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SMME Crisis Resilience Strategies During COVID-19: A Botswana Perspective

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ABSTRACT

This study investigated the resilience strategies utilised by SMMEs in Botswana during COVID-19. It sought to establish the extent of usage in general and across SMME sectors, and the associations between resilience strategies and the key challenges previously described. Data was collected from SMMEs in Gaborone, Francistown and surrounding areas. It was found that a range of resilience strategies were used. The most utilised were, in order, strategic resilience strategies, technological resilience strategies, communication resilience strategies, and operational resilience strategies. The most used resilience strategies, per category, were monitoring of the competitive environment, investing in digital tools, transparency with stakeholders, and flexible staffing solutions respectively. Resilience strategy usage exhibited one-to-many and many-to-many patterns. The former may enhance focus and efficiency in resource utilisation. Access and usage of government initiatives was only 38.29%. The reasons for this need further investigation to help improve future uptake of government initiative among SMMEs.

1. Introduction

The widespread negative impact of the COVID-19 pandemic on businesses and other facets of our lives has been widely reported on (World Health Organization, 2020). These have identified Small, Micro and Medium-sized Enterprises (SMMEs) as particularly vulnerable entities, assailed by numerous challenges threatening their continued existence. SMMEs in Botswana experienced unique challenges as reported by Chaurura & Dar (2024). The most important challenges were found to be financial, technological, and human resource challenges (Chaurura & Dar, An Evaluation of the Nature and Extent of Challenges Encountered by Small, Medium, and Micro Enterprises (SMMEs) in Botswana During COVID-19, 2024). This study aims to determine the resilience strategies utilised by SMMEs in Botswana to mitigate the negative impact of the challenges they experi-

enced during the pandemic. Further, the study will explore the extent of utilisation, and the associations between resilience strategies and the previously identified challenges.

SMMEs resilience is an important aspect in the economic robustness and endurance of developing economies such as that of Botswana. They contribute significantly to the Gross Domestic Product (GDP) and employment generation; therefore their survival and growth is of paramount importance (International Labour Organisation, n.d.; United Nations Development Programme, 2020). Consequently, a review of the resilience strategies they use especially in crisis times is essential in informing SMME survival. The COVID-19 pandemic provides an ideal capsule reflecting the business environmental from which important lessons in SMME resilience can be extracted. The cross-cutting factors and dynamics involved in the resilience phenomenon across different crises means that universal, or almost universal, evidence-based resilience strategies can be formulated to enhance SMME resilience during future crises regardless of their type or nature. This is even more crucial in view of recent media reports asserting that seasonal surges of COVID-19 infections are in fact our 'new normal' (DUCHARME, 2024). In July 2024, leading media houses reported that Joe Biden, the previous president of the United States tested positive for COVID-19 and had to suspend his campaign activities temporarily to recover (Alvarez, Judd, & Blackburn, 2024). Reports from other authoritative sources state that COVID-19 infections are on the increase, though with less fatalities (Centers for Disease Control and Prevention, 2024). Other crises which may require similar responses to the COVID-19 pandemic including, but not limited to; El Nino, the phenomenon currently causing droughts, floods, and extremely cold weather strengthens the prediction that future crisis requiring SMMEs to be more resilient are a strong possibility. This makes the need for the current and related future studies even more important and urgent.

2. Literature Review

2.1 Scope of SMME Resilience Literature

A limited review of SMME resilience literature is presented in Chaurura and Qutieshat (2024). They reported that the scope of SMME resilience research spans all levels from local, national, regional and international. However, these studies reflect biases mostly towards developed and emerging economies, with little research on developing economies and Africa in particular. They also report limited research focused on industry-specific SMME resilience (Chaurura & Qutieshat, SMME Crisis Resilience: A Snap Literature Review of the COVID-19 Era, 2024). There is not much SMME resilience research that has been conducted in Botswana or other African countries.

2.2 Organisational resilience theories

Resilience Theory

The Resilience Theory provides a theoretical foundation for understanding how systems, can adapt and recover from crises. The theory posits that systems possess the capacity to absorb shocks, reorganize, and learn from experiences, ultimately becoming more resilient (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008). In the context of this study, this entailed using the theory to frame the study's exploration of how SMMEs respond, adapt, and recover from crises such as the COVID-19 pandemic.

Resource-Based View (RBV)

The RBV framework posits that firms' unique resources and capabilities influence their competitive advantage and survival (Barney, 1991). SMMEs can enhance their survival prospects by effectively managing and lever-

aging their unique resources, including human capital, knowledge, and networks (Penrose, 1959). It is therefore important when evaluating SMME survival, to assess how SMMEs leverage their resources to navigate challenges and improve survival prospects.

The theory was helpful in exploring how the unique resources of different SMMEs, both tangible and intangible, contributed to resilience during COVID-19. The study investigated how the strategic management of these resources enhanced the ability of SMMEs to weather and recover from COVID-19.

Institutional Theory

Institutional theory, as proposed by (DiMaggio & Powell, 1983), suggests that SMMEs' conformity to institutional norms and regulations can impact their legitimacy, longevity, and survival. A contextual examination of how institutional pressures and compliance affect SMMEs can help one to understand issues around SMME survival. Factors like regulatory conditions, economic stability, and market demand impact strategy adoption (Mwatsika, 2015). A conducive external environment can facilitate the implementation of strategies.

The theory was employed to examine the role of institutions in Botswana in the shaping of the resilience behaviors of SMMEs during COVID-19, in the context of existing policies and support frameworks.

Life Cycle Theory

The Life Cycle theory posits that SMMEs go through distinct stages of growth and development (Churchill & Lewis, 1983). Understanding the life cycle stage helps SMMEs tailor their strategies for growth or stability. The framework is therefore useful in evaluating SMME survival strategies at various stages of their life cycle. This study did not include a scrutiny of the growth and development stages of participating SMMEs therefore the Life Cycle Theory was not explored in the context of SMME resilience during COVID-19 in Botswana. This aspect may however be interesting to examine with potential for useful findings.

Dynamic Capabilities Theory

The Dynamic Capabilities Theory suggests that firms that are capable of adapting, learning, and innovating are more likely to survive and prosper (Teece, Pisano, & Shuen, Dynamic Capabilities and Strategic Management, 1997). Consequently, SMMEs are encouraged to build and nurture dynamic capabilities in order to remain competitive in today's rapidly changing markets. The DCT is a useful framework for examining how SMMEs build and leverage dynamic capabilities to enhance their survival prospects. The theory was used to investigate how SMMEs in Botswana dynamically reconfigured their resources and capabilities in response to the challenges posed by COVID-19.

Environmental Uncertainty Theory

This theory posits that firms that adapt well to uncertain and dynamic environments are more likely to survive (Duncan, 1972). Therefore, SMMEs need to be flexible and responsive to changing market conditions to enhance their survival chances. Access to market information and research can shape strategy decisions. SMMEs with robust market intelligence may better identify growth opportunities (Mafini & Dlodlo, 2014). The COVID-19 pandemic presented an ideal situation for the application of this theory thus its use in this study.

Resource Dependence Theory (RDT)

The RDT emphasizes that SMMEs depend on external resources such as suppliers, customers, and regulators, and managing these dependencies can impact survival (Pfeffer & Salancik, 1978). Consequently, SMMEs

should strategically manage relationships with key stakeholders to secure essential resources. Given the widespread nature of the COVID-19 pandemic and its impact on supply chains, this theory was ideal for evaluating SMME resilience strategies in the current study.

The above commonly applied theories of business survival are not exhaustive but they offer valuable insights into the approaches commonly used by SMMEs to formulate their survival strategies. These theoretical frameworks can be used by SMMEs to diagnose their current situation, identify areas for improvement, and develop effective strategies to enhance their long-term survival and success. The resultant strategies are part of the focus of this present study which seeks to, among other things, identify and analyse the survival strategies adopted by SMMEs. A review of extant literature on SMME survival in the context of these theories using the methodology outlined in the following section provides a comprehensive account of SMME survival strategies, and industry specific applications in the context of Botswana.

All the resilience theories described above are applicable to the current study albeit to varying degrees. However, due to the short duration of the study period, some were more appropriate than others which would need a longer period of time to see their impact. Consequently, the theories deemed to be appropriate in this context were the resilience theory, resource-based view, dynamic capabilities theory, resource dependence theory, and institutional theory.

2.3 Conceptual Frameworks

Adaptive Cycle Framework

The Adaptive Cycle Conceptual Framework is derived from ecological resilience theory and applied to social-ecological systems (Folke, Hahn, Olsson, & Norberg, 2010). It consists of four phases namely exploitation, conservation, release, and reorganization. This framework, as proposed by Folke et al. (2010), can be adapted to analyze the crisis resilience of SMMEs during the COVID-19 era.

The study utilised the Adaptive Cycle Framework to investigate selected organisational survival theories above to understand the resilience phenomenon of SMMEs in Botswana. The Adaptive Cycle Conceptual Framework is derived from ecological resilience theory and applied to social-ecological systems (Folke, Hahn, Olsson, & Norberg, 2010). It consists of four phases namely exploitation, conservation, release, and reorganization. The Adaptive Cycle Framework was chosen for its ability to accommodate multiple theoretical frameworks as described above. This allowed for the examination of the resilience phenomena from several unique angles and thus had the potential to generate new insights into the phenomenon thereby opening up new avenues for building effective resilience strategies for SMMEs.

Ecological Systems Framework

Drawing from ecological systems theory (Bronfenbrenner, 1979), this framework considers SMMEs as part of a larger ecological system. It explores how the interconnectedness between SMMEs and their environment influences crisis resilience. This framework could incorporate factors such as market dynamics, government policies, and societal support. The framework, however, has limitations in the current study as it does not accommodate some of the important survival theories such as the RBV and the DCT, although it does accommodate the Institutional Theory.

Organizational Learning Framework

The Organizational Learning Framework emphasizes the adaptive learning processes within an organization (Argyris & Schön, 1978). It can be applied to understand how SMMEs learn from the challenges posed by the COVID-19 pandemic, adapt their strategies, and build resilience over time. The focus is on the learning capacity of SMMEs and the impact on crisis resilience. The theory does accommodate the DCT very well, but its focus is, however, very limited in the context of the current study which needs to employ multiple survival theories in order to fully explore the research objectives.

Social Capital Theory

Social Capital Theory can be utilized to explore the role of social networks, relationships, and collaboration in enhancing crisis resilience (Putnam, 1995). This framework investigates how the social capital of SMMEs, including ties with other businesses, government agencies, and community networks, contributes to their ability to withstand and recover from crises. Although it accommodates several survival theories in its scope, it leaves out RBV and DCT which are central to the current study, thereby limiting its applicability in this context.

In the final analysis, the Adaptive Cycle Framework seemed to be the most appropriate conceptual framework for use in the present study by virtue of its capacity to accommodate all the selected theoretical frameworks for this study. This allowed for the examination of the resilience phenomenon from several unique angles and thus generate potentially new insights that could open up new avenues for the building of effective resilience strategies for use by SMMEs.

