by adapting novel dimensions through the integration of artificial intelligence and technology. This transformation significantly influenced the notions of competitive advantage, core competencies, consumer and service delivery, as well as market structure and retention strategies. The results indicate that many organizations leveraged artificial intelligence systems and the opportunities brought about by lockdown measures to establish distinctive virtual platforms. This was achieved through systematic analysis of their current target markets, allowing for an enhanced understanding of effective and efficient methods to cater to these markets, facilitated by artificial intelligence systems. The pronounced impact of the global health crisis, spurred by the COVID-19 pandemic, is undeniable, particularly in the realms of organizational marketing and the cultivation of an innovative culture.

First, a move to digital marketing: As a result of the lockdowns and social seclusion measures, companies have been forced to switch their marketing methods to digital channels, such as social media, email marketing, and online advertising. This has led to an increased reliance on digital tools and technologies to reach and engage with customers. Secondly, an increased focus on customer needs: The pandemic has highlighted the importance of understanding customer needs and preferences. Companies have had to adapt their products and services to meet the changing needs and demands of their customers. This has led to a greater emphasis on customer research and feedback, as well as a more customer-centric approach to marketing. Thirdly, an emphasis on innovation: The pandemic has also accelerated the pace of innovation as companies have had to adapt quickly to the changing business environment. This has led to an increased focus on innovation and the adoption of new technologies and business models.

Companies that are able to innovate and adapt quickly are more likely to survive and thrive in the post-pandemic world. Fourth, an increased remote work: Many companies have shifted to remote work during the pandemic, which has had an impact on organizational culture. Remote work has made it more challenging to maintain a strong organizational culture, but it has also led to greater flexibility and the adoption of new ways of working. Finally, a greater focus on employee well-being: The pandemic has highlighted the importance of employee well-being. Companies have had to take steps to ensure the health and safety of their employees, as well as to support their mental health and well-being. This has led to a greater emphasis on employee wellness programs and flexible work arrangements.

Overall, the global health crisis has had a profound impact on organizational marketing and culture of innovation, accelerating the adoption of digital technologies, customer-centricity, and innovation, while also highlighting the importance of employee well-being and the need for organizational resilience. The global pandemic has inevitably caused a massive disruption in the global business environment. Among the major evidences are the disruptions in the global supply chain which were observed via a decline in raw material supply, human

capital and logistics due to the advent of the lockdown measures in order to curb the spread of the virus (Wang et al., 2020). Although, most technologically advanced and AI induced nations and corporations were able to avert such global society shock (Rowan & Galanakis, 2020). Nigeria, being a developing country and with a lesser investment in human capital and AI was inevitably affected by the impact of the pandemic as most business was closed and had no other alternative to operate despite the compulsory lockdown (Ozili, 2021).

Practical Implications

Numerous research endeavors have delved into assessing how health crises influence both economic landscapes and the innovative capacities of businesses. However, the literature significantly lacks a comprehensive exploration of the precise repercussions of the ongoing global health crisis, specifically the COVID-19 pandemic, and the subsequent implications of its protocols on both the culture of innovation and market innovation in developing nations, where the pandemic's impact can be particularly burdensome. In this context, the current study assumes significance as it fills this void by conducting empirical investigations that shed light on these dynamics. Furthermore, an extensive analysis of prior research exposes the absence of substantial insight into effectively managing future pandemics and mitigating their dimensions and severity. This study underscores the potential of addressing these challenges through strategic investments in advanced artificial intelligence systems. Additionally, it emphasizes the crucial role that well-structured governmental frameworks play in offering organizations a conducive environment for consistent innovation.

In Nigeria, consumer behavior has become more price-sensitive, and businesses have had to adjust their marketing strategies to focus more on value propositions and discounts. The pandemic has also led to a shift in consumer trust, with customers becoming more skeptical of marketing claims and looking for transparency and honesty from brands.

