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Navigating containment challenges: A quantitative study of Ghanaian SME performance during the COVID-19 pandemic

Explorando las dificultades ocasionadas por las medidas de contención: Estudio cuantitativo del rendimiento de las PYME ghanesas durante la pandemia de COVID-19

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Abstract

This study aims to provide valuable insights into the containment challenges faced by Ghanaian SMEs during the COVID-19 pandemic and how these challenges impacted key performance indicators (KPIs). Utilizing the partial least square approach of structural equation modelling (PLS-SEM), data collected from a sample of 152 Ghanaian SMEs are examined. The findings underscore the adverse influence of pandemic-related containment measures on financial performance, sales performance, employee satisfaction, and customer satisfaction, while revealing an increase in online engagement as SMEs adapted their business models. Thus, this study highlights the significance of bolstering dynamic capabilities, with a particular focus on digital transformation and leveraging online platforms, as a means to enhance resilience and adaptability for SMEs amidst challenging containment conditions. Theoretical implications emphasize the crucial role of dynamic capabilities in navigating uncertainty and volatility during crises, while the practical implications offer valuable guidance for small business owners in developing economies as they strive to mitigate the impacts of containment measures during public health emergencies on their businesses

Keywords: dynamic capabilities; SME performance; PLS-SEM; COVID-19 containment measures; developing economies

JEL Classification: M13

Resumen

El objetivo de este estudio es proporcionar información valiosa sobre los retos de contención a los que se enfrentaron las PYME ghanesas durante la pandemia de COVID-19 y cómo estos retos afectaron a los indicadores clave de rendimiento (KPI). Utilizando el enfoque de mínimos cuadrados parciales de modelización de ecuaciones estructurales (PLS-SEM), se examinan los datos recogidos de una muestra de 152 PYME ghanesas. Los resultados subrayan la influencia adversa de las medidas de contención relacionadas con la pandemia en los resultados financieros, el rendimiento de las ventas, la satisfacción de los empleados y la satisfacción de los clientes, al tiempo que revelan un aumento del compromiso en línea a medida que las PYME adaptaban sus modelos empresariales. Por lo tanto, este estudio destaca la importancia de reforzar las capacidades dinámicas, con especial atención a la transformación digital y el aprovechamiento de las plataformas en línea, como medio para mejorar la resistencia y la adaptabilidad de las PYME en medio de condiciones de contención difíciles. Las implicaciones teóricas enfatizan el papel crucial de las capacidades dinámicas en la navegación de la incertidumbre y la volatilidad durante las crisis, mientras que las implicaciones prácticas ofrecen una valiosa orientación para los propietarios de pequeñas empresas en las economías en desarrollo, ya que se esfuerzan por mitigar los impactos de las medidas de contención durante las emergencias de salud pública en sus negocios

Palabras clave: capacidades dinámicas; rendimiento de las PYME; PLS-SEM; medidas de contención COVID-19; economías en desarrollo

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1. Introduction

A crisis is a situation that poses an urgent threat to an individual, business, or society and necessitates a prompt and effective reaction (Morgan et al., 2022). The COVID-19 pandemic has severely impacted economies and organizations globally, requiring adaptation and resilience. The crisis posed myriad challenges as sweeping lockdowns and mobility restrictions disrupted supply chains and stifled demand in economies across the world (Bai et al., 2021; Coffie & Hinson, 2021; Papadopoulos et al., 2020). This severe economic fallout jeopardized enterprise sustainability, especially for vulnerable SMEs in developing countries, which play an indispensable role in employment, income generation, and GDP contributions (Bai et al., 2021; Owiredu, 2014).

While firm-level analysis of the real effects of COVID-19 is generally scarce, partly due to data limitations (Hu & Zhang, 2021), existing studies predominantly focus on the pandemic's devastating impacts in developed country contexts, including Europe, China, and the United States. Comparatively, there has been limited scholarly attention on how SMEs in the emerging markets of Africa, with limited fiscal firepower, have navigated the crisis and its constraints. Not only is there a gap in geographic coverage, but existing research predominantly focuses on assessing the financial performance of large corporations during the pandemic. These include examinations of stock market dynamics such as volatility (Baek et al., 2020; Phan & Narayan, 2020), liquidity (Just & Echaust, 2020), risk factors (Rizwan et al., 2020), and company returns (Narayan et al., 2021; Shen et al., 2020).

The limited studies on the impact of the pandemic and associated containment measures on businesses in emerging economies have also disproportionately focused on large organizations (Nhamo et al., 2020b; Yang et al., 2020). For instance, Amnim et al. (2021) examined the effects of the pandemic on the financial performance of medium to large firms listed on the Nigerian Stock Exchange. Consequently, there is a notable gap in research addressing the impact of containment measures on SMEs in developing economies.

Since previous studies have predominantly focused on the financial consequences of the containment measures on businesses, this study adopts a comprehensive approach by exploring a broader range of impact areas. Specifically, this study investigates the effects of the pandemic containment measures on KPIs ranging from financial performance to sales performance, customer satisfaction, employee satisfaction, and online engagement, shedding light on the multifaceted consequences of the COVID-19 pandemic containment measures on small businesses in Ghana—an understudied, lower-middle-income economy.

One of the commonly employed COVID-19 containment measures was the implementation of stay-at-home orders and lockdowns, placing restrictions on movement and non-essential activities (Brodeur et al., 2021). This study focuses specifically on the impacts of lockdowns and mobility restrictions given that these measures directly prevented customary in-person customer interactions and transactions, thus heavily disrupting standard business operations, especially for SMEs operating via traditional brick-and-mortar approaches.

This massive exogenous shock catalysed by lockdowns highlights the crucial importance of dynamic capabilities in navigating crises. Hence, this study is underpinned by the dynamic capabilities theory. Given the unique and unforeseen challenges posed by the pandemic, SMEs, often resource-constrained and reliant on traditional operational models, need to exhibit dynamic capabilities to navigate the uncertainties and adapt to the rapidly changing business landscape.