2.4 SMME Resilience Strategies During Crises

Digital transformation

A general rise in digital transformation during the crisis was noted (Hossain, Akhter, & Sultana, 2022) indicating that enterprises leveraging digital platforms, technology, digital marketing, and innovations could achieve success and profitability (Hossain, Akhter, & Sultana, 2022; Schepers, Vandekerckhof, & Dillen, 2021). Implementation involved investing in e-commerce platforms, online marketing strategies, digital payment systems, and remote collaboration tools to maintain business continuity and reach customers in a digital-first environment (Tukamuhabwa, Stevenson, & Busby, 2017; Fitriasar, 2020). Digital technologies such as big data, artificial intelligence, cloud computing, and online office software were employed to monitor the pandemic, enable remote work, and support crisis responses (Guo, Yang, Huang, & Guo, 2020). However, some studies note that there was room for improvement, especially in areas such as digital business models and management models (Guo, Yang, Huang, & Guo, 2020). SMMEs often relied on external technologies for digitalization, indicating a potential lack of internal R&D capabilities (Guo, Yang, Huang, & Guo, 2020). The extent to which developing economies such as Botswana utilised technologies in their response to is not fully appreciated, although there is evidence of some use of technology in such areas as remote working mostly involving the use of social media platforms like whatsapp, zoom, and Microsoft teams for the coordination and monitoring of work-related activities.

Harnessing relationships

Many SMMEs turned to their relational capabilities to stay afloat during the pandemic (Hossain, Akhter, & Sultana, 2022; Fath, Fiedler, Sinkovics, Sinkovics, & Sullivan-Taylor, 2021; Herbane, 2019; Schepers,

Vandekerckhof, & Dillen, 2021; Zutshi, Mendy, Sharma, Thomas, & Sarker, 2021). This involved collaborating with suppliers, distributors, employees, and regulators. Harnessing relational capabilities helped SMMEs to find innovative solutions to the challenges posed by the pandemic (Hossain, Akhter, & Sultana, 2022; Fath, Fiedler, Sinkovics, Sinkovics, & Sullivan-Taylor, 2021; Ali, et al., 2021).

Encouraging positive employee relationships, including developing an entrepreneur mindset in employees seems to have been instrumental in building resilience for some SMMEs (Pongtanalert & Assarut, 2022; Hossain, Akhter, & Sultana, 2022). Additionally, proactive communication of the SMME's business purpose coupled to demonstrated care for employees, for instance health and safety measures, providing remote work support, and offering training and development opportunities helped to build trust and resilience within some organization (Pongtanalert & Assarut, 2022; Zutshi, Mendy, Sharma, Thomas, & Sarker, 2021; Tukamuhabwa, Stevenson, & Busby, 2017).

Other organisations improved their prospects by focusing on building customer relations through personalized communication, loyalty programs, online promotions, and responsive customer service. This helped to maintain relationships, drive sales, and retain customer loyalty during the crisis (Tukamuhabwa, Stevenson, & Busby, 2017).

In the context of Botswana, little is known about the extent to which relational capabilities contributed to resilience building in SMMEs.

Building financial capacity

Some SMMEs focused on building financial capacity by implementing several initiatives including cost reduction, seeking financial assistance, exploring new revenue streams, including social capital (Jalilian, Kirkpatrick, & Weiss, 2019; Nyikos, Soha, & Béres, 2021; Fitriasar, 2020), financial planning, cash flow management, accessing government support programs, loans, tax payment extensions, loan delays and grants to stabilize their finances (Saad, Hagelaar, van der Velde, & Omta, 2021). Robust financial plans included strategies to cover fixed costs and maintain cash flow during periods of low sales (Eggers, 2020; Herbane, 2019).

It is a fact that the government of Botswana has invested substantially in resourcing SMMEs within its borders, especially citizen-owned entities, through a raft of interventions including, but not limited to, government support program, loans, and grants. Although these interventions have the potential to improve SMME resilience during crisis times such as the COVID-19 pandemic, whether this happens or happened has not been adequately investigated. Additionally, the role of other forms of financial strategies in SMME resilience, particularly those involving individual SMME effort, such as financial planning, cash flow management, cost reduction and creating or accessing new streams of revenue, need to be unravelled.

Creating competitive products and services

Some SMMEs tapped into their innovative reserves to develop competitive products and services to mitigate the negative impact of the pandemic on their businesses (Hossain, Akhter, & Sultana, 2022). This involved introducing new products, services, and business models, coupled to repurposing existing resources (Tukamuhabwa, Stevenson, & Busby, 2017). An example is the SMMEs in the food industry adopted a strategy that focused on the production of food products with higher demand and profit margins, allowing for more efficient resource allocation, for instance the use of flexible manufacturing and volume strategies to address gaps in supply chain

disruptions and meet fluctuating demand (Ali, et al., 2021). There is, however, need to investigate the extent to which SMMEs in Botswana used this strategy in their response to the pandemic.

Agility and reconfiguration

Workplace and logistics pipelines were also reorganized by other SMMEs as a way to adapt to the new normal and ensure business continuity (Hossain, Akhter, & Sultana, 2022; Guo, Yang, Huang, & Guo, 2020; Schepers, Vandekerckhof, & Dillen, 2021). Reconfiguration encompassed the optimization of supply chains through supplier diversifying, establishment of local sourcing options, implementation of inventory management systems, and enhancing logistics and distribution networks to mitigate disruptions and ensure product availability (Tukamuhabwa, Stevenson, & Busby, 2017). Other practices adopted included flexible work arrangements, remote work capabilities, and rapid decision-making processes to respond quickly to changing market conditions and customer needs (Tukamuhabwa, Stevenson, & Busby, 2017; Fath, Fiedler, Sinkovics, Sinkovics, & Sullivan-Taylor, 2021; saad, Hagelaar, Velde, & Omta, 2021; Pongtanalert & Assarut, 2022; Eggers, 2020).

Management practices

Some management practices were viewed as important for building resilience to the crisis. An example is decentralized decision-making which was thought to help business units to focus on environmental issues specific to their geographic location, thereby allowing for a more targeted response to disruptions (Ali, et al., 2021). Formal strategic planning and Business Continuity Planning (BCM) were also seen as instrumental to the improvement of performance and the SMME's ability to respond and recover from acute crises (Herbane, 2019).

The resilience mechanisms discussed above are not exhaustive, but highlight the importance of adaptability, innovation, and collaboration for SMMEs to navigate through crises successfully. Through these mechanisms, some SMMEs were able to navigate the challenges brought about by the COVID-19 pandemic, adapt to the new business landscape, and position themselves for recovery and growth in a post-pandemic world. This study seeks to explore the strategies that were employed in the context of Botswana to understand whether similar strategies or different ones were utilised and the extent to which they were effective. Findings from the study may contribute to the body of knowledge on SMME resilience strategies during COVID-19 which may be extrapolated to other crises.

3. Methodology

3.1 Study Design

A mixed methods approach combining qualitative and quantitative techniques was used to collect and analyse the data. This ensured both in-depth exploration of the research objectives and statistical analysis enabling objective conclusions (Creswell & Creswell, 2017).

3.2 Study Sites

The study sites were derived from urban and peri urban areas of Botswana's major cities of Gaborone, and Francistown and included entities from various industry sectors to ensure representativeness (Patton, 2014).

3.3 Study Population

The study population consisted of formal or registered SMMEs from all economic sectors in Botswana.

3.4 Sample Size Determination and Sampling

Sample size determination.

An online sample size calculator, Raosoft, was used to calculate the required sample size for the study (Raosoft Inc, 2004). The calculator was chosen for its ease of use and relatively reliable calculations even when used by researchers with minimal knowledge of statistics. The calculated sample size was 377, split into, based on information from Statistics Botswana, 54 SMMEs from Francistown and 323 from Gaborone. This was further split by industry sector to ensure representativeness (Krejcie & Morgan, 1970). Based on information from Statistics Botswana (2022), the split was done between the top 5 industry sectors of Botswana namely wholesale & retail trade, hotels & restaurants, real estate & renting, education, and manufacturing. The distribution of SMMEs was roughly 1:1:2:2:6 respectively, translating to the following number of SMMEs respectively 31, 31, 63, 63, 189.

Sampling approach

Each industry sector was treated as a stratum in which the required number of SMMEs were drawn from as per the above. In-stratum, convenience sampling was used to improve response rate.

3.5 Inclusion/Exclusion Criteria

Inclusion

The study included all formally registered and operational private sector organisations, registered as of 2022, that fulfil the definition of SMME as highlighted in this study.

Exclusion

The study excluded all unregistered or informal organisations even if they fit the definition of an SMME as stated in this study. If an organisation had operations in both Gaborone and Francistown, only one of the sites was sampled based on accessibility and convenience. The study excluded all non-SMME entities and those not directly affected by the pandemic (Denscombe, 2014). All SMMEs registered after 2022 were also excluded.

3.6 Study Variables

Dependent variables

SMME crisis resilience

This variable measures the overall resilience of SMMEs during the COVID-19 pandemic. Its assessment will be based on SMME perception of the extent of usage of resilience strategies and perception on the extent of effectiveness of the resilience strategies used during the pandemic. Understanding what strategies SMMEs used and how well they think these strategies helped SMMEs in Botswana cope with and recovered from the challenges is a central focus of this study. Findings are intended to be extrapolated and generalised in a bid to suggest universal resilience strategies and interventions for adoption by SMMEs in Botswana and elsewhere.

Independent Variables

Crisis resilience mechanisms/strategies

This variable examines the strategies and mechanisms adopted by SMMEs in response to the challenges stated above. Sub-variables were also included under each main category for example innovation adoption, diversification, and digital transformation (Teece, Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance, 2007).

Policies and support frameworks

This variable evaluates the effectiveness of policies and support frameworks implemented by the government and other stakeholders to enhance the crisis resilience of SMMEs in Botswana. Sub-variables to be included are financial assistance programs, training initiatives, and regulatory support (North, 1990).

Moderating variables

Government interventions

This variable moderates the relationship between challenges faced by SMMEs and their crisis resilience. It assesses the impact of government interventions, including financial stimulus packages and regulatory relief, on enhancing SMME resilience (Ostrom, 2005). In Botswana, the government has made significant investment into financial and regulatory initiatives to support SMME establishment, survival, and growth.

Industry characteristics

This variable moderates the relationship between crisis resilience mechanisms and the overall resilience of SMMEs. It considers industry-specific factors that may influence the effectiveness of adaptive strategies, such as the level of competition and market demand (Porter, 1980).

3.7 Data Collection Approach

Approach

A semi-structured questionnaire, containing both close-ended and open-ended questions, was used to collect quantitative data and qualitative data on the challenges faced by SMMEs during the COVID-19 pandemic and the resilience strategies used to mitigate them. Additionally, an interview guide was used to obtain more in-depth information on the study's objectives from a select few stakeholders such as officials from relevant government organisations (CEDA, LEA, Statistics Botswana, etc) as a way of triangulating data and data sources (Rubin & Rubin, 2012).