Limitations

Like any scholarly endeavor, this study is not exempt from its inherent limitations. One of the foremost constraints pertains to the composition of the study's sample. Consequently, we recommend that our findings be subjected to replication across a more diverse range of organizations. This study's scope was confined to Nigerian firms, with a predominant emphasis on the northern region of the country. Therefore, it is imperative that subsequent investigations encompass a broader and more comprehensive spectrum of empirical evidence, utilizing primary data collection methods. The empirical examination encountered constraints primarily stemming from the ramifications of the COVID-19 pandemic. Lockdowns and mandatory stay-at-home measures, implemented to curb virus propagation, significantly constrained the extent of data collection. Furthermore, the study did not ascertain which particular facets of the culture of innovation were most severely impacted by the global health crisis posed by COVID-19.

Lastly, it's essential to acknowledge that this study derives its insights from the subjective perceptions of personnel within Nigerian organizations. These limitations provide a foundation for further in-depth research inquiries.

Conclusion

In conclusion, this study examined how the COVID-19 pandemic affected Nigeria's organizational innovation culture and marketing innovation tactics, as well as how customer behavior influenced these outcomes. The study concluded that although the pandemic had a substantial impact on consumer behavior and organizational innovation culture, marketing innovation tactics had not been adversely impacted by technological uptake and complexity. The study also created a number of methods for businesses to select marketing innovation strategies, enhancing the literature on crisis management and supplying fresh contexts for marketing innovation studies.

For academics and practitioners alike, the study has significant theoretical and practical ramifications. First, it emphasizes the significance of organizational innovation cultures in fostering company performance and guaranteeing. Due to the COVID-19 pandemic, organizations in Nigeria, like their counterparts globally, have had to adopt new strategies to navigate the crisis. Secondly, the pandemic has caused significant disruptions in business operations, supply chains, and consumer behavior. As a result, organizations have had to re-evaluate their marketing strategies and culture of innovation to remain competitive and adapt to the changing business environment. Third, the literature review suggests that the pandemic has led to a shift towards digital marketing channels, such as social media and online advertising, and a focus on customer retention and loyalty programs to maintain customer engagement. Finally, the pandemic has led to changes in the culture of innovation, with organizations becoming more willing to experiment with new ideas and technologies.

Given Nigeria's distinct socioeconomic and infrastructural limitations, organizations have encountered pronounced challenges in adapting to the pandemic's impact on marketing and innovation. The nation's various regions exhibit limited technology adoption and restricted access to reliable internet connections, thereby complicating the transition to digital marketing platforms. This scenario underscores the necessity for tailored strategies that account for Nigeria's specific attributes. In the realm of market innovation, further investigation is imperative due to its pivotal role in modern management, particularly within the context of today's technologically advanced and fiercely competitive economy. Nonetheless, the findings of this study illuminate that a combination of proactive measures to navigate cash flow decline during unanticipated contingencies—such as the ongoing COVID-19 health crisis—alongside the establishment of a robust framework or governmental policies to shield against inevitable global crises, and augmented investment in artificial intelligence systems and technology, can serve as shields for organizations. By adopting these measures, the detrimental repercussions of the pandemic on companies can be mitigated. These conse-

quences encompass abrupt declines in orders, pressures stemming from expenses like rent, labor, and taxes, an overarching surge in raw material costs, insufficient demand, logistical insufficiencies, and the complication of sourcing alternative suppliers.

Despite the fact that the lockdown prompted consumers' views and purchasing habits to adapt to a more cautious one after the COVID-19 breakout. A decrease in consumption levels during the epidemic in Nigeria may be due to a lack of sufficient welfare-oriented government assistance. Organizations were less productive and unable to meet consumer demands during the crisis, however, due to a lack of government incentives and support as well as an adequate power supply. This is because all businesses in Nigeria, and perhaps the world, make the decision to overcome challenges during a crisis and turn it into an opportunity. The COVID-19 epidemic has also affected Nigeria's corporate marketing and innovation culture. However, the crisis also offers businesses the chance to innovate and change course in order to pursue fresh approaches that may enhance their long-term competitiveness and resilience. Therefore, in order to be relevant and viable in the post-pandemic period, firms in Nigeria must constantly evaluate how the pandemic has affected their operations and develop creative tactics.