Dynamic capabilities theory explains how organizations can adaptively renew resources and reconfigure operational capabilities in response to sudden changes in the external environment (Teece et al., 1997). The theory suggests that enterprises that are able to swiftly adjust by realigning their business models, leveraging digital channels, implementing innovations in products or processes, and making necessary strategic changes stand the best chance of resilience (Wilden et al., 2016). Dynamic capabilities offer an apt theoretical lens for this study, given the unexpected, deep-rooted disruption faced by SMEs during the pandemic—requiring substantial operational modifications to enable survival. In the end, it is entrepreneurial resilience that distinguishes successful SMEs from those that fail to thrive (Ainoa-Gyarteng, 2023).

Given that capabilities empower businesses to revitalize and optimize their resources (Hou, 2008) and contribute to enhanced performance (Schilke, 2014), the findings of this study hold significant practical implications. Offering insights to managers of small and medium-sized enterprises and policymakers regarding the impact of COVID-19 containment measures on various performance indicators is instrumental in enabling the formulation of effective mitigation strategies for crisis survival.

Specifically, the results can aid small business owners in redefining the “new normal” to sustain operations throughout future adversity. Without tapping into dynamic capabilities to proactively adapt, small firms with limited resource buffers risk failure amid external shocks (Pooe & Munyanyi, 2019), as evidenced by the disproportionate impact of the pandemic. By spotlighting how small and medium Ghanaian enterprises can

leverage agility to navigate uncertainty, the study empowers entrepreneurs across other developing economies to unlock their dynamic capabilities to successfully manage future crises.

Thus, this study makes three main contributions to the literature. First, while previous research has predominantly examined the effects of the pandemic in developed markets, a notable gap persists in the literature on developing economies. The study seeks to address this void by investigating how pandemic-induced lockdowns and mobility restrictions influenced key performance indicators of SMEs in Ghana.

Second, departing from the predominant focus on financial performance, the study provides a more comprehensive evaluation framework encompassing customer satisfaction, employee satisfaction, sales performance, and online engagement—presenting a richer, multifaceted perspective on SME resilience. This study posits that the financial metric alone fails to sufficiently capture the nuances of survival for smaller firms facing deep-rooted operational disruption.

Finally, scant research has assessed pandemic containment measures through the theoretical lens of dynamic capabilities, despite the recognition of its role in enabling organizational resilience and adaptability amidst crises (Teece et al., 1997). This study helps bridge that gap by examining how Ghanaian SMEs leverage dynamic capabilities across areas like online engagement to mitigate performance impacts—both validating theory and offering practical lessons for entrepreneurs on strategies to cultivate crisis preparedness.

The remainder of the paper is structured as follows. The theoretical perspective related to this study is examined in the following section, and thereafter, the study's hypotheses are identified. The methodology, as well as the study's results, are detailed in the next part, followed by the findings, implications, and conclusions.

2. Theoretical Review and Hypotheses Development

This section covers the theoretical foundations of the study and the formulation of hypotheses.

2.1 Theoretical Framework

2.1.1 Dynamic capabilities theory

Since the release of Teece et al. (1997) seminal work, dynamic capabilities have garnered significant attention in research. Although various definitions have emerged, Teece et al. (1997) original definition remains highly influential (Feng et al., 2019). Dynamic capabilities, as per Teece et al. (1997), refer to a firm's ability to integrate, build, and reconfigure internal and external competencies swiftly in response to changing circumstances. SMEs, particularly during disruptive events like the COVID-19 pandemic, face challenges that threaten their survival (Bai et al., 2021). Addressing such challenges requires the development of dynamic capabilities, which Fainshmidt et al. (2017) argue is crucial for navigating complex situations.

Dynamic capabilities enable SMEs to identify opportunities, respond to threats, and enhance overall performance, thereby increasing the likelihood of survival (Cheng & Jin, 2019). Additionally, these capabilities help SMEs overcome resource limitations and improve competitiveness, contributing to their resilience (Zhang et al., 2019).

The use of dynamic capabilities is seen as a key factor in a firm's success amidst adversity (Bailey & Breslin, 2021). The ability to acquire new competitive advantages by updating competencies and organizational resources aligns with the dynamic capabilities perspective (Eisenhardt & Martin, 2000). In situations where time-to-market and product timeliness are critical, firms must continuously develop, adapt, and reconfigure competencies to align with the changing business environment.

Early and effective deployment of dynamic capabilities can provide a competitive advantage, particularly in challenging times like the COVID-19 era (Hernández-Linares et al., 2021). SMEs that leveraged their dynamic potential to reconfigure value-creation strategies early on had a greater chance of survival during the COVID-19 pandemic (Hernández-Linares et al., 2021). Dynamic capabilities theory offers an apt lens for this study given its focus on how organizations strategically renew resources and reconfigure capabilities to address disruptive environmental shifts. Specifically, three key dynamic capabilities hold relevance for SMEs navigating COVID-19 containment challenges: digital transformation, innovation adaptation, and strategic flexibility.

Digital transformation entails leveraging technologies to modify business models, enhance processes, and unlock new growth opportunities (Warner & Wäger, 2019). By rapidly adopting digital channels and e-commerce, SMEs could reach customers despite mobility restrictions and sustain sales. Innovation adaptation involves continuously developing new offerings and revenue streams attuned to evolving demand (Zhou et al., 2005). SMEs innovating products, services, and experiences could mitigate fallout from traditional operation

constraints. Finally, strategic flexibility reflects the capability to promptly adapt plans, resource allocations, and asset configurations in response to uncertainty (Shimizu & Hitt, 2004). This enables agile SMEs to reconfigure business models, realigning operations to new realities.

By drawing on dynamic capabilities theory, this study examines how the activation of change-embracing organizational capacities influences SME resilience amid containment challenges.