Data Analysis

Most of the data collected from this study was categorical data which represents characteristics or attributes that can be divided into distinct groups or categories which are qualitative in nature (Babbie, 2016; Agresti, 2007). The categorical data was of the nominal (no intrinsic order) and ordinal (have meaningful order but no consistent intervals between them) types (Babbie, 2016; Agresti, 2007). The data was therefore analysed using Chi-square test, contingency tables, and frequency distribution (Agresti, 2007; Field, 2013). SPSS statistical software, version 24, was used to perform the quantitative data analysis, encompassing descriptive statistics, associations, and significance testing. Qualitative analysis of the open-ended questions in the questionnaire and interview guide was done using manual coding and thematic analysis (Miles, Huberman, & Saldana, 2014) to reveal the deeper information on the relevant objectives.

3.8 Validity & Reliability

Validity and Reliability are important measures in research that the study produces robust, credible, and trustworthy results. Below, I explain how these two aspects were approached in this study.

Validity

Construct validity

Construct validity ensures that the survey instruments accurately measure the concepts they are intended to measure (Bolarinwa, 2015). This was achieved by using reviews (literature and/or expert), and pilot testing.

Internal validity

Internal validity ensures that the observed effects are due to the interventions or variables studied rather than external factors (Campbell & Stanley, 1963). Internal validity is achieved by controlling confounding factors which may influence the outcome (Shadish, Cook, & Campbell, 2002) and/or ensuring consistency in qualitative data collection through. The later approach was employed in this study by using a standardised questionnaire and interview protocol (King & Horrocks, 2010).

External validity

External validity ensures that the study results can be generalized to other contexts or populations (Shadish, Cook, & Campbell, 2002). It is achieved through representative sampling and replication (Kumar, 2019; Yin, 2017). Both these aspects were incorporated into this study as outlined in the description of the sampling approach and method.

Content validity

Content validity ensures that the survey items cover all relevant aspects of the concept being measured (Polit & Beck, 2006). Content validity is achieved through expert reviews by subject matter experts, to confirm if survey items are comprehensive and relevant (Lynn, 1986), and piloting to identify any missing elements and refine the content (Presser, et al., 2004). Both these aspects were incorporated into this study.

Reliability

There are several different approaches to determining reliability in research. These include determining internal consistency using Cronbach's Alpha, test-retest reliability using Pearson Correlation Coefficient, inter-rater reliability, and split-half reliability. In this study the test-retest reliability was preferred because it's easy to determine and dovetails flawlessly with the data collection process.

The test-retest reliability determines the stability and consistency of a survey or test over time (Cohen, 1988; Nunnally & Bernstein, 1994). The approach involves administering the survey instrument to a small sample of the target population at two different times followed by determining the Pearson Correlation Coefficients for the two sets of responses to the questions in the questionnaire (Cohen, 1988). Responses obtained during the pilot study conducted with 20 participants were compared with responses of the same initial 20 participants during actual data collection started a week after the pilot study. SPSS was used to calculate the Pearson Correlation Coefficient between the two sets of data. In general, high or very high values of the Pearson Correlation Coefficient were obtained in the test-retest reliability determination for this study. This implied that the survey consistently measured the same construct over time thereby providing reliable results.

3.9 Ethical Considerations

Informed consent

Informed consent was obtained from all participants by requiring them to read and sign a consent form before being allowed to participate in the study. Additionally, each participant was permitted to exit the study at any point during the study for any reason that they may deem important to themselves.

Confidentiality

Confidentiality and anonymity of participants during data collection and analysis was guaranteed using a carefully designed anonymization process that removed any information that could link a participant to their responses during data collection. Ethical standards and guidelines were complied with throughout the research process. Ethical clearance was obtained from the University of Zambia Biomedical Research Ethics Committee and permission to collect data in Botswana was obtained from the Ministry of Entrepreneurship.

4. Results

4.1 Range and extent of usage of resilience strategies

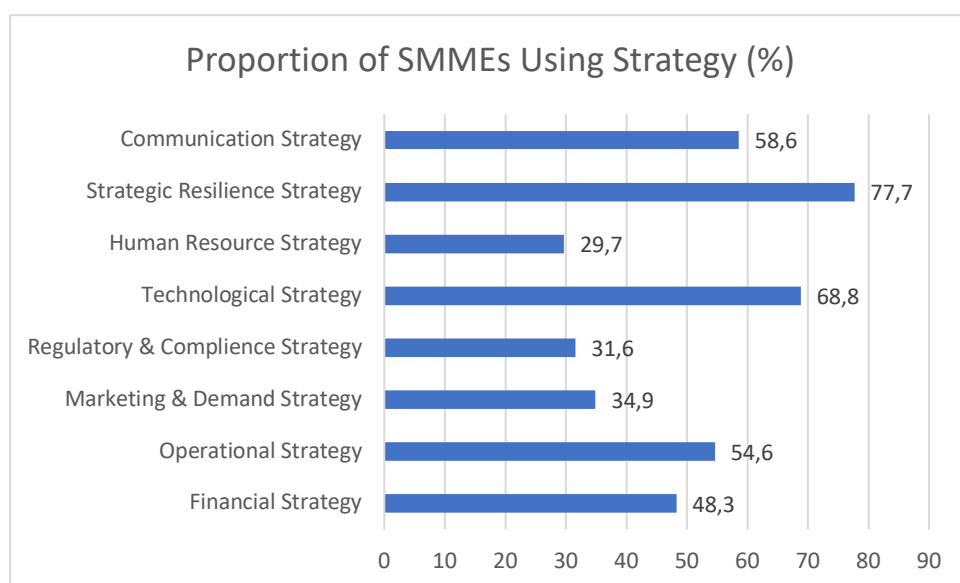


Figure 1: Usage of different resilience strategies by SMMEs in Botswana during the COVID-19 pandemic

Eight resilience strategies, aligned to the eight broad challenge categories previously described, were investigated in this study. The four (4) most used resilience strategies during the pandemic were strategic resilience strategies (77.7%), technological resilience strategies (68.8%), communication resilience strategies (58.6%), and operational resilience strategies (54.6%) (Fig 1). This hierarchy of usage of resilience strategies is logical given the fact that the prevailing environment during the pandemic required a lot of strategizing leveraged on technologies that enabled limited physical contact necessitated by social distancing requirements during the pandemic.

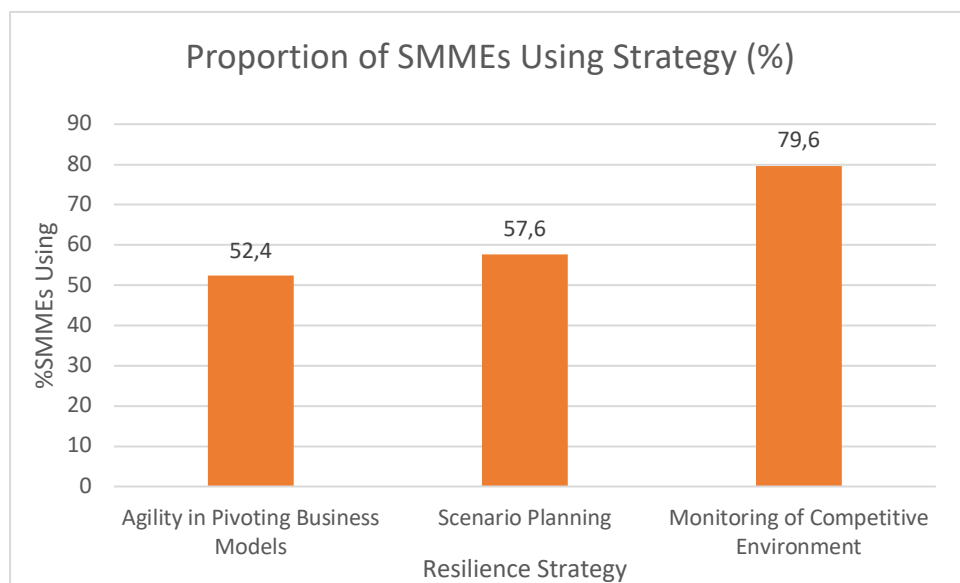
Strategic resilience strategies

Figure 2a: Usage of strategic resilience strategies by SMMEs in Botswana during the COVID-19 pandemic

The strategic resilience strategies investigated were pivoting new business models, scenario planning, and competitive landscape monitoring. The most used strategy was competitive environmental monitoring, used by 79.6% of the respondents (Fig 2a). Next was scenario planning, which was utilised by 57.6% of respondents, and last was agile pivoting of new business models, which was utilised by 52.4% of the respondents.

Given the volatility of the operating environment, it is not surprising that competitive environmental monitoring was the most used strategy in this category. Businesses, including SMMEs, needed to mitigate the uncertainty in the operating environment by obtaining as much information from the operating environment as possible and as quickly as possible, then use that information to make decisions about various aspects that affect business. Keeping an eye on developments in the market, industry, and nation was crucial for timely detection of emerging industry and sector trends which were crucial business survival. This finding is in line with existing literature where it is reported that some SMMEs tapped into their innovative reserves to develop and introduce competitive products and services new, and business models to mitigate the negative impact of the pandemic (Tukamuhabwa, Stevenson, & Busby, 2017). Ali et al (2021) reported on the use of flexible manufacturing and volume strategies to address gaps in supply chain disruptions and meet fluctuating demand.

Scenario planning to prepare for various future contingencies and develop robust action plans was prudent in the volatile COVID-19 environment. Scenario planning makes use of information from past periods and from current events, including information from environmental scanning to paint a picture of future scenarios and adequately prepare for them. If the information and process used are of high quality, robust responses to the anticipated future scenario can be crafted and implemented to mitigate the negative effects of the pandemic. Hebane (2019) states that formal strategic planning and business continuity planning (BCM) were seen as instrumental to the improvement of performance and the SMME's ability to respond and recover from acute crises.

During the pandemic, SMMEs had to be agile in pivoting new business models to ensure that they responded to developments in the industry, sector, and nation. The dynamic capabilities theory posits that firms that are capable of adapting, learning, and innovating are more likely to survive and prosper (Teece, Pisano, & Shuen, Dynamic Capabilities and Strategic Management, 1997). This was especially relevant in the highly disruptive and challenging COVID-19 environment which rendered some of the existing business models redundant. Similar sentiments were advanced by other researchers (Guo, Yang, Huang, & Guo, 2020; Schepers, Vandekerckhof, & Dillen, 2021).