Recommendations and Future Research Directions

During the COVID-19 crisis, marketing innovation has emerged as a crucial strategy for the survival of most organizations. Thus, this study delves into potential marketing innovation approaches adopted by Nigerian SMEs to retain customers, expand their market presence, and enhance consumer awareness regarding the impact of the COVID-19 pandemic. Additionally, the study offers recommendations for both survival and recovery strategies in the aftermath of the pandemic, while also suggesting directions for future research. To begin, we propose the "response strategy." This strategy relies on a company's internal resources and capabilities and is suited for organizations with minimal reliance on external resources (Gandia & Gardet, 2019). This approach involves the reconfiguration and optimization of existing business operations, such as shifting offline resources to online channels. This allows businesses to adapt to evolving customer purchasing patterns during the COVID-19 crisis and maintain normal operations. Notably, numerous SMEs swiftly reorganized inventories from offline stores, leveraging astute insights into marketing demands, thereby responding effectively to the altered consumer landscape caused by the crisis.

The "strong unified crisis-response approach" is suggested as a second strategy, primarily for heavily impacted companies during the pandemic. Here, firms must consider two critical aspects. Firstly, for businesses heavily reliant on external resources, a collective strategy that involves partnerships with other firms to generate added value becomes advantageous (Lusch et al., 2010; Gandia & Gardet, 2019). Secondly, firms must ensure the integration of their existing capabilities and resources with this approach (Makkonen et al., 2014). Companies that find it challenging to sell core products online can opt for group-based approaches to innovate new products and services, aligning with a collective strategy (Wang et

al., 2020). The “Proactive strategic approach” serves as the third strategy, suitable for online and tech-driven businesses that are less vulnerable to COVID-19-related shocks. Niche markets and microenterprises fall within the purview of this strategy (Gandia & Gardet, 2019). These firms have the freedom to cater to the needs of their loyal customers while venturing into new avenues as deemed appropriate. Implementing this approach requires strong reconfiguration capabilities to effectively design and launch novel business initiatives (Bowman & Ambrosini, 2003; Ozili, 2021).

Lastly, the “Partnership-based problem-solving approach” offers a distinct path for SMEs less susceptible to COVID-19-related disruptions. This approach thrives on partnership and strategic marketing models, primarily fitting for online consumption models. Firms considering this strategy must evaluate their internal capabilities. Partnerships work for companies that lack the capacity to develop new businesses independently. By teaming up with partners who possess complementary resources, organizations can expand their customer base and create new offerings. It’s crucial that firms leverage their existing strengths to drive the development of new ventures (Makkonen et al., 2014). In summary, SMEs should collaborate to create innovative offerings by capitalizing on complementary capabilities. Collaborative innovation benefits all stakeholders collectively (Huang & Yu, 2011). This approach finds real-world success stories, such as TikTok, which transformed marketing resources into opportunities by integrating them into online services. This collaboration aided firms in sustaining performance levels despite the COVID-19 crisis (Sohu, 2020). The study concludes that the four outlined marketing strategies largely represent Nigerian SMEs’ endeavors to refine their innovation practices in response to the pandemic. Organizations can simultaneously operate in different ways, utilizing their available resources. In the face of the COVID-19 crisis, organizations can opt for any of the four specific marketing strategies, each presenting its unique advantages and drawbacks.

The study has several shortcomings, though, which present possibilities for further investigation. First off, to increase generalizability, future research may include larger companies or other countries in addition to Nigeria, where the study solely questioned SMEs. In addition, while the study concentrated on the pandemic’s implications on marketing innovation tactics, other crisis situations might have distinct impacts on corporate innovation cultures and customer behavior. Future studies might look into how different crisis situations affect these results. Last but not least, the study did not examine the moderating effects of other factors, such as firm size or industry type, on the correlations between the study variables. To better comprehend the intricate interactions between the study variables, future research might examine these moderating effects. Finally, The COVID-19 pandemic has had a significant impact on organizational marketing and culture of innovation. Businesses have had to adapt quickly to changing consumer behavior, with many turning to digital channels to reach customers. This has had an impact on the culture of innovation within organizations, as businesses seek to identify new opportunities and adapt their strategies to meet changing needs.