2.2 Research Hypothesis Development

2.2.1 SME Performance

Firm performance has emerged as an important term in management research, typically serving as a dependent variable. Although it is a widely used concept in academic circles, there is little agreement on its definition and measurement (Taouab & Issor, 2019). According to Coase (2009), performance is a catch-all term that refers to various ideas, including growth, profitability, return, productivity, efficiency, and competitiveness. The notion of performance, according to Bartoli and Blatrix (2015), should be attained by factors including efficiency, effectiveness, and quality. Such variables will undoubtedly lead to an increase in financial metrics like return on assets and return on investment.

In the context of SMEs, it is critical to employ a combination of financial and non-financial criteria to analyse firm performance (Boohene et al., 2019). In this study, financial performance, sales performance, customer satisfaction, employee satisfaction, and online engagement are used to measure the performance of SMEs.

2.2.2 COVID-19 Containment Measures and Financial Performance of SMEs

The COVID-19 pandemic prompted comprehensive containment measures, including business closures, mobility restrictions, and social distancing, instituted to mitigate viral transmission (Bartik, Bertrand, et al., 2020; Coibion et al., 2020). As a result, there was a drastic decrease in consumer spending, leading to a sudden and significant decline in revenue for SMEs (Mendez-Carbajo, 2021). This decline in revenue caused various challenges for SMEs, including working capital distress, deferred growth plans, and depleted cash reserves (Brown et al., 2020). As Rababah et al. (2020) argue, in the aftermath of a crisis, there is a tendency for individuals to exhibit caution when it comes to investing. This cautious behaviour leads to a decrease in the overall amount of money flowing into the financial system. Consequently, the reduced availability of funds negatively impacts the level of economic activity.

One of the significant difficulties faced by SMEs was the lack of digitally integrated processes and remote work arrangements, which hindered their ability to adapt quickly to new circumstances (He & Harris, 2020). Inflexibly tethered to in-person interactions, small firms often had difficulty pivoting to remote operations without the dynamic capabilities underpinning strategic renewal (Nhamo et al., 2020a). Those who were able to leverage technologies, e-commerce, and contactless processes to creatively serve customers likely managed revenue stability better (Soto-Acosta, 2020).

The containment measures impacted both the supply and demand sides of the economy, particularly affecting SMEs. On the supply side, lockdowns and quarantines resulted in a further decrease in labour capacity utilization and interruptions in supply chains, leading to shortages of parts and intermediate goods. On the demand side, there was a sudden loss of demand and revenue for SMEs due to reduced consumer spending, fear of contagion, and increased uncertainty, which resulted in decreased spending and consumption (OECD, 2020a).

Overall, the analysis of existing literature suggests that unfavourable events, such as the COVID-19 pandemic and ensuing containment measures, generally lead to a decline in the financial performance of firms (Jordà et al., 2020). Based on the above analysis, we hypothesize that:

H1: *The COVID-19 pandemic and the associated containment measures negatively influenced the financial performance of SMEs.*

2.2.3 COVID-19 Containment Measures and Sales Performance of SMEs

The containment measures implemented during the COVID-19 pandemic have had a significant negative impact on the sales performance of SMEs. This is grounded in the evidence that containment measures such as lockdowns and social distancing mandates have led to a drastic decrease in consumer spending, resulting in a sudden and significant decrease in sales for SMEs (Hasanat et al., 2020; Prihatiningtias & Wardhani, 2021). The containment policies also led to abrupt disruptions in global supply chains and mass closures of retail establishments, restaurants, and other consumer-facing businesses (Hasanat et al., 2020). With fewer avenues open for discretionary spending along with elevated health concerns and unemployment, aggregate consumer

demand plunged (Tao et al., 2022). Consequently, firms across many industries experienced sudden and steep declines in sales performance.

The negative impact on sales performance during the COVID-19 pandemic was not limited to one specific geographical region. For example, a survey of 2,500 small enterprises in the United States found a 29% average drop in sales at the peak of the downturn in the second quarter of 2020 (Bloom et al., 2021). Similarly, in China, 14.6% of firms reported that they could not survive beyond one month due to steep revenue declines (Muhamad, 2022). In Pakistan, 89% of SMEs experienced falling sales, contributing to an aggregate 0.4% drop nationwide (Naqvi, 2020; ADB, 2020). The severity and duration of containment measures correlate positively with the impact on SMEs' sales performance. Longer and more severe measures resulted in greater declines in consumer spending and, consequently, a more significant impact on SMEs' sales performance (Bloom et al., 2021).

However, the ability of SMEs to adapt to the new operating conditions imposed by containment measures can moderate the impact on sales performance. SMEs that quickly adjusted to the "new normal" and found new operating niches were less negatively impacted compared to those that were unable to adapt (Muhamad, 2022). Based on the aforementioned, this study proposes that:

H2: *The COVID-19 pandemic and the associated containment measures negatively influenced the sales performance of SMEs.*

2.2.4 COVID-19 Containment Measures and Customer Satisfaction of SMEs

The COVID-19 pandemic containment measures (e.g., lockdowns, capacity limits, social distancing rules) negatively impacted customer satisfaction levels at SMEs. This can be attributed to the added inconvenience for consumers from restricted operations and public anxiety over viral transmission (Srivastava & Kumar, 2021). Many SMEs had to pivot to online or virtual services to stay in business, potentially leading to changes in the quality of service that clients receive (Arora et al., 2020). Customers may have altered expectations or may have noticed changes in the quality of service as a result of the containment measures. Businesses had to adjust their standard operating procedures. This increased service failures and decreased customer satisfaction (Srivastava & Kumar, 2021).

It is expected that more severe and longer-lasting containment measures will be associated with lower customer satisfaction (Bao & Lewbel, 2022). However, the degree of impact will depend on an SME's ability to adapt through enhancing digital capabilities, contactless options, or novel operating procedures (Singh et al., 2020). SMEs that implemented adjustments by increasing online interfaces and delivery options saw improved customer experience (Singh et al., 2020). Therefore, SMEs able to innovate despite containment barriers retained higher satisfaction levels (Karlsson et al., 2021).