Additionally, thematic analysis identified strategic diversification, (Table 2), as another strategy in this category used by SMMEs to mitigate or overcome the COVID-19 challenges. It involved using a range of different strategies in response to the crisis. This may imply that SMMEs in Botswana simultaneously used multiple strategies in response to the various challenges rather than using one strategy (one-to-many mapping). This is a more likely and practical and approach to yield better results. It is also likely that the sequence of application of the strategic resilience strategies was as shown in the figure below:

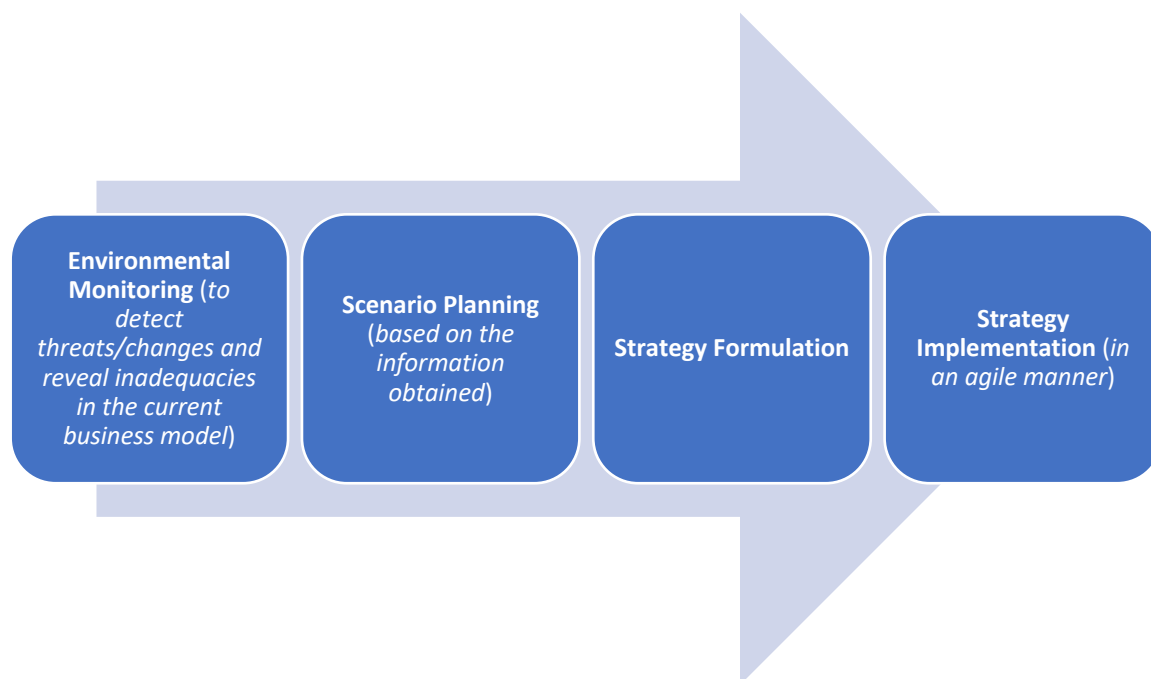


Figure 2b: Possible sequence of implementing a strategic resilience strategies in response to COVID-19

At industry sector level, the wholesale and retail trade industry led in the use of strategic resilience strategies at 26.8% (Fig 2c), followed by the hair and beauty sector at 12.3%, and lastly the healthcare sector at 9.3%. The other sectors used strategic resilience strategies to varying degrees ranging from 0.4% to 8.2%.

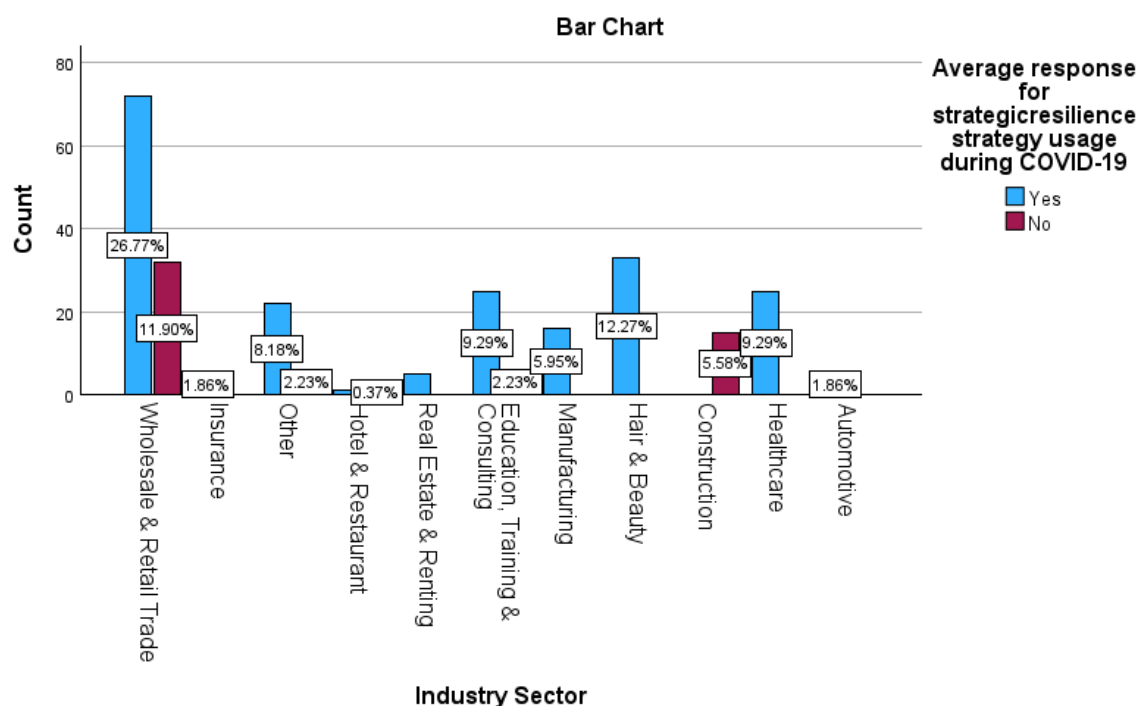


Figure 2c: Usage of strategic resilience strategies by SMME industry sector in Botswana during the COVID-19 pandemic

Technological resilience strategies

Some researchers report a general rise in digital transformation during the COVID-19 crisis (Hossain, Akhter, & Sultana, 2022) indicating a belief that enterprises leveraging digital platforms, technology, digital marketing, and innovations could achieve success and profitability (Schepers, Vandekerckhof, & Dillen, 2021). This study investigated the utilisation of several strategies under the category of technological resilience strategies. These were investment in digital tools, enhancing cybersecurity, and upgrading of technological infrastructure. Findings from the study indicated that the most used technological strategies by SMMEs in Botswana during COVID-19 were investment in digital tools (31.3%), upgrading of technological infrastructure (27.1%), and enhancing cybersecurity (25.7%) (Fig 3a).

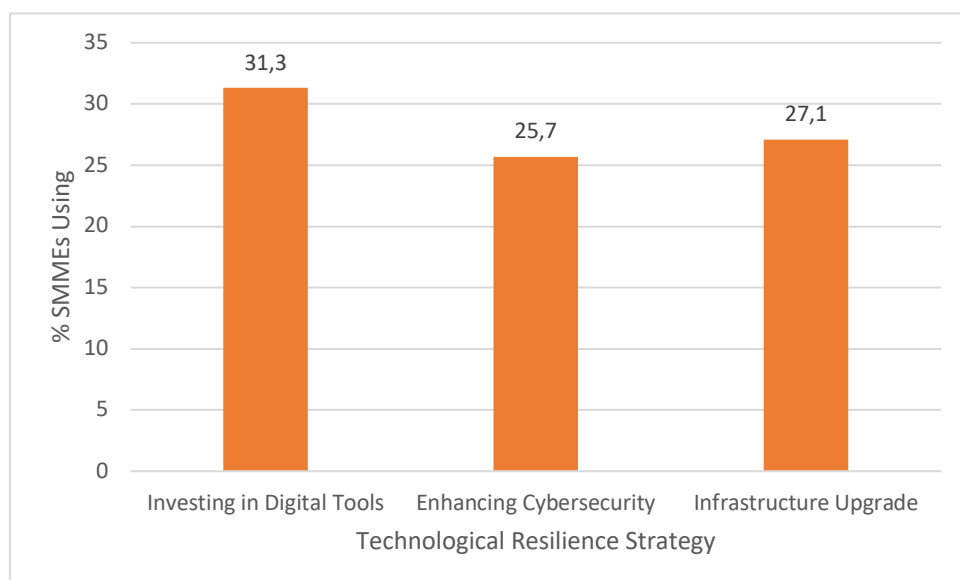


Figure 3a: Usage of technological resilience strategies by SMMEs in Botswana during the COVID-19 pandemic

The most used technological resilience strategy was investing in digital tools (31.3%), followed by technological infrastructural upgrade (27.1%), and lastly enhancing cybersecurity (25.7%). Chaurura & Dar (2024) reported that the need for accelerated digitisation was the most prominent challenge faced by SMMEs in Botswana during COVID-19. This could explain why investing in digital tools as a resilience strategy was popular among SMMEs in Botswana. SMMEs invested in technologies that support remote operations, or increased automation of processes. Sectors such as education, training and consulting, for instance, utilised virtual platforms like Microsoft Teams, Google Meet, Zoom, and even Whatsapp to manage meetings and deliver teaching and learning. Wholesalers, manufacturers, and other sectors that sell and buy goods and raw materials increasingly utilised online platforms like Facebook, ebay, websites, and apps to market and sell their products or access process inputs.

SMMEs also upgraded their technological infrastructure, which was a good response to the second most prominent technological challenge for SMMEs in Botswana, inadequate technological infrastructure, as reported by Chaurura & Dar (2024). These upgrades involved such actions as increasing internet bandwidth and acquisition of hardware such as computers and servers. In the same manner, SMMEs in Botswana used enhanced cybersecurity to mitigate vulnerability to cyber-attacks, the third most important technological challenge for Botswana SMMEs during COVID-19 (Chaurura & Dar, An Evaluation of the Nature and Extent of Challenges Encountered by Small, Medium, and Micro Enterprises (SMMEs) in Botswana During COVID-19, 2024). Cybersecurity enhancements involved acquisition of more robust anti-virus software, and more sophisticated verification processes such as biometrics.

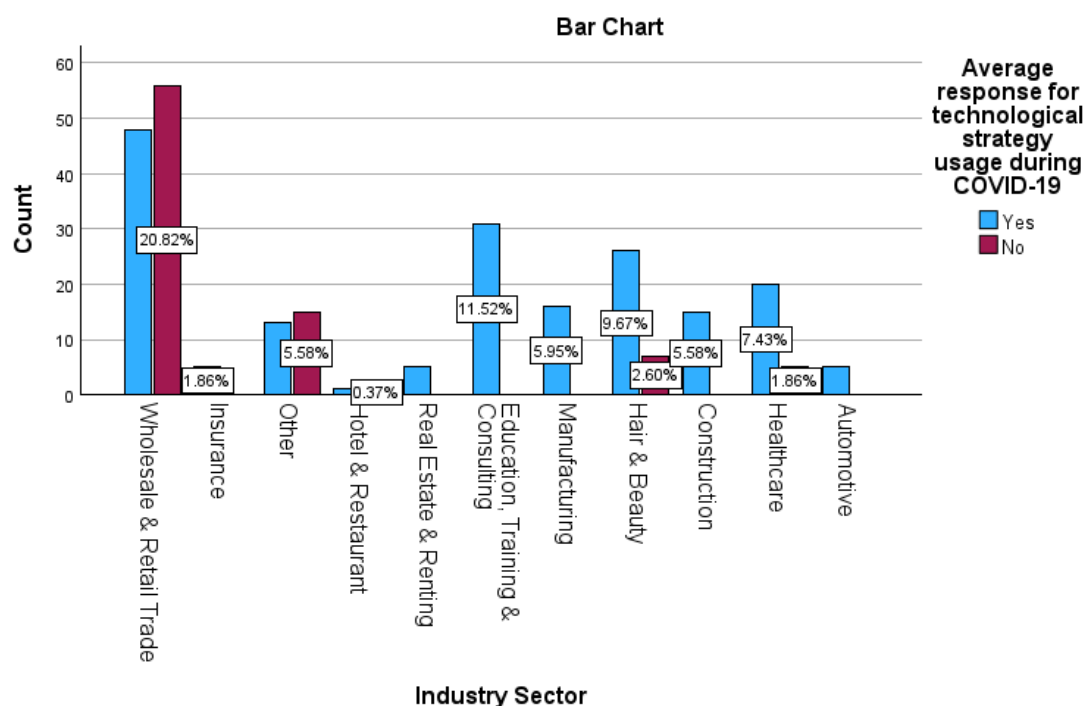


Figure 3b: Usage of technological strategies by SMME industry sector in Botswana during the COVID-19 pandemic

Technological resilience strategies were most used in the wholesale and retail trade sector at 20.8%, followed by the education, training & consulting sector at 11.5%, with the health and beauty sector coming third at 9.7%.