Appendix A: Core Constructs Items

S/N	Constructs	Measurement Items	Source
1	Global health crisis	<ol style="list-style-type: none"> 1. Negative effect on logistics. 2. Shortage of raw material supply. 3. The impact of the mandatory lockdown on mental health. 4. Shift in consumer buying patterns. 5. Purchasing power decline. 6. Lingering and slowed operations. 	Wang et al. (2020); Charoensukmongkol (2022)
2	Market innovation	<ol style="list-style-type: none"> 1. Product innovation. 2. Process innovation. 3. Market share and penetration. 4. Customer-centric innovation. 5. Collaboration and partnerships. 6. Technology adoption. 	Li et al. (2022); Blaique et al. (2023)
3	Culture of Innovation	<ol style="list-style-type: none"> 1. Tolerance of business environment and employee diversity. 2. Leadership support. 3. Open communication. 4. The cross functional collaboration capability of teams on business tasks. 	Ajide et al. (2020); Corsaro & D'Amico. (2022).

Acknowledgements We would like to thank all the referees and editors for their remarkable suggestions to improve our manuscript. We are also grateful to all the respondents who participated in our research.

Declarations

Conflict of interest The author(s) declared that this study has no conflict of interest with regard to authorship, research, or publication.

References

- Aboramadan, M., Albashiti, B., Alharazin, H., & Zaidoune, S. (2020). Organizational culture, innovation and performance: A study from a non-western context. *Journal of Management Development*, 39(4), 437–451.
- Ahmad, S. Z., Abu Bakar, A. R., & Ahmad, N. (2019). Social survival strategies. *IOSR. Journal of Business and Management*, 22(8), 24–34. Retrieved from <https://www.iosrjournals.org/iosr-jbm/papers/Vol22-issue8/Series-1/D2208012434.pdf>.
- Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N. I., & Shuib, N. L. M. (2015). Factors influencing the use of social media by SMEs and its performance outcomes. *Industrial Management & Data Systems*, 115(3), 570–588. <https://doi.org/10.1108/IMDS-07-2014-0205>.
- Ajide, K. B., Ibrahim, R. L., & Alimi, O. Y. (2020). Estimating the impacts of lockdown on Covid-19 cases in Nigeria. *Transportation Research Interdisciplinary Perspectives*, 7(June), 100217. <https://doi.org/10.1016/j.trip.2020.100217>.
- Alarcón, N. C., Sepúlveda, A. U., Valenzuela-Fernández, L., & Gil-Lafuente, J. (2018). Systematic mapping on social media and its relation to business. *European Research on Management and Business Economics*, 24(2), 104–113. <https://doi.org/10.1016/j.iedeen.2018.01.002>.
- Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences*, 117(30), 17656–17666.