Customer satisfaction, defined as the customer's judgment of product or service attributes (Davras & Caber, 2019), is critical for businesses. As loyal consumers become less price-sensitive and satisfied customers do not migrate to competitors, improved financial outcomes for SMEs are a result of increased customer happiness (Xu & Li, 2016). Unsatisfied clients often engage in whining and negative word-of-mouth promotion (Cheng et al., 2005). In most marketplaces, customer happiness and loyalty are major differentiators between good and bad-performing organizations. Satisfaction leads to loyalty, and loyalty leads to high business performance (Hill et al., 2017). A company's marketing initiatives are frequently motivated by a perspective on developing, maintaining, or enhancing customers' loyalty to its products and services (Dick & Basu, 1994).

Survey data from Canada showed 60% of SME patrons reporting worsened firm service quality during COVID restrictions (Karlsson et al., 2021). An Indian study pointed to containment measures decreasing client happiness due to interrupted schedules, lack of staff, and general frustration over health protocols (Srivastava & Kumar, 2021). The pandemic clearly challenged SMEs to maintain standards, requiring strategic adaptations to bolster consumer contentment. Consequently, this study posits that:

H3: *The COVID-19 pandemic and the associated containment measures negatively influenced SMEs' customer satisfaction.*

2.2.5 COVID-19 Containment Measures and Employee Satisfaction of SMEs

Employee satisfaction is the cornerstone of a thriving organizational culture. When employees are content with their work and environment, they are more likely to be engaged, motivated, and productive (Singh & Jain, 2013). This translates to increased customer satisfaction, enhanced innovation, and overall organizational success (Seppala & Cameron, 2015). However, the COVID-19 containment measures presented significant challenges to this relationship, pushing businesses and their employees to adapt to a rapidly changing landscape (Shan & Tang, 2020).

For example, social distancing regulations mandated remote work for many employees, limiting typical workplace interactions and collaboration (Wang et al., 2021). Studies have found that these sudden changes decreased employee satisfaction across multiple domains including connectedness, communication, resource access, and work-life balance (Baert et al., 2020). Additionally, safety policies in the workplace, such as mask mandates, occupancy restrictions, and increased sanitization procedures, also negatively impacted employee well-being and attitudes (Mertens et al., 2020). Furthermore, the economic uncertainty created by COVID-19 containment policies increased job insecurity and exacerbated stressors such as financial concern, anxiety, and burnout among employees. These factors contribute to decreased job satisfaction, performance, creativity, and citizenship behaviours (Belzunegui-Eraso & Erro-Garcés, 2020).

Though COVID-19 containment measures have presented significant challenges, research indicates that organizations can take steps to mitigate declines in employee satisfaction and well-being. Providing transparent communication and empathy around evolving workplace policies can promote trust, clarity, and connectivity (Kniffin et al., 2021). Additionally, supplying the necessary technology, training, and remote workplace resources demonstrates organizational support and facilitates effective telecommuting arrangements (Allen et al., 2014). Adapting performance management and work processes to be more flexible and collaborative can also help account for the personal and professional disruptions employees face during times of crisis (Brynjolfsson et al., 2020).

To summarize, while firms may offset the negative impact of COVID-19 and its accompanying containment measures by providing enough support and adapting their procedures to the growing needs of their workforce, employee satisfaction was significantly negatively impacted. Accordingly, this study posits that:

H4: *The COVID-19 pandemic and the associated containment measures negatively influenced SME's employee satisfaction.*

2.2.6 COVID-19 Containment Measures and Online Engagement of SMEs

The digital economy is rapidly evolving, with online platforms increasingly influencing all sectors (OECD, 2020b). For instance, e-commerce in the United States increased from 0.6% of total retail sales in 1999 to 16.1% in the second quarter of 2020 (U.S. Census Bureau, 2020). This trend has accelerated due to the COVID-19 pandemic and associated social isolation measures, driving increased adoption of e-commerce and digital technologies by businesses (Arora et al., 2020). This is supported by Rodriguez and Boyer (2020), who suggest that, in response to the COVID-19 pandemic and the need for social distancing measures, many companies are shifting towards remote work and virtual operations. This transition involves leveraging technology and digital platforms to facilitate communication, collaboration, and the delivery of products and services. According to Nguyen et al. (2021), the rapid shift to organization-wide remote work due to COVID-19 lockdowns enabled many companies to keep operating despite unprecedented disruptions. Hence virtual work capabilities allow organizations to balance employee safety, operational resilience, and financial sustainability (Nguyen et al., 2021).

As evidenced by McKinsey & Company (2020), strategic investment in virtual work capabilities and shifts towards remote arrangements allowed businesses to maintain essential functions while also providing for employee health, satisfaction, and work-life balance during an extremely challenging societal crisis. Generally, SMEs that leverage online platforms experience benefits such as cost efficiencies, market intelligence access, and reduced information asymmetry. Transitioning business functions like transactions, inventories, and communications online reduces recurring overhead expenses associated with traditional brick-and-mortar establishments (OECD, 2020a).

In summary, the COVID-19 containment measures had a significant impact on the business landscape, underscoring the critical role of online engagement for SMEs. While these measures posed challenges, they also served as incentives for digital transformation, presenting opportunities for businesses to adapt and thrive (UNCTAD, 2022). SMEs were forced to make drastic adjustments to their business practices, highlighting the crucial role of dynamic capabilities and their capacity to utilize or enhance online engagement to seize new opportunities in a challenging environment (Epler & Leach, 2021). Consequently, this study posits that:

