



EVALUATING SMALL AND MEDIUM-SIZED ENTERPRISES' RESILIENCE IN SOUTH AFRICA

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Abstract

Research background: Small and medium-sized enterprises (SMEs) face unique challenges that require a deeper understanding of the mechanisms that contribute to their resilience in a dynamic economic landscape.

Purpose: This study investigates the factors that impact the resilience of SMEs, highlighting strategic partnerships, technological advancements, employee engagement, and customer relationships as pivotal elements.

Research methodology: Employing Yamane's formula and purposive sampling, the research involved the distribution of a closed-ended questionnaire via email, resulting in an 85% response rate from 153 SME owners and managers.

Results: Utilizing a multiple linear regression analysis, the research findings revealed an adjusted R-squared of 94.50%, signifying a significant influence of the identified factors on SME resilience in South Africa. Notably, the statistical significance of strategic partners management, technology adoption, employee engagement, and customer relationship management (CRM) emphasizes their contributions to SME resilience.

Novelty: Enhancing SME resilience involves actively cultivating strategic partnerships for effective disruption anticipation and response. Prioritizing the adoption of relevant technologies, supported by policymakers, can elevate efficiency and adaptability. Crucially, investment in a positive work culture through employee engagement, continuous training, and adaptive human resource strategies is vital.

Moreover, businesses should prioritize customer-centric approaches, adopting effective CRM strategies to comprehend customer needs and fortify their market presence.

Keywords: SME Resilience, Strategic Partnerships, Technological Advancements, Employee Engagement, Customer Relationships.

JEL classification: L25, M12, O32

Introduction

The global significance of the small and medium enterprise (SME) sector remains undeniable, irrespective of a country's current economic development stage (Okere, Ibe, Muoneke, Nwaeze, 2023). Utete and Zhou (2024) emphasize that SMEs play a pivotal role in a nation's economic, technological, and social progress. Their impact extends to the global economy, contributing significantly to the Gross Domestic Product (GDP) and elevating the overall living standards of the population. In South Africa, SMEs constitute approximately 91% of formal businesses, employing about 60% of the workforce and contributing around 34% to the GDP (Department of Small Business Development, 2020, Enaifoghe, Ramsuraj, 2023). Acknowledging the evolving economic landscape, the Small Enterprise Development Agency of South Africa (SEDA) recognizes the need for SMEs in South Africa to adapt to new changes, especially in light of recent economic activities (Msomi, Olarewaju, 2021). Msomi and Olarewaju (2021) underscores the essential role of South African SMEs in achieving socio-economic objectives, serving as crucial drivers of economic growth, innovation, and job creation. However, it is disheartening that a significant majority of these SMEs face rapid failure. Desraj (2021) lament that, despite the sector's importance and the support it receives in South Africa, over 80% of these businesses succumb within three years of starting up. This alarming failure rate underscores the critical need for resilience among SMEs, an increasingly vital factor for their survival and prosperity in the face of challenges such as economic fluctuations and global crises (Desraj, 2021). In light of this, the imperative of cultivating resilience emerges as a strategic imperative for SMEs, positioning them to navigate adversities and thrive amidst uncertainties.

Resilience is the ability of a system, entity, or individual to cope, adapt, and grow in the face of stressors and changes (Ramezani, Camarinha-Matos, 2020). It is a dynamic process that

requires adjusting to new realities, recovering from setbacks, and learning to perform better in the future. According to Zighan and Ruel (2023), for SMEs, resilience implies the ability to withstand turbulent economic environments, manage risks, and leverage opportunities for growth and survival. Several factors have been suggested as key influencers of SME resilience. Among these are strategic partners management (Franco, Godinho, Rodrigues, 2021), technology adoption (Costa, Castro, 2021), employee engagement and training (Iskandar, Pahrijal, Kurniawan, 2023), and customer relationship management (Ogbu Edeh, Ugboego, Chibuike, 2019). Strategic partners management involves building alliances and collaborations that can provide resources, support, and market access. Technology adoption refers to the use of modern tools, techniques, and platforms to improve business processes and outcomes. Employee engagement and training involve motivating employees, enhancing their skills, and fostering a positive work environment. Customer relationship management refers to strategies to manage and improve relationships with customers.