Communication resilience strategies

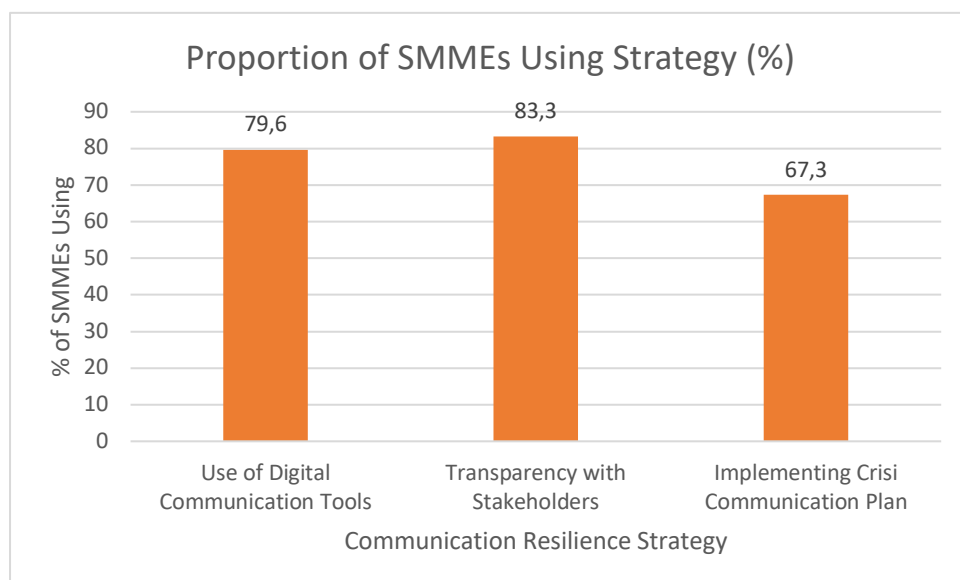


Figure 4a: Usage of communication resilience strategies by SMMEs in Botswana during the COVID-19 pandemic

The most used communication strategy by SMMEs in Botswana during the COVID-19 pandemic was transparency with stakeholders (83.3%), followed by use of digital communication tools (79.6%), and lastly implementing crisis communication plans (67.3%).

The communication resilience strategies investigated in the study were: use of digital communication tools, transparency with stakeholders, and development and implementation of crisis communication plan. The most used communication strategy during COVID-19 was transparency with stakeholders (83.3%), followed by use of digital communication tools (79.6%), and lastly implementing crisis communication plans (67.3%) (Fig 4a). Transparency with stakeholders was key during the COVID-19 era to ensure that customers and other stakeholders were kept abreast with developments that could impact their transactions with the enterprise. Mendy, Sharma, Thomas, & Sarker (2021) highlight the importance of proactive communication in building trust with stakeholders.

Digital communication tools including, but not limited to, emails, social media platforms among others were leveraged to ensure the right level of transparency on developments. Digital communication tools play a role in building customer relations through personalized communication, loyalty programs, online promotions, and responsive customer service thereby helping to maintain relationships, drive sales, and retain customer loyalty during the crisis (Tukamuhabwa, Stevenson, & Busby, 2017).

Crisis communication plans were necessary to alert stakeholders of emergency and or crisis situations even during a greater crisis. Dependency on implementing crisis communication plans was key given the fact that the SMMEs were operating in a crisis therefore needed to be ready to face and communicate emergencies to

stakeholders at any time. These plans made use of the available digital communication tools discussed above. It therefore seems that there was an interplay between sub-strategies of the communication resilience strategy.

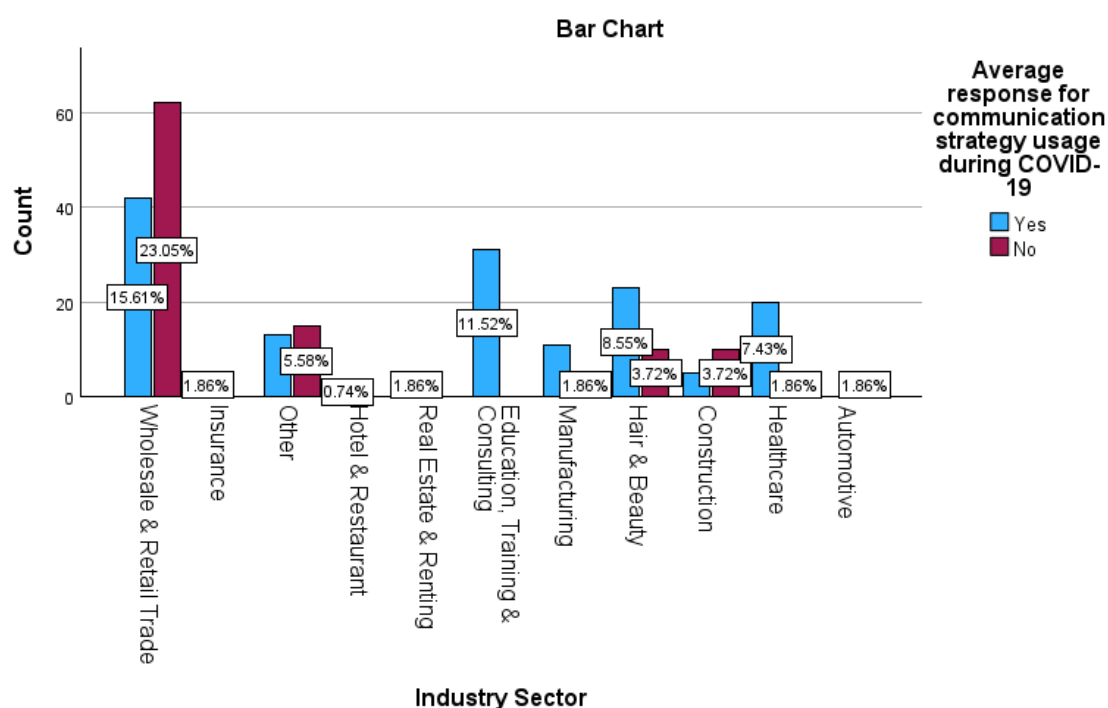


Figure 4b: Usage of communication resilience strategies by SMMs in Botswana during the COVID-19 pandemic

Communication resilience strategies were most used by the Wholesale & Retail sector (15.6%), followed by the Education, Training & Consulting sector (11.5%), and Hair & Beauty (8.6%) (Fig 4b).

Operational resilience strategies

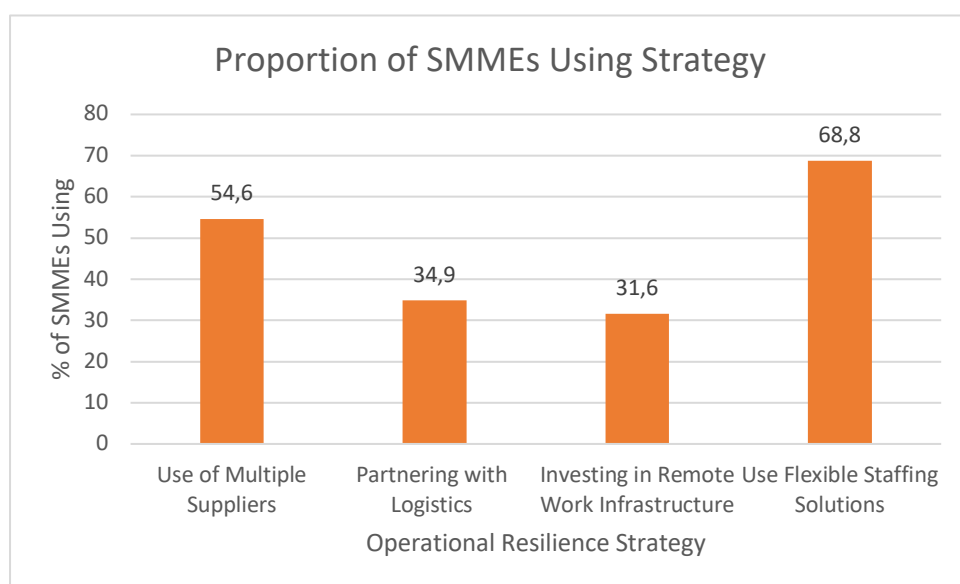


Figure 5a: Usage of operational resilience strategies by SMMs in Botswana during the COVID-19 pandemic

Although operational challenges did not feature in the top three challenges besetting SMMEs in Botswana during the pandemic as reported by Chaurura & Dar (2024), operational challenges still affected a significant proportion of SMMEs (59.5%) and therefore were deemed significant enough to be given some attention in this study.

The operational resilience strategies that were researched are; multiple supplier-partnering, partnering with reliable logistics companies or investing in own delivery solutions, investing in secure & efficient remote work infrastructure and employee training, and utilising flexible staffing solutions (part-time, freelance, temporary staff etc). The most prominent operational resilience strategy used by SMMEs in Botswana during the COVID-19 pandemic was flexible staffing solutions (68.8%), followed by use of multiple suppliers (54.6%), and partnerships with reliable logistics companies (Fig 5a). This hierarchy of operational resilience strategies makes sense as they address some of the most important challenges encountered by the SMMEs during the pandemic namely financial challenges, technological challenges, and human resource challenges.

Flexible staffing solutions addressed human resource challenges particularly among players in the health sector for example testing laboratories. These reported increased business volume premised on mandatory tests required for travelling as well as confirmatory tests of quarantined and hospitalised people. Additionally creative staff reconfiguration of existing staff compliments was also used to mitigate the human resource challenges being experienced. This was also the case for SMMEs in other sectors like construction industry which had lost employees who went in search of more stable jobs in the wake of project shortages in the construction sector.