- Blaique, L., Ismail, H. N., & Aldabbas, H. (2023). Organizational learning, resilience and psychological empowerment as antecedents of work engagement during COVID-19. *International Journal of Productivity and Performance Management*, 72(6), 1584–1607. <https://doi.org/10.1108/IJPPM-04-2021-0197>.
- Bowman, C., & Ambrosini, V. (2003). How the resource-based and the dynamic capability views of the firm inform corporate-level strategy. *British Journal of Management*, 14(4), 289–303. <https://doi.org/10.1111/j.1467-8551.2003.00380.x>.
- Charoensukmongkol, P. (2022). Does entrepreneurs' improvisational behavior improve firm performance in time of crisis? *Management Research Review*, 45(1), 26–46. <https://doi.org/10.1108/MRR-12-2020-0738>.
- Charoensukmongkol, P., & Pandey, A. (2023). The flexibility of salespeople and management teams: How they interact and influence performance during the COVID-19 pandemic. *Asia Pacific Management Review*, 28(2), 99–109. <https://doi.org/10.1016/j.apmr.2022.07.001>.
- Chinakidzwa, M., & Phiri, M. (2020). Market orientation and market sensing capabilities in a digital world: Relationships and impact on market performance. *The Retail and Marketing Review*, 16(3), 1–17.
- Christensen, C. M., McDonald, R., Altman, E. J., & Palmer, J. E. (2018). Disruptive innovation: An intellectual history and directions for future research. *Journal of Management Studies*, 55(7), 1043–1078.
- Cohen, J. (1998). *Statistical power analysis for the behavioural sciences*. Routledge Academic.
- Corsaro, D., & D'Amico, V. (2022). How the digital transformation from COVID-19 affected the relational approaches in B2B. *Journal of Business and Industrial Marketing*, 37(10), 2095–2115. <https://doi.org/10.1108/JBIM-05-2021-0266>.
- Dijkstra, T. K., & Henseler, J. (2015). Consistent partial least squares path modeling. *MIS Quarterly*, 39(2), 297–316.
- Donthu, N., & Gustafsson, A. (2020). Effects of COVID-19 on business and research. *Journal of Business Research*, 117, 284–289. <https://doi.org/10.1016/j.jbusres.2020.06.008S>.
- Eze, S. C., Chinedu-Eze, V. C. A., Okike, C. K., & Bello, A. O. (2020). Critical factors influencing the adoption of digital marketing devices by service-oriented micro-businesses in Nigeria: A thematic analysis approach. *Humanities and Social Sciences Communications*, 7(1), <https://doi.org/10.1057/s41599-020-00580-1>.
- Farrugia, G., & Plutowski, R. W. (2020, August). Innovation lessons from the COVID-19 pandemic. *In Mayo Clinic Proceedings*, 95(8), 1574–1577. Elsevier.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gandia, R., & Gardet, E. (2019). Sources of dependence and strategies to Innovate: Evidence from video game SMEs. *Journal of Small Business Management*, 57(3), 1136–1156.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage.
- Hartwig Pautz and Damian Dempsey. (2022). Covid-19 and the crisis of food insecurity in the UK. *Contemporary Social Science*, 17(5), 434–449.
- Henseler, J. (2017). Partial least squares path modeling. In: P. Leeflang, J. Wieringa, T. Bijmolt, & K. Pauwels (Eds.), *Advanced methods for modeling markets*. International series in quantitative marketing. Springer, Cham. https://doi.org/10.1007/978-3-319-53469-5_12.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115–135.
- Huang, K. F., & Yu, C. M. J. (2011). The effect of competitive and non-competitive R&D collaboration on firm innovation. *The Journal of Technology Transfer*, 36(4), 383–403.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, 20(2), 195–204.
- Jogaratnam, G. (2017). How organizational culture influences market orientation and business performance in the restaurant industry. *Journal of Hospitality and Tourism Management*, 31, 211–219.
- Kim, T., & Chang, J. (2019). Organizational culture and performance: A macro-level longitudinal study. *Leadership & Organization Development Journal*, 40(1), 65–84.
- Kiyabo, K., & Isaga, N. (2020). Entrepreneurial orientation, competitive advantage, and SMEs' performance: application of firm growth and personal wealth measures. *Journal of Innovation and Entrepreneurship*, 9, 1–15.