In South Africa, studies have shown that these factors significantly influence SME resilience. For instance, a study conducted by the Sawers (2007) found that SMEs with strategic partnerships were 1.6 times more likely to survive compared to those without partnerships. According to a survey conducted by the South African Small Business Institute (SASBI), 68% of SMEs reported that strategic partnerships with other businesses or organizations played a significant role in their ability to weather economic challenges. Similarly, a study by Khalil, Abdelli and Mogaji (2022) showed that SMEs that adopted technology were 2.3 times more likely to withstand economic downturns than those that did not. Research conducted by the Department of Trade and Industry (DTI) revealed that SMEs that embraced technology solutions, such as cloud computing and digital marketing, exhibited a 25% increase in revenue and a 20% improvement in operational efficiency over a three-year period. Furthermore, a survey by Gordon (2020) indicated that businesses with high employee engagement and training had a 50% lower failure rate compared to those with low engagement. Lastly, a study by Hassan, Mohamed Haniba and Ahmad (2019) found that SMEs with effective customer relationship management had a 40% higher survival rate compared to those without such systems. Market research by the Nielsen Company highlighted that SMEs with a strong focus on customer relationship management achieved a 20% higher customer retention rate and a 15% increase in referral business.

Despite these insights, there is limited comprehensive research that explores these factors together and their combined impact on SME resilience, particularly in South Africa. Therefore, this study aims to fill this gap by investigating the role of strategic partners management,

technology adoption, employee engagement and training, and customer relationship management as key influencers of SME resilience in South Africa.

1. Literature review

The resilience of SMEs has garnered increasing attention in the face of growing economic uncertainties, globalization, and technological disruptions. As key contributors to economic development and employment, the ability of SMEs to withstand and recover from adversities is of paramount importance. This literature review seeks to explore the multifaceted nature of SME resilience, with a focus on strategic partnerships, technological advancements, employee engagement, and customer relationships as critical determinants in enhancing the adaptive capacity and sustainable performance of these enterprises.

1.1. Strategic partners management and SMEs resilience

Strategic collaborations present a potential avenue for SMEs to fortify their resilience, enabling them to effectively navigate interdependencies and confront uncertainties and disruptions (Vargo, Seville, 2011). SMEs rely heavily on external networks to access crucial resources like knowledge, technology, finance, and skills, which are pivotal for innovation and growth (Jordão, Novas, Gupta, 2020). These networks extend beyond conventional buyer-supplier relationships and encompass the various connections SMEs establish within their ecosystems through the exchange of products, services, assets, or participation in open innovation and collaborative ventures (Vargo, Seville, 2011; Oladele, 2022; Shahzad, Takala, 2022). Strategic partnerships, involving formal agreements among firms, including competitors, or collaborations between public and private entities, aim to pool resources and/or share costs with the primary motivation of fostering innovation and/or commercialization (Msomi, Yearwood, Msomi, 2022; Vivona, Demircioglu, Audretsch, 2023). SMEs can bolster their resilience by initiating strategic partnerships, actively engaging with their communities, and proficiently managing integration (Jordão, Novas, Gupta, 2020). Furthermore, Nguyen et al. (2022) opined that SMEs enhance their resilience through investments in digitalization, innovation, training, reestablishing connections with supply chain partners, and implementing effective cost management practices. Recent studies have started to explore the relationship between strategic partners management and SMEs resilience. Ferreira and Franco (2020) found that strategic partnerships help SMEs overcome their resource limitations, enhance their capabilities, and improve their resilience. Additionally, research has emphasized the

significance of cooperation, collaboration, and strategic partnerships in enhancing the resilience of SMEs, especially in the face of crises like the COVID-19 pandemic. Similarly, Klein and Todesco (2021) argued that strategic partnerships allow SMEs to access new technologies, markets, and skills, which improve their adaptability and resilience. However, they also noted that the management of these partnerships is critical, as poor management leads to conflicts, inefficiencies, and undermine the resilience of SMEs. In a more recent study, Alberti, Ferrario and Pizzurno (2018) found that the effective management of strategic partnerships enhance the resilience of SMEs by improving their ability to anticipate, respond to, and recover from disruptions. They suggested that this is achieved through the sharing of information, resources, and risks, and the coordination of activities and decision-making.