The use of multiple suppliers was a strategy that addressed issues of availability emanating from interruptions in the supply of raw materials from suppliers and finished goods to consumers. A twin problem was challenges in transportation and delivery of goods, which the SMMEs responded to using the strategy of partnering with reliable logistics companies to ensure a smooth and more timely receipt of raw materials and inputs and delivery of finished products to customers. Thematic analysis identified the theme 'operations and service delivery' which proposed the use of alternative delivery methods (Table 2). Another theme from thematic analysis was 'organizational preparedness and resilience' which advocated for the making of advance preparations and being responsive, adaptive, and willing to use alternative means (Table 2).

Some of the operational resilience strategies employed were not a good fit for some of the operational challenges encountered by SMMEs during the pandemic. Examples of such include difficulties in shifting to remote work, and employee absence due to illness, quarantine, or caregiving responsibilities. These operational challenges were better addressed by other resilience strategies utilised in this study for instance difficulties in shifting to remote work were mitigated by sub-categories of human resource resilience strategies such as the provision of training and development of employees in the use of digital platforms like Facebook, Zoom, and Microsoft Teams. Logically, these are also linked to other resilience strategies including, but not limited to, use of digital communication tools, and other technological resilience strategies. The challenge of employee absence due to illness, quarantine, or caregiving responsibilities can clearly be resolved by technological and other resilience strategies.

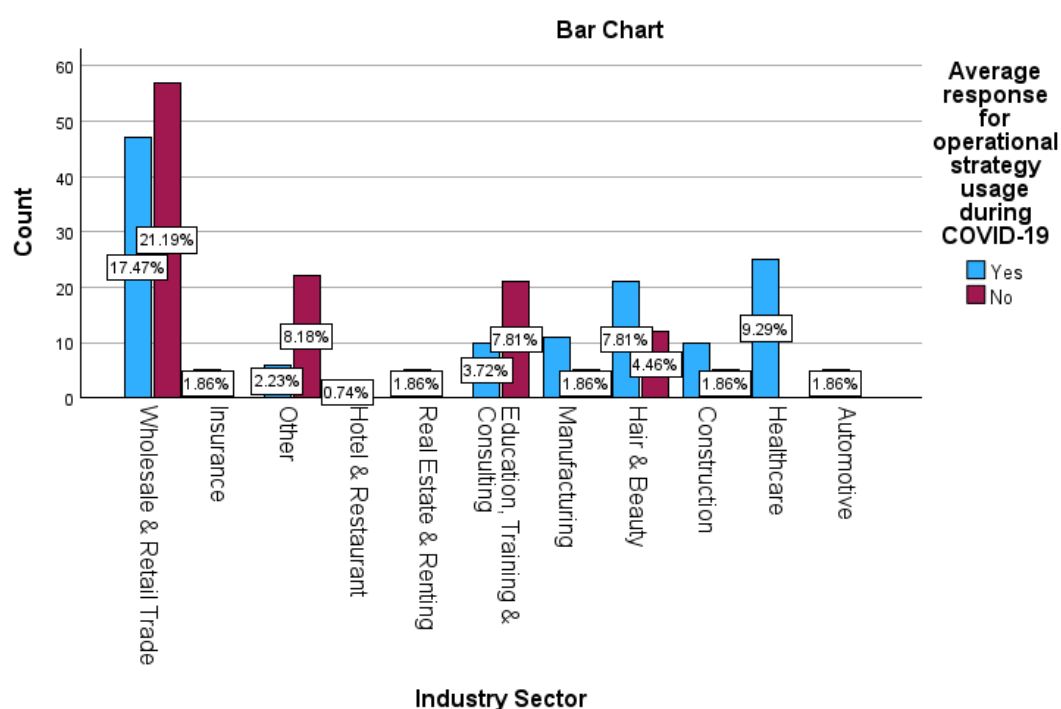


Figure 5b: Usage of operational resilience strategies by SMME industry sector in Botswana during the COVID-19 pandemic

With respect to industry sector, the Wholesale & Retail Trade sector dominated in the usage of operational resilience strategies (17.5%), followed by the Healthcare sector (9.3%), and Hair & Beauty (7.8%) sectors.

Government programmes and initiatives

Thematic analysis of the open-ended questions on knowledge awareness of actual government intervention programmes during the pandemic yielded themes that suggested that the respondents had some knowledge of the programmes and schemes offered by government (Table 2). Themes identified included salary support and subsidies, financial assistance, specific financial & social programs, health and safety measures, and government communication (Table 2). This aligns well with what is in literature and is corroborated by interviews of government agencies, therefore one can conclude that government awareness campaigns had a degree of success.

Table 1: Government intervention programmes identified by respondents

Theme	Code	Description
Salary Support and Subsidies	Salary subsidies, Employee Salary Aid, Subsidy on salaries, Employee wages	Government-backed schemes and programs aimed specifically at helping SMMEs pay employee salaries during COVID-19.
	Employee part salary support	
Financial Assistance	Loan repayment holiday	Help to SMMEs in the form of finance/money pro-

	Financial support, Financial assistance to government tender-holders, Government Financial Advances VAT waiver/Relief/subsidy etc	vided by the government for purposes other than direct payment of employee salaries, or regulatory provisions to ease the financial stress of SMMEs.
Specific Financial & Social Programs	COVID-19 CEDA Funds Mabogodinku Youth Development Fund Food Aid	Specific or specially designated government funds for short-term intervention during the COVID-19 era.
Health and Safety Measures	Priority/preferential vaccination for health/healthcare workers. Tips on how to reduce the spread of the virus.	Targeted health and safety government measures during COVID-19.
Government Communication	Government sent various relevant communications through various means.	Targeted and general government communications giving direction, advise, directives, and information on different aspects affecting SMMEs.

The government of Botswana has implemented several programs to support the SMME sector, including during the COVID-19 pandemic. This was achieved the activities of various government agencies including, but not limited to, the Citizen Entrepreneurial Development Agency (CEDA), whose mandate is to provide financial and technical support to SMMEs including loans and business development services (CEDA, 2023), the Local Enterprise Authority (LEA) which is mandated to offer training, mentoring, and advisory services to help SMMEs grow and become sustainable (LEA, 2023), the Economic Diversification Drive (EDD) whose aim is to reduce dependence on the mining sector by increasing diversification of industries including SMME development (MITI, 2023).

The government support initiatives fell into three broad categories namely financial assistance, wage subsidies, and business development services. Financial assistance consisted of special relief funds to provide loans at concessional rates through CEDA (Citizen Entrepreneurial Development Agency (CEDA)., 2023). Further, tax relief measures were introduced through the Ministry of Finance allowing deferred payments and reducing tax burden (Ministry of Investment, Trade and Industry, 2023).

Wage subsidies were introduced to partially cover the salaries of SMME employees thereby preventing potential massive lay-offs (Ministry of Investment, Trade and Industry, 2023).

Business development services were provided through LEA incorporating training and mentorship programmes focusing on digital transformation, e-commerce, and crisis management strategies (Local Enterprise Authority (LEA)., 2023).

How SMMEs leveraged these opportunities can be viewed as a resilience strategy due to their potential to foster resilience in SMMEs. This study sought to determine the extent of awareness, access, and utilisation of these government initiatives among SMMEs in Botswana. Awareness is the first step towards accessing and utilising these facilities by SMMEs. Initiative and tenacity in accessing and utilising government programmes, policies, and frameworks created to alleviate the impacts of COVID-19 on businesses therefore becomes an important aspect of SMME resilience and survival in Botswana.

My organisation/business was aware of the different government interventions intended to mitigate the challenges brought by COVID-19

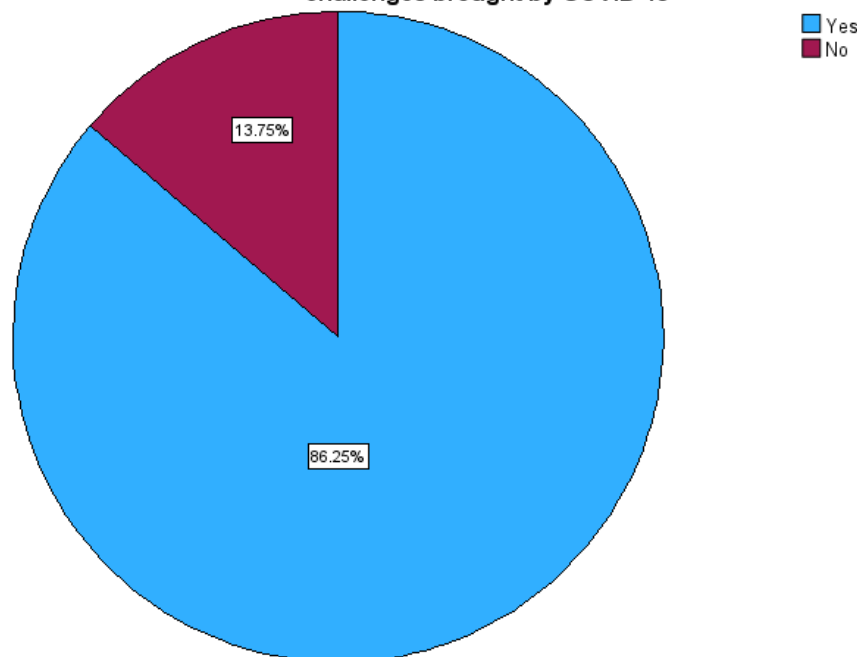


Figure 6a: Awareness of government intervention programmes among SMMEs in Botswana during the COVID-19 pandemic

Most respondents (86.3%) indicated that they were aware of the various government programmes aimed at mitigating the challenges brought by the COVID-19 pandemic (Fig 6a). However, some sources argue that there was a lack of awareness and communication about the available support initiatives to SMMEs in Botswana particularly those in rural areas (MITI, 2023). This is believed to have led to poor uptake of the programmes in those contexts. This study, however, did not sample rural-based SMMEs due to their small number and dispersion which made it difficult to access them given the resources available to the researchers. Findings from this study can therefore not be generalised or extrapolated to rural-based SMMEs in Botswana.