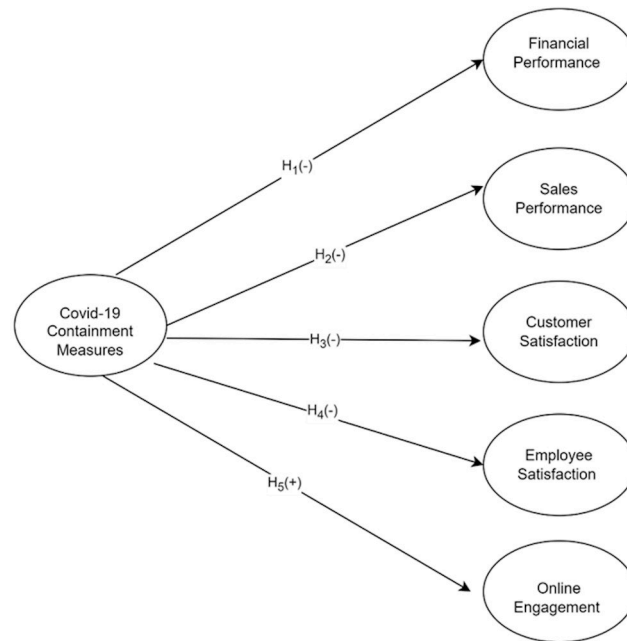
H5: *The COVID-19 pandemic and associated containment measures had a positive influence on online engagement for SMEs.*

2.2.7 Conceptual Framework

Figure 1 provides a summary of the hypotheses identified in the theoretical review. H1 hypothesizes that the COVID-19 containment measures negatively influenced the financial performance of SMEs. H2 hypothesizes that the COVID-19 containment measures negatively influenced the sales performance of SMEs. H3 hypothesizes that the COVID-19 containment measures had a negative influence on the customer satisfaction of SMEs. H4 hypothesizes that the COVID-19 containment measures had a negative influence on employee

satisfaction of SMEs. H5 hypothesizes that the COVID-19 containment measures had a positive influence on the online engagement of SMEs.

Figure 1. The Conceptual Research Model



Source: Authors' own work

3. Methodology

The study employed a quantitative explanatory technique to address the research problem, as the study's objectives explicitly required quantification of effects and correlations (Allwood, 2012). Furthermore, the cross-sectional design option was chosen, which has been endorsed by researchers like Allwood (2012) and Creswell et al. (2003) as the optimal approach for evaluating relationships between variables assessed as constructs in the social sciences.

3.1 Population and Sampling

The study's general population comprised all SMEs in Ghana's Kumasi metropolis registered with the Ghana Enterprise Agency (GEA). According to GEA, a small enterprise is defined as having 5 to 29 employees, with a total asset base (excluding land and buildings) not exceeding the value of \$100,000. A medium enterprise, on the other hand, has 30 to 99 employees, with a total asset base (excluding land and buildings) not exceeding \$1 million (Amoa-Gyarteng, 2021). The total population consisted of 3,156 SMEs. Glenn's (1992) formula for calculating representative samples was then applied to determine the sample size.

$$no = z^2 pq / e^2$$

Where: *no* = sample size; *z* = confidence level; *p* = variability in population; *q* = 1-*p*; *e* = level of precision.

With a confidence level of 95% (*z* = 1.965), a population variability of 0.5, and a precision of 5%, the calculated sample size was 215. Using a systematic sampling procedure, SMEs for the study were selected based on this predetermined sample size.

3.2 Development of the Questionnaire and Data Collection

Measures of the research constructs were derived from extant literature and adapted to fit the nature of this study. Two of our colleagues reviewed the wording of the questionnaire to ensure that the measures were valid for the constructs. The survey was then piloted with 10 SME managers, and some questions were modified based on their input. For the study, a two-section questionnaire was created. In the first section, there were inquiries asking for fundamental demographic data, including the gender of the respondent, the nature of the business, the number of years the business has been in operation, the respondent's highest level of education, the type of business ownership, and the number of employees.

The second section contained the constructs measuring the main variables. In this section, the questions centered on how SMEs had performed since the introduction of COVID-19 containment measures in Ghana.

Respondents were requested to express their level of agreement or disagreement with various comparative statements to gauge the impact of COVID-19 containment measures on their respective firms. Each response option corresponded to a distinct level of impact, enabling respondents to convey the extent to which their organizations have been affected.

In the research model, 'COVID-19 Containment Measures' is presented as the main independent variable. Following the approach of Atayah et al. (2022) and the pivotal work of Najaf et al. (2021), a dummy variable (COVID) was generated, where the value of '1' was assigned to all observations made throughout the years 2020 and 2021, while '0' was assigned to the immediate years (2018 and 2019) preceding the COVID-19 period. The years 2018 and 2019 served as a baseline or pre-COVID period, allowing the researchers to establish a comparative reference point for the subsequent pandemic years (2020 and 2021). Questions related to financial performance, sales performance, customer satisfaction, employee satisfaction, and online engagement are structured to capture the respondents' perceptions or experiences during both periods.

Building on the work of Ellinger et al. (2002), this study evaluates the financial performance of SMEs using perceptual performance measures. Unlike Ellinger et al. (2002), where financial ratios like ROE and ROA were employed, this study adapted these financial ratios to incorporate measures such as gross profit margin and working capital.

Sales performance and customer satisfaction were assessed using the scale created by Behrman and Perreault (1982), which comprises Likert-type items set on a 5-point scale, ranging from 'Significantly Negative' to 'Significantly Positive'. This is a departure from the original scale, which included the anchors 'Needs Improvement' and 'Outstanding'. To measure employee performance, this study utilizes the Job Satisfaction Survey (JSS) created by Spector (1985). The JSS incorporates items assessing the impact of the pandemic and its containment measures on operating procedures, as well as gauging employees' satisfaction with compensation, both in the periods preceding and during the COVID-19 pandemic.

For measuring Online Engagement, this study adapts items from Yee-Loong Chong et al. (2014). Notable items include statements such as 'Assessing the periods before and during the COVID-19 pandemic, the degree to which our website is utilized for information provision and client interaction increased amid COVID-19' and 'Evaluating the periods before and during the COVID-19 pandemic, our website traffic saw an uptick during COVID-19 restrictions'. Respondents assess these aspects on a 5-point scale, ranging from strongly disagree to strongly agree.