1.2. Technology adoption and SMEs resilience

SMEs can improve their resilience by adopting technology. Technology adoption refers to the acceptance, integration, and utilization of new technologies within a business's operations (Alazab, Alhyari, Awajan, Abdallah, 2021). It encompasses various activities, including the identification of suitable technologies, the decision to adopt these technologies, and their successful implementation and use. Technology adoption help SMEs to withstand adversity and adapt to new situations, such as during the COVID-19 pandemic (Ausat, 2023). However, SMEs are often marginalized in the adoption of technologies and innovations, particularly in the realms of digitalization, and may lack the level of maturity to reach the designated levels of digitalization (Klein, Todesco, 2021). The impact of digital technologies on SMEs' resilience during the COVID-19 pandemic has been studied, and the findings suggest that digital technology adoption increases SMEs' resilience during disruptive situations. Studies show that technology adoption offer numerous benefits to SMEs, including increased efficiency, improved product and service quality, expanded market reach, and enhanced competitiveness (Ausat, 2023). However, the process of technology adoption can also be challenging, with barriers such as lack of resources, skills, and knowledge, and resistance to change (Ma, Lee, 2019). The significant challenges in technology adoption for SMEs include the cost of technology and infrastructure. During the COVID-19 pandemic, technology adoption has been identified as a survival strategy for SMEs, helping them enhance their resilience and operational capabilities. Nguyen et al. (2020) found that the adoption of digital technologies improved the resilience of SMEs during the COVID-19 pandemic by enabling remote work, digital sales channels, and online communication with customers. Similarly, Rodríguez-Espíndola, Chowdhury, Dey, Albores and Emrouznejad (2022) demonstrated that the adoption

of advanced manufacturing technologies improved the resilience of manufacturing SMEs by enhancing their flexibility, responsiveness, and efficiency. In another study, Verdolini, Bak, Ruet and Venkatachalam (2018) showed that the adoption of environmental technologies improved the resilience of green SMEs by reducing their dependency on non-renewable resources, improving their reputation, and opening up new business opportunities.

1.3. Employee engagement, training, and SMEs resilience

The role of human resource practices, specifically employee engagement and training, in enhancing the resilience of SMEs has attracted significant attention in recent literature. Employee engagement refers to the emotional commitment an employee has to an organization and its goals, leading to the use of discretionary effort (Gupta, Sharma, 2016). Engaged employees are more likely to be proactive, dedicated, and aligned with the organization's objectives (Iskandar, Pahriljal, Kurniawan, 2023). SMEs have a staff engagement advantage due to their size, which fosters open communication, high levels of employee participation, and strong bonds (Ajayi, Odusanya, Morton, 2017). An engaged workforce in SMEs leads to lower turnover, higher productivity, and increased innovation, ultimately contributing to business growth and resilience. Research has shown that enhancing employee engagement leads to improved performance, increased customer satisfaction, and higher profitability (Heymann, 2015). While large organizations have often been the focus of these studies, recent research has begun to identify the importance of employee engagement in SMEs (Gupta, Sharma, 2016). Employee training is a planned effort by an organization to facilitate employees' learning of job-related skills and behaviors (Huang, 2019). It enhances the capacity of employees to perform their current job and prepares them for future roles within the organization. Training programs have been shown to improve organizational performance, adaptability, and competitiveness (Wijaya, Suasih, 2020). Particularly in SMEs, where resources are often limited, employee training can be a critical factor for success (Georgiev, Ohtaki, 2020). Iskandar, Pahriljal and Kurniawan (2023) found that employee engagement and training enhance SMEs resilience by improving their ability to anticipate, respond to, and recover from disruptions. Similarly, Huang (2019) demonstrated that training and engagement cultivate a learning culture within SMEs, which fosters adaptability and resilience. They found that engaged and trained employees are more likely to identify changes in the business environment, devise innovative solutions, and execute effective responses. Ajayi, Odusanya and Morton (2017) also highlighted that employee engagement and training enhance the resilience of SMEs by improving their operational efficiency and effectiveness. Engaged employees are more likely to take ownership

of their roles, demonstrate a higher level of commitment, and contribute more effectively to the organization's goals. When combined with effective training, this leads to a more competent, adaptable, and resilient workforce.

1.4. Customer relationship management (CRM) and SMEs resilience

CRM is a strategic approach that is focused on creating and maintaining lasting relationships with customers, with the goal of enhancing customer loyalty and ultimately maximizing profitability (Boadu, Achiaa, 2019). CRM involves managing all interactions with customers through multiple touchpoints, including sales, customer service, and marketing (Singh, 2023). The adoption and effective implementation of CRM have been linked to a variety of benefits, including improved customer loyalty, increased cross-selling and up-selling opportunities, better customer service, and enhanced profitability (Khan, 2023). However, these outcomes hinge on effective implementation, which would be challenging, particularly for SMEs due to resource constraints (Boadu, Achiaa, 2019). The relationship between CRM and SMEs resilience has been explored in several studies. For instance, Andrade, Espejo, García-Contreras and Santos (2023) found that effective CRM enhance SMEs resilience by improving their ability to anticipate and respond to changes in customer needs and preferences. Similarly, Vide, Hunjet and Kozina (2021) argued that CRM bolster the resilience of SMEs by enhancing customer loyalty and reducing dependency on individual customers. They also noted that CRM provide valuable market intelligence, allowing SMEs to identify and respond to emerging threats and opportunities. Yawised, Apasrawirote and Padgate (2021) explored the impact of CRM in the context of SMEs during economic downturn. Their findings suggested that enterprises with strong CRM practices were more resilient during a crisis, due to their ability to maintain customer loyalty and secure repeat business.