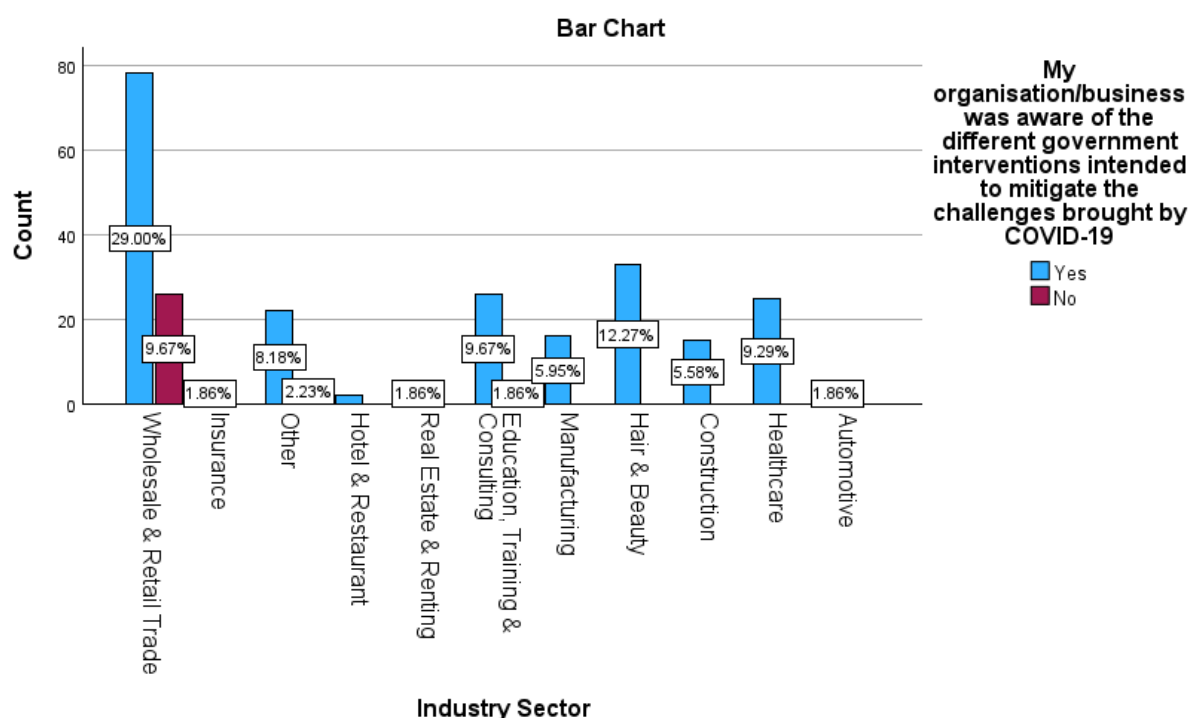


Figure 6b: Awareness of government intervention programmes by SMME sector in Botswana during the COVID-19 pandemic

The highest awareness was found among SMMEs in the Wholesale & Retail Trade sector (29%), followed by Hair & Beauty sector (12.3%), and Education, Training & Consulting (9.7%).

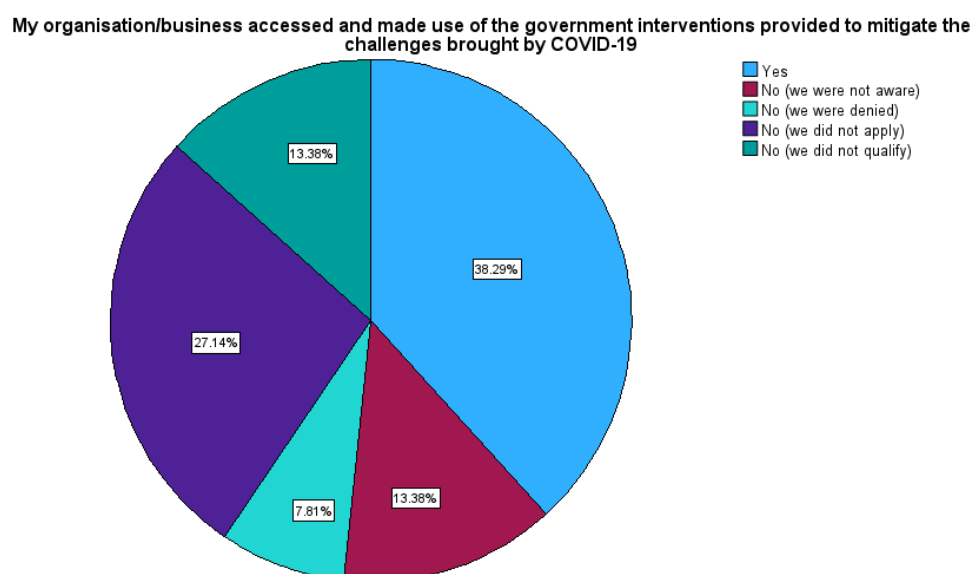


Figure 6c: Access and usage of government intervention programmes by SMMEs in Botswana during the COVID-19 pandemic

Only 38.3% of SMMEs accessed and utilised the various government interventions made available to the businesses (Fig 6c), implying that 61.7% of SMMEs did not access and utilise the government intervention programmes for some reason.

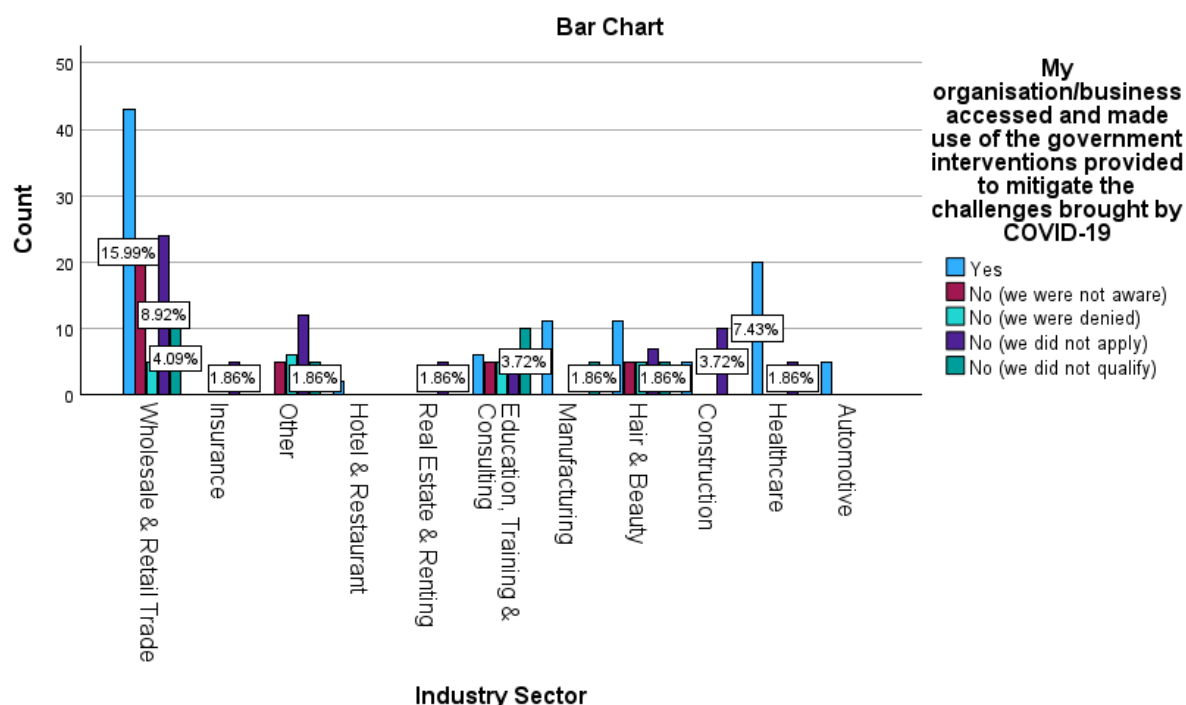


Figure 6d: Access and usage of government intervention programmes by SMMEs industry sectors in Botswana during the COVID-19 pandemic

Access and usage of government intervention programmes was highest in the Wholesale & Retail Trade sector (16%), followed by the Healthcare sector (7.4%), and Manufacturing, and Hair & Beauty sectors. Not applying was the most cited reason for not accessing and utilising government intervention programmes, while some either did not qualify or were denied for for some reason

Access and usage was highest in the Wholesale & Retail Trade sector (16%), followed by the Healthcare sector (7.4%), then Manufacturing, and Hair & Beauty sectors (Fig 6d). Not surprisingly, the trend observed with respect to awareness, was mirrored in the trend on access and utilisation of government programmes/schemes (Table 1), implying a link between level of awareness and access and utilisation of government intervention programmes. The wholesale and retail trade had the highest awareness level and, correspondingly, the highest access and utilisation as well. The trend can also be observed in the hair and beauty sector. However, the trend is not as clear in other sectors such as healthcare, education, training & consulting, and manufacturing sectors.

CEDA (2023) reported that many SMMEs faced difficulties in accessing government programmes and cited bureaucratic hurdles and stringent eligibility criteria as the cause. Some businesses lacked the necessary documentation or financial literacy to apply successfully for the loans (Citizen Entrepreneurial Development Agency (CEDA)., 2023). BIDPA (2022) states that only 40% of the targeted SMMEs could access the financial relief programs, with the remaining struggling to meet the requirements or unaware of the available support. Not applying was the most cited reason for not accessing and utilising government intervention programmes,

while some either did not qualify or were denied for other reasons. The reasons advanced by respondents for not accessing and utilising government intervention programmes, policies and frameworks during COVID-19 were non-application (27.1%), non-awareness (13.4%), did not qualify/meet criteria (13.4%), and denied/rejected (7.8%) (Fig 6c). These statistics are worrying and imply that a significant proportion of SMMEs in Botswana might have been needlessly exposed to the threat of business failure during the COVID-19 pandemic. This is an important finding for Botswana because of the central role of SMMEs as drivers of economic growth in the country. Consequently, there is a need to review all the reasons advanced for non-access and utilisation of government interventions to distil out the root cause(s). Techniques such as the 5 why technique may be used for this purpose. Knowing why some SMMEs were not aware of the available interventions can assist in the design of future awareness campaigns of government programmes. When we know why some SMMEs did not qualify or meet the set criteria set for accessing the government programmes and schemes we will be able to make better decisions to increase access, uptake, and utilisation in future leading improved SMME resilience and survival. The government may also want to review the qualifying criteria to ensure that they are not unnecessarily stringent or arduous. Some SMMEs, for instance, expressed frustration with the 'Mabokodinku' scheme which required them to find and team up with five other companies in order to be considered for financial assistance. They did not understand why they needed to do this, yet the loan would be issued to the companies separately. The reasons for rejection of applications made to the various programmes and schemes also need to be revisited to dispel sentiments of corruption and favouritism that seem to permeate the SMME sector. Additionally, a review of reasons for rejection of applications can inform criteria revisions as necessary.

Other resilience strategy themes identified

Table 2: Other resilience strategies employed by SMMEs

Theme	Code	Description
Digital Communication and Collaboration	Digital Communication	Cost-effective Digital Solutions
Workforce Management	Workforce Adjustment	Changes in workforce/staffing in response to challenges
Alternative Service Delivery	Teleconsultation	Use of remote communication technologies to overcome social distancing limitations.
No Strategy	No Strategy	No specific or deliberate strategy was adopted

Other themes that emerged from the thematic analysis of the open-ended questions in the questionnaire included employee support and well-being and (Table 2). Under employee support and well-being, respondents advocated for putting in place programmes and interventions to assist employees cope mentally with the pandemic. Employee mental health is arguably an important focus point for SMMEs in crisis times due to the elevated levels of uncertainty and difficulties related to work and social aspects of their lives. Inadequate attention to these issues inevitably has a domino effect on SMME productivity and ultimately survival.