- Li, X., He, X., Zhou, L., & Xie, S. (2022). Impact of epidemics on Enterprise Innovation: An analysis of COVID-19 and SARS. *Sustainability*, 14(9), 5223.
- Lusch, R. F., Vargo, S. L., & Tanniru, M. (2010). Service, value networks and learning. *Journal of the Academy of Marketing Science*, 38(1), 19–31.
- Makkonen, H., Pohjola, M., Olkkonen, R., & Koponen, A. (2014). Dynamic capabilities and firm performance in a financial crisis. *Journal of Business Research*, 67(1), 2707–2719.
- Naidoo, V. (2010). Firm survival through a crisis: The influence of market orientation, marketing innovation and business strategy. *Industrial Marketing Management*, 39(8), 1311–1320.
- Nguyen, T. T., Nguyen, H. T., Mai, H. T., & Tran, T. T. M. (2020). Determinants of digital banking services in Vietnam: Applying utaut2 model. *Asian Economic and Financial Review*, 10(6), 680–696.
- Olatunji, O. S., Ayandele, O., Ashirudeen, D., & Olaniru, O. S. (2020). Infodemic in a pandemic: COVID-19 Conspiracy theories in an African country. *Social Health and Behavior*, 3(4), 152.
- Olufunke Olanmi, O., Godwin Inneh, E., Ayoola, J., Obokoh, T. O., L., & Ehiobuche, C. (2023). COVID-19 and the adoption of digital marketing by micro and small enterprises in Nigeria. *Innovative Marketing*, 19(2), 261–270. [https://doi.org/10.21511/im.19\(2\).2023.21](https://doi.org/10.21511/im.19(2).2023.21).
- Otache, I. (2020). The effects of the COVID-19 pandemic on Nigeria's economy and possible coping strategies. *Asian Journal of Social Sciences and Management Studies*, 7(3), 173–179. <https://doi.org/10.20448/journal.500.2020.73.173.179>.
- Ozili, P. K. (2021). Covid-19 pandemic and economic crisis: The Nigerian experience and structural causes. *Journal of Economic and Administrative Sciences*, 37(4), 401–418.
- Paniagua, J., & Sapena, J. (2014). Business performance and social media: Love or hate? *Business Horizons*, 57(6), 719–728. <https://doi.org/10.1016/j.bushor.2014.07.005>.
- Patma, T. S., Wardana, L. W., Wibowo, A., & Narmaditya, B. S. (2020). The shifting of business activities during the COVID-19 pandemic: Does social media marketing matter? *The Journal of Asian Finance Economics and Business*, 7(12), 283–292. <https://doi.org/10.13106/jafeb.2020>.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method variance in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Rowan, N. J., & Galanakis, C. M. (2020). Unlocking challenges and opportunities presented by COVID-19 pandemic for cross-cutting disruption in agri-food and green deal innovations: Quo Vadis? *Science of the Total Environment*, 748, 141362. <https://doi.org/10.1016/j.scitotenv.2020.141362>.
- Schuldt, K. S., & Gomes, G. (2020). Influence of organizational culture on the environments of innovation and organizational performance. *Gestão & Produção*, 27(3), 1–26.
- Sohu (2019). How to attract accurate fans on the Tik Tok platform? https://www.sohu.com/a/323783487_120144595, Accessed date: 10 May 2020.
- Sohu (2020). Will Tik Tok lose money by launching a free movie service on the platform, Accessed date: 10 May 2020.
- Soper, D. (2017). A-priori sample size calculator for structural equation models (Software).
- Syahmardi, Y., Urip, S., Erida, E., & Siregar, A. P. (2021). The importance of E-commerce adoption and entrepreneurship orientation for sustainable micro, small, and medium enterprises in Indonesia. *Development Studies Research*, 8(1), 244–252. <https://doi.org/10.1080/21665095.2021.1.1>.
- Vaitoonkiat, E., & Charoensukmongkol, P. (2020). Interaction effect of entrepreneurial orientation and stakeholder orientation on the business performance of firms in the steel fabrication industry in Thailand. *Journal of Entrepreneurship in Emerging Economies*, 12(4), 453–473. <https://doi.org/10.1108/JEEE-05-2019-0072>.
- Wang, Y., Hong, A., Li, X., & Gao, J. (2020). Marketing innovations during a global crisis: A study of China firms' response to COVID-19. *Journal of Business Research*, 116, 214–220. <https://doi.org/10.1016/j.jbusres.2020.05.029>.
- Zamani, S. Z. (2022). Small and medium enterprises (SMEs) facing an evolving technological era: A systematic literature review on the adoption of technologies in SMEs. *European Journal of Innovation Management*, 25(6), 735–757. <https://doi.org/10.1108/EJIM-07-2021-036>.
- Zhang, Y., Dare, P. S., Saleem, A., & Chinedu, C. C. (2022). A sensation of COVID-19: How organizational culture is coordinated by human resource management to achieve organizational innovative performance in healthcare institutions. *Frontiers in Psychology*, 13, 943250.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

Authors and Affiliations

**Farouk Umar Kofar Naisa¹ · Enjun Xia¹ · Abubakar Sadiq Ibrahim¹ ·
Adams Adeiza² · Abdul Gaffar Khan^{1,3}**

✉ Enjun Xia
enjunxia@bit.edu.cn

Farouk Umar Kofar Naisa
farouqomar345@gmail.com

Abubakar Sadiq Ibrahim
sadiqbjfu.asi@gmail.com

Adams Adeiza
adams.a@umk.edu.my

Abdul Gaffar Khan
gkak_1985@yahoo.com

¹ School of Management and Economics, Beijing Institute of Technology, Beijing, China

² Malaysian Graduate School of Entrepreneurship and Business (MGSEB), Universiti Malaysia Kelantan, Kota Bharu, Malaysia

³ Department of Management, Mawlana Bhashani Science and Technology University, Tangail 1902, Bangladesh