To reduce the bias of this subjective measurement, only owners or managers were asked to complete this section of the questionnaire, as they are intimately familiar with the real performance of their SMEs. To assist with data gathering, three research assistants were hired. The data collection process spanned approximately one month, conducted throughout December 2021. Respondents who were unable to complete the questionnaire within this timeframe were provided an additional two weeks for submission. By the end of the specified period, a total of 152 responses, accounting for 70% of the 215 total responses, were received. This meets the recommendations of researchers like Williams (2011) and Allwood (2012), who believe that a response rate should not be less than 50% of the sample size.

3.3 Data Processing and Analysis

The data gathered from respondents were coded, cleaned, and prepared for analysis. Initially, the data were examined using Statistical Package for Social Sciences (SPSS) version 25, including tests for missing values, descriptive statistics, and multivariate analytic assumption testing. Subsequently, the collected data were imported into Smart PLS version 3 for multivariate data analysis and inferential statistics. The partial least squares approach to structural equation modelling (PLS-SEM) was selected as the preferred method for data analysis for several reasons: (i) the data met the criteria for multivariate data analysis, (ii) PLS-SEM can model latent concepts as multi-item measurement constructs, and (iii) PLS is suitable for predictive models with both small and large samples, maximizing the explained variance of multiple interrelated concepts (Hair et al., 2017; Sarstedt et al., 2020).

3.4 Measurement and Structural Model Assessment of the PLS-SEM

The two-step data analysis approach for PLS-SEM was followed, as recommended by Hair et al. (2017). In the first step, the reliability and validity of the measurement model were assessed. Reliability was evaluated using factor loadings, Cronbach's alpha, composite reliability, and Average Variance Extracted (Hair et al., 2017). Table 1 presents a summary of the results from the reliability and validity tests.

Table 1 presents an evaluation of the reliability of the measurement scale, indicating the extent to which measurement items could be replicated in another study. This assessment utilized Cronbach's alpha (α) and Composite reliability (C.R.), with all items surpassing the recommended threshold of 0.7 (Sarstedt et al.,

2020). Additionally, convergent validity, which measures the extent to which items come together to measure the constructs, was assessed using Average Variance Extract (AVE).

Table 1. Measurement Model

Construct Code	Factor Loadings	Cronbach's Alpha (α)	CR	AVE
Financial Performance (FIN)				
FIN1	0.956	0.961	0.974	0.927
FIN2	0.972			
FIN3	0.960			
Sales Performance (SALE)				
SALE1	0.900	0.921	0.944	0.809
SALE2	0.878			
SALE3	0.919			
SALE4	0.901			
Customer Satisfaction (C.S.)				
CS2	0.973	0.975	0.984	0.953
CS3	0.979			
CS4	0.976			
Employee Satisfaction (E.S.)				
ES1	0.887	0.934	0.958	0.884
ES2	0.967			
ES3	0.966			
Online Engagement (O.E.)				
OE1	0.949	0.978	0.984	0.939
OE2	0.979			
OE3	0.971			
OE4	0.977			
COVID-19 Containment Measures (CCM)				
CCM1	0.943	0.936	0.955	0.840
CCM2	0.956			
CCM3	0.909			
CCM4	0.856			

Source: Authors' construct (2023)

The results, as displayed in Table 1, indicate that the constructs exceed the recommended 0.5 threshold, suggesting the achievement of convergent validity (Hair et al., 2017; Sarstedt et al., 2020). To assess discriminant validity, both the Fornell and Larcker (1981) criterion and the more robust HTMT technique were employed, highlighting the uniqueness of the items in measuring their intended constructs. According to the Fornell-Larcker criterion, measures demonstrate acceptable discriminant validity if the square root of the AVEs for each factor (diagonal values) is higher than the pair-wise correlation between the factors (off-diagonal values).

Table 2. Discriminant Validity (Fornell & Larcker, 1981) Approach

	CCM	CS	ES	FIN	OE	SALE
CCM	0.917					
CS	0.546	0.976				
ES	0.549	0.678	0.940			
FIN	0.367	0.624	0.505	0.963		
OE	0.524	0.744	0.673	0.580	0.969	
SALE	0.561	0.797	0.689	0.642	0.702	0.900

Source: Authors' construct (2023)

The results in Table 2 demonstrate that discriminant validity was achieved, as the diagonal values are higher than the off-diagonal values.

The results in Table 3 indicate that all values are well within the strict HTMT requirement, being smaller than 0.9. This implies that discriminant validity was also achieved from the HTMT standpoint.

Table 3. Discriminant Validity Based on HTMT Criterion

	CCM	CS	ES	FIN	OE	SALE
CCM						
CS	0.571					
ES	0.586	0.710				
FIN	0.385	0.642	0.531			
OE	0.546	0.761	0.704	0.597		
SALE	0.601	0.841	0.742	0.683	0.741	

Source: Authors' construct (2023)

4. Analysis and Results

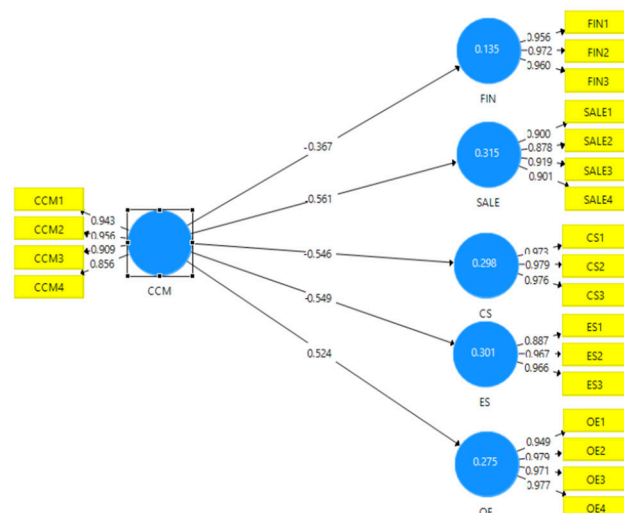
The hypothesized paths in the study were analyzed using the structural model after the measurement model was evaluated for reliability and validity. The direct relational effect of COVID-19 and the ensuing containment measures on the key performance measures of financial performance, sales performance, customer satisfaction, employee satisfaction, and online engagement was tested using PLS-SEM to ascertain path significance and the strength of the hypothesized paths denoted by path coefficients (β) (Aguinis et al., 2017). The results are displayed in Table 4.