4.2 Correlations & statistical significance testing

Resilience strategy vs challenges encountered

Table 3: Chi-Square Tests: Correlation Between Most Cited Challenges and Most Used Resilience Strategies

Challenge vs Resilience Strategy	Pearson Chi-Square-Asymptotic Significance (2-sided)	Interpretation
FINANCIAL CHALLENGES		
Financial Challenges vs Strategic Resilience Strategy	.110	Statistically insignificant
Financial Challenges vs Technological Resilience Strategy	.001	Statistically significant
Financial Challenges vs Communication Resilience Strategy	.001	Statistically significant
Financial Challenges vs Operational Resilience Strategy	.001	Statistically significant
TECHNOLOGICAL CHALLENGES		
Technological Challenge vs Strategic Resilience Strategy	.001	Statistically significant
Technological Challenges vs Technological Resilience Strategy	.527	Statistically insignificant
Technological Challenge vs Communication Strategy	.001	Statistically significant
Technological Challenge vs Operational Resilience Strategy	.002	Statistically significant
HUMAN RESOURCE CHALLENGES		
Human Resource Challenge vs Strategic Resilience Strategy	.001	Statistically significant
Human Resource vs Technological Resilience Strategy	.001	Statistically significant
Human Resource Challenges vs Communication Resilience Strategy	.001	Statistically significant

Human Resource Challenge vs Operational Resilience Strategy	.026	Statistically significant
STRATEGIC CHALLENGES		
Strategic Challenge vs Strategic Resilience Strategy	.002	Statistically significant
Strategic Resilience Strategy vs Technological Resilience Strategy	.001	Statistically significant
Strategic Challenge vs Communication Resilience Strategy	.556	Statistically insignificant
Strategic Challenges vs Operational Resilience Strategies	.001	Statistically significant

The Pearson Chi-Square values obtained indicate that there was a statistically significant correlation between most challenges and the most used resilience strategies during COVID-19.

Chaurura and Dar (2024) found that the three most encountered challenges for SMMEs in Botswana during COVID-19 were financial challenges, technological challenges, and human resource challenges in that order. In this study the top four most used resilience strategies by SMMEs in Botswana during COVID-19 were strategic resilience strategies, technological resilience strategies, communication resilience strategies, and operational resilience strategies respectively (Fig 1).

Operational resilience strategies and communication resilience strategies had statistically significant associations with all the three most encountered challenges among SMMEs in Botswana during COVID-19, and communication and technological resilience strategies were significantly associated with only two of the three most encountered challenges among Botswana SMMEs during COVID-19. This points to the reliance of SMMEs on strategies focused on communication and operational approaches maybe because these have less demand on there already fragile resources.

The most used resilience strategy, strategic resilience strategy, was found not to have a statistically significant association with the most encountered challenge during COVID-19, financial challenge. This implies that strategic resilience strategies may not have been used to a sufficiently high level to address financial challenges among SMMEs in Botswana during COVID-19. This category of strategies was however found to have a statistically significant association with technological and human resource challenges, implying their widespread use to address these challenges.

Technological resilience strategies were significantly associated with two of the three most encountered COVID-19 era challenges, including the most encountered one, financial challenges. It was, however, curiously not significantly associated with technological challenges. This is unexpected although resilience strategies used may not exhibit a one-to-one relationship with challenges encountered. There is still some expecta-

tion that technological resilience strategies would be employed by most to mitigate technological challenges, especially when the challenge is correctly identified by the entities as in this case. This may imply that SMMEs in Botswana used technological approaches in areas that did not need it while living out those areas that needed technological interventions. It could also mean that the specific sub-categories of technological resilience strategies investigated were not appropriate or did not address the specific technological strategies encountered. This finding may need further investigation to better understand the dynamics at play.

Communication resilience strategies were found to have a statistically significant association with financial challenges, technological challenges, and human resource challenges identified by Chaurura & Dar (2024) (Table 3).

Significance testing using the Pearson Chi-Square test indicated a statistically significant association between industry sector and awareness of government intervention programmes among SMMEs in Botswana during the COVID-19 pandemic (Table 3). The highest awareness was recorded among respondents from the Wholesale & Retail Trade sector (29%), followed by Hair & Beauty sector (12.3%), and Education, Training & Consulting (9.7%) (Fig 6b). Very low awareness levels were recorded among SMMEs in the insurance, real estate & renting, and automotive sectors at a mere 1.9%. This trend may be responsible for the trend observed in accessing and utilising government programmes and schemes by SMMEs in Botswana during the pandemic.

The relationships, based on the statistical significance tests described above, can be depicted as shown in Figures 7a-d below:



Figure 7a: Association of strategic resilience strategy and the most encountered challenges during COVID-19.



Figure 7b: Association of technological resilience strategy and the most encountered challenges during COVID-19.

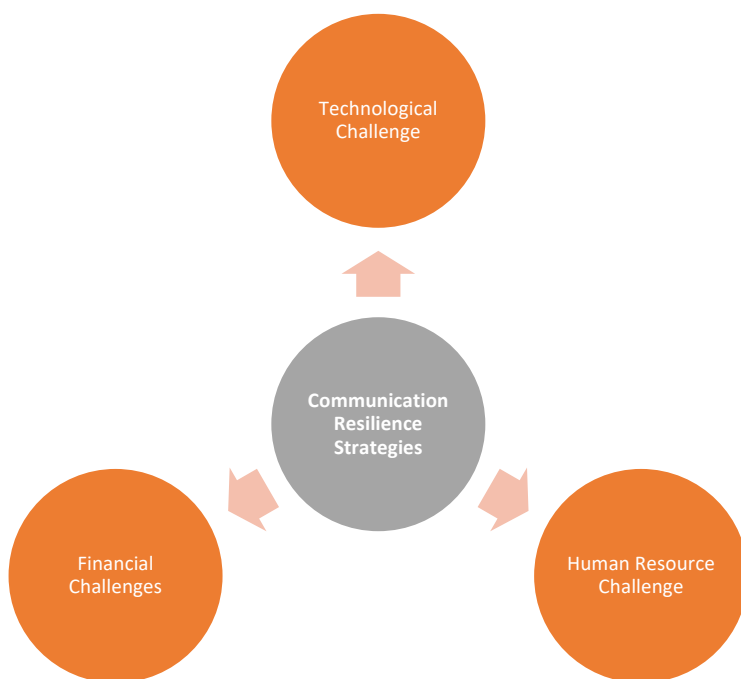


Figure 7c: Association of communication resilience strategies and the most encountered challenges during COVID-19.

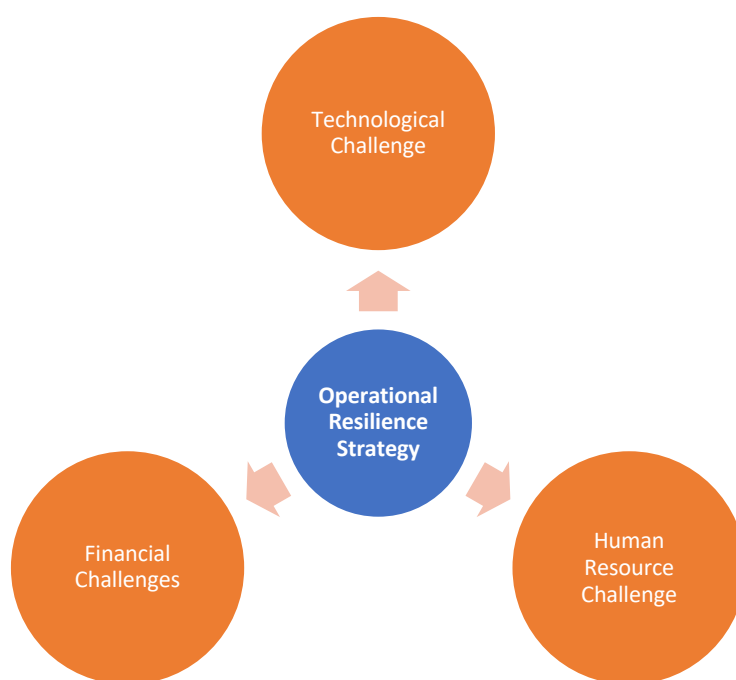


Figure 7d: Association of operational resilience strategy and the most encountered challenges during COVID-19.

5. Conclusion

SMMEs in Botswana employed several strategies to counter the negative impact of the pandemic. The top four strategies used were strategic resilience strategies (77.7%), technological resilience strategies (68.8%), communication resilience strategies (58.6%), and operational resilience strategies (54.6%). The leading strategies used under each of these categories were as follows:

- Strategic resilience strategies- monitoring of the competitive environment (79.6%),
- Technological resilience strategies- investing in digital tools (31.3%),
- Communication resilience strategies- transparency with stakeholders (83.3%)
- Operational resilience strategies- flexible staffing solutions (54.6%)

It was found that there were industry-sector related associations in resilient strategy usage. The wholesale & retail sector led in the usage of all the key resilience strategies employed during the pandemic as demonstrated in this study. This may be reflective of the Botswana SMME industry structure which is indeed dominated by the wholesale & retail sector. Consequently, the Botswana government's sentiments on the urgent need to diversify the economy are well placed.

Access and utilisation of government programmes and specific policies, regulations, and frameworks created to assist and safeguard the SMME sector was treated as a resilience strategy in this study as it has the potential to enhance SMME survival if proactively and creatively used by SMMEs as reported by other researchers. Again, the wholesale & retail sector was found to have led in the access and usage of the various government initiatives made available to alleviate the negative impact of the pandemic. The study established that only 38.2% of SMMEs in Botswana accessed and utilised government initiatives made available during the COVID-19 pandemic, of which 16% came from the wholesale & retail sector alone. This implies that 61.71% of SMMEs across all sectors did not access and use these initiatives and were therefore exposed to the risk of failing and

closing. The reasons advanced by respondents for this scenario were that they did not apply (27.14%), they were not aware of the initiatives (13.38%), they did not qualify as per specified criteria (13.8%), and they were denied/rejected (7.81%).

Associations were found between the most used strategies and the key challenges previously identified (Chaurura & Dar, An Evaluation of the Nature and Extent of Challenges Encountered by Small, Medium, and Micro Enterprises (SMMEs) in Botswana During COVID-19, 2024). Operational and communication resilience strategies were found to be significantly associated with all three key challenges previously identified, while strategic and technological resilience strategies were significantly associated with at least two of the previously identified key challenges. It is noteworthy that three out of the four most used resilience strategies were employed in addressing the most encountered challenge during COVID-19, financial challenges. The same proportion of resilience strategies was also used against technological challenges, the second most encountered challenge during the pandemic. This reflects a good focus and strategy alignment on the part of SMMEs in addressing the important challenges that they experienced during COVID-19. Whether this focus and alignment succeeded in effectively responding to the said challenges is a subject for further scrutiny.

In conclusion, SMMEs in Botswana used various strategies to respond to the ravages of the COVID-19 pandemic, including various government initiatives. The SMME sector seems to be dominated by the wholesale and retail sector therefore there may be urgent need to diversify the economy to make it more vibrant and enduring. The government of Botswana may need scrutinise more closely the specific initiatives aimed at promoting the SMME sector to better understand reasons for non-access and utilisation in order to inform the setting of selection criteria that are not self-defeating. There is need to further investigate the effectiveness of the resilience strategies used by SMMEs in Botswana during the COVID-19 pandemic so that these lessons can inform SMME responses to future crises of a similar nature.

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7. Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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