Table 4. The Hypothesized Structural Paths

Hypothesis	Hypothesized paths	Beta (β)	t-value	P-value	Remark
H1	CCM -> FIN	-0.367	10.270	0.000	Supported
H2	CCM -> SALE	-0.561	20.054	0.000	Supported
H3	CCM -> CS	-0.546	19.070	0.000	Supported
H4	CCM -> ES	-0.549	18.747	0.000	Supported
H5	CCM -> OE	0.524	18.511	0.000	Supported

*** p < .001; ** p < .01; * p < 0.05

From Table 4, the results show that all the hypothesized paths, as posited in the study, were supported. Specifically, H1, which suggests that the COVID-19 containment measures negatively influence the financial performance of SMEs, was supported ($\beta = -0.367$, t-value = 10.270, $p < .001$). Hypothesis (H2), which posits a significant negative association between COVID-19 containment measures and the sales performance of SMEs, was also supported ($\beta = -0.561$, t-value = 20.054, $p < .001$). Additionally, the study found support for the hypothesized path, H3, which suggests a negative and significant association between COVID-19 containment measures and the satisfaction of customers ($\beta = -0.546$, t-value = 19.070, $p < .001$). H4 posited that COVID-19 containment measures significantly influence employee satisfaction negatively. This proposition was supported ($\beta = -0.549$, t-value = 18.747, $p < .001$). As displayed in Table 4, the structural results also show that the hypothesized path, which suggests a positive and significant relationship between COVID-19 containment measures and online engagement, was supported ($\beta = 0.524$, t-value = 18.511, $p < .001$).

Figure 2. Structural Model

5. Discussion and Conclusions

The primary objective of this study was to illuminate the containment challenges encountered by Ghanaian SMEs amid the unprecedented disruption of the COVID-19 pandemic and provide data-driven insights into how these challenges ultimately affected key performance indicators. The results reveal the difficulties posed by restrictive safety policies in significantly hindering financial performance, sales performance, customer satisfaction, and employee satisfaction. However, the findings suggest a discernible positive association between the adoption of COVID-19 containment measures and the amplified online engagement of SMEs, indicative of evolving dynamic capabilities within these businesses. This association underscores not only a response to external challenges but also the development of adaptive strategies, reflecting the dynamic capabilities that SMEs have cultivated in the face of the pandemic.

The study's findings concerning the negative association between COVID-19 containment measures and the financial performance of SMEs align with previous scholarly investigations, notably observed in the works of Bartik et al. (2020a) and Humphries et al. (2020). Bartik et al. (2020a) conducted an examination that highlights the financial pandemic vulnerability experienced by numerous businesses during the COVID-19 pandemic. Their study reveals that the median firm with monthly expenses exceeding \$10,000 had a cash reserve sufficient for only two weeks, while three-quarters of the surveyed businesses could sustain their operations for no more than two months. In a similar vein, Humphries et al. (2020) conducted an extensive analysis of small business revenue data across several cities in the United States. Their findings underscore a significant decline in revenues and cash balances, providing a clear indication of the profound economic impact faced by small businesses during the pandemic. The convergence of these research findings substantiates the broader academic discourse surrounding the adverse financial repercussions endured by SMEs as a result of the implementation of COVID-19 containment measures.

The negative relationship between COVID-19 containment measures and SMEs' financial performance can be attributed to disruptions in regular business operations, reduced consumer demand, and constraints on physical operations imposed by lockdowns and social distancing measures. These restrictions, aimed at curbing the spread of the virus, often entailed large short-term economic costs (Deb et al., 2020). Additionally, limited access to financial resources and heightened uncertainty during the pandemic exacerbated the challenges faced by SMEs, contributing to the observed negative impact on their financial performance.

The findings of this study, which reveal a negative relationship between COVID-19 containment measures and sales performance, align with the results of previous research conducted by Hassan et al. (2020) and Apedo-Amah et al. (2020). Hassan et al. (2020) analysed the performance of SMEs in multiple countries during the COVID-19 pandemic as well as previous pandemics. The study identified significant declines in revenue, particularly in sectors such as tourism. Similarly, Apedo-Amah et al. (2020) conducted a comprehensive assessment of the short-term impact of the COVID-19 pandemic on businesses worldwide, with a specific focus on developing countries. Their research demonstrated that the shock caused by COVID-19 had severe and widespread effects on firms, resulting in a persistent negative impact on sales.

The negative relationship between COVID-19 containment measures and sales performance, as elucidated by the study's findings, can be attributed to several interrelated factors. The stringent restrictions and lockdown measures implemented to curb the spread of the virus led to disruptions in normal business operations, reduced consumer mobility, and an overall decline in economic activity. Additionally, heightened economic uncertainty and changes in consumer behaviour during the pandemic further contributed to a reduction in demand, influencing the observed negative association between COVID-19 containment measures and sales performance (Li et al., 2022).

While the study indicates a negative relationship between COVID-19 containment measures and customer performance, Sun et al. (2022) present a contrasting perspective. They find that, generally, customers exhibit higher tolerance and are more inclined to provide favourable ratings, emphasizing the importance of hotels' prevention and control measures in reducing health risks post-COVID-19. On the other hand, our findings align with those of Brandtner et al. (2021). The negative association between COVID-19 containment measures and customer performance could be attributed to disruptions in normal business operations, decreased consumer mobility, and behavioural shifts as a result of pandemic-related uncertainty, all of which influence customer engagement and satisfaction. Furthermore, rigorous measures such as lockdowns may impede in-person contacts and transactions, contributing to the documented negative effect on customer performance.

The present study's identification of a negative association between COVID-19 containment measures and employee satisfaction in SMEs is consistent with prior research, as exemplified by the studies conducted by Bakar et al. (2022) and Bajrami et al. (2021). These studies also observed a similar trend, indicating that employees experienced dissatisfaction with remote work during the COVID-19 period. Several factors contributed to this dissatisfaction, including constant work pressure, extended working hours, limited interaction with colleagues, repetitive tasks, and domestic pressures.

Furthermore, job insecurity and instability amid the COVID-19 pandemic have been found to have a significant influence on employee competitiveness. This positive influence was highlighted in the research conducted by Nemteanu et al. (2021), which demonstrated that job instability had a significant negative effect on individual work satisfaction, supervisor support, and promotion opportunities. These findings further emphasize the challenges faced by employees during the COVID-19 period and the impact of job insecurity on various aspects of their work experience.

The study's findings, which reveal a noticeable positive correlation between the implementation of COVID-19 containment measures and increased online engagement among SMEs, are supported by the research conducted by Abuhussein et al. (2023). Abuhussein et al. (2023) specifically explore how Jordanian SMEs have adapted to navigate the changes in the business landscape brought about by the COVID-19 pandemic. The study aligns with the conclusions of García-Santiago (2021), illustrating that Spanish SMEs adeptly utilized digital marketing strategies to engage users on social networks, both during and after the COVID-19 lockdowns. The increased online engagement observed among SMEs during the COVID-19 containment measures can be attributed to several significant factors.

Firstly, SMEs swiftly adapted to digital platforms as a proactive response to the imposed physical restrictions. They strategically utilized websites, social media, and online channels to ensure operational continuity during the pandemic. This adaptation enabled SMEs to maintain communication with customers, promote their products or services, and facilitate online transactions.

Additionally, the shift in consumer behaviour, driven by lockdowns and social distancing measures, compelled SMEs to strengthen their online presence. Consumers, more reliant on digital channels, increasingly turned to online platforms for their purchasing needs. SMEs recognizing this trend focused on enhancing their online visibility, accessibility, and user experience to effectively cater to the evolving preferences of a digitally savvy clientele.

The combination of SMEs' swift adaptation to digital platforms and the changing consumer behaviour resulted in heightened online engagement. SMEs that effectively capitalized on these opportunities were able to maintain customer relationships, attract new customers, and sustain business operations even in the face of physical constraints imposed by COVID-19 containment measures.

In summary, the COVID-19 pandemic, along with its associated containment measures expedited the adoption of online engagement strategies and the development of digital dynamic capabilities among SMEs. This surge in digital innovation and agility played a pivotal role in enhancing organizational resilience, effectively mitigating the potential severity of SME performance declines (Deb et al., 2020) originally anticipated due to the impacts of COVID-19 containment measures. This provides a valuable blueprint for building the robustness of SMEs against future crises similar to COVID-19 and associated containment measures.

6. Contributions and Implications

This study adds to the body of knowledge on the impact of COVID-19 containment measures on SME performance, particularly in emerging economies like Ghana. By focusing on the experiences of SMEs in this context, the study fills a gap in the literature that has predominantly centred on industrialized economies. The study underscores the importance of dynamic capabilities for SMEs in navigating uncertainty and volatility induced by crises such as the COVID-19 pandemic and the ensuing containment measures.

The study extends the concept of dynamic capabilities to the specific context of containment challenges and public health crises. This extends the understanding of dynamic capabilities and their relevance to SMEs facing operational challenges. Thus, the study emphasizes the role of agility, adaptability, and the ability to pivot business models as key strategies for enhancing resilience during times of crisis. The findings suggest that SMEs that can swiftly adjust their offerings or operational approaches in response to evolving market conditions are not only more likely to survive but also to thrive in challenging circumstances.

The study's practical implications underscore the importance of SME owners adopting a proactive, agile, and adaptable approach. Owners are encouraged to prioritize the development and utilization of dynamic capabilities to enhance resilience and adaptability during challenging conditions. Embracing new technologies, including digital tools and platforms, is crucial for facilitating business operations and reaching customers. Transitioning to e-commerce and exploring innovative ways to connect with clients can empower SMEs to thrive in adverse circumstances.

By embracing digitalization and leveraging online channels, SMEs can also expand their customer base, diversify revenue streams, and mitigate the negative impacts of physical restrictions. Businesses that are able to pivot quickly in response to changing conditions have a higher likelihood of not only surviving but also thriving in challenging circumstances.

The study's identification of an increase in both employee and customer dissatisfaction during the pandemic highlights significant challenges faced by small businesses. This finding underscores the importance of addressing these issues to maintain a positive work environment and enhance overall productivity. A practical recommendation is to offer counselling services to employees. This proactive strategy can help mitigate the impact of stress on employees and improve their well-being. By addressing the mental and emotional needs of staff, businesses can create a supportive work environment that promotes job satisfaction and engagement.

Additionally, the study highlights the decline in sales performance as a result of the containment measures. This finding directly impacts the financial viability of small businesses. To address declining sales, businesses can consider several strategies, including digital transformation, enhanced customer relationship management, and prudent financial management.

7. Limitations and Further Research

There are some limitations to this study that open avenues for additional research. Firstly, all metrics used are subjective and provided by SME managers and owners, potentially introducing method bias. Additionally, essential factors influencing firm dynamic capabilities, such as sensing, learning, integrating, and coordinating, are not explored. Future research could investigate how these interconnected elements mitigate the impact of adversity on SME performance.

Another limitation is the lack of granular data on specific containment measures, such as lockdowns, travel restrictions, social distancing rules, and hygiene protocols. Consequently, the study could not analyse the individual impact of each measure on SME performance. Future research could survey SMEs using targeted questions designed to elucidate how the operational aspects and day-to-day functioning of small businesses were influenced by each distinct containment intervention.

Lastly, the study was conducted only in Kumasi, Ghana, limiting the generalizability of its conclusions to all SMEs in the country. Moreover, the proportion of SMEs included in the study, compared to all businesses in the research area, is modest. To enhance generalizability, future research could be extended to other cities, regions, and emerging economies.

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