1.5. Theoretical model

The Dynamic Capabilities Theory, initially proposed by Teece, Pisano, and Shuen in 1997, focuses on an organization's ability to adapt, reconfigure, and integrate internal and external competencies to address rapidly changing environments (Alkhamery, Zainol, Al-Nashmi, 2021). Under the Dynamic Capabilities Theory, according to Conz and Magnani (2020) SME resilience are viewed as the outcome of the organization's capacity to dynamically respond to external shocks, exploit new opportunities, and continuously renew and reconfigure its resource base (Conz, Magnani, 2020). The theory highlights three critical capabilities essential for organizational resilience: Sensing (perceiving changes), Seizing (prompt and decisive action),

and Reconfiguring (adapting internal resources) (Dyduch, Chudziński, Cyfert, Zastempowski, 2021). SMEs need to recognize the importance of strategic partnerships, technological advancements, employee engagement, and customer relationships to enhance their resilience. Efficient resource utilization, quick and decisive actions, and continual adaptation are key components of building and sustaining organizational resilience for SMEs.

1.6. The conceptual framework

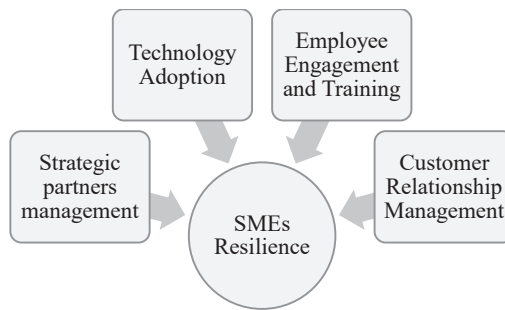


Figure 1. An illustration of the proposed model

Source: authors' design (2023).

2. Research methodology

The research adhered to a positivist paradigm, choosing a quantitative research approach to systematically investigate factors influencing the resilience of SMEs. These factors included strategic partnerships, technological advancements, employee engagement, and customer relationships. The data collection process utilized a closed-ended questionnaire featuring a five-point Likert scale. The target audience comprised owners and managers of SMEs situated in the eThekweni area, falling under the jurisdiction of the Durban Chamber of Commerce and Industry (DCCI). Notably, more than 600 SMEs in KwaZulu-Natal are affiliated with both the DCCI and SEDA, organizations actively involved in supporting small businesses in Durban (Olarewaju, Msomi, 2021). This study specifically focused on SMEs located in the Central Business District (CBD) of KwaZulu-Natal in Durban, with a particular emphasis on those with a workforce ranging from 10 to 200 employees. While the sample comprised SMEs with 10 to 200 employees, focusing on the Durban CBD, the limitation of self-reporting by owners

and managers raises the potential for response bias. The aim was to identify the predominant factors influencing the resilience of these SMEs. The study intended to draw its sample from a population of 600, seeking a sample size of 180. Yamane's formula for sample size calculation, known for its simplicity, guided this process. Ultimately, a sample size of approximately 180 individuals was chosen, employing purposive sampling as it allowed the researcher discretion in selecting a representative group of business owners. Purposive sampling was chosen to ensure that only SME owners and managers who had decision-making authority participated.

Considering the diverse management structures within SMEs, which may involve businesses operated by owners or managers, the respondents selected for this study included individuals holding either of these roles. The collection of primary data was conducted through the distribution of questionnaires to identify respondents within the DCCI database, utilizing the QuestionPro software. Communication was facilitated through email, with each message containing a link to an online questionnaire. Respondents were encouraged to actively participate by accessing and completing the survey through the provided link. In instances where responses were deemed unsatisfactory or non-existent within a week of questionnaire delivery, the researcher implemented a proactive approach by sending reminder letters to stimulate participation, thereby ensuring the establishment of a robust and comprehensive data set. The data analysis aligns seamlessly with the specified objectives, involving the examination of patterns, interpretation, and drawing inferences from the analyzed data. This study engaged with 180 individuals representing SMEs in South Africa, operating within the small and medium enterprise sector. The response rate achieved was 85%, with active participation from 153 respondents in the data survey.

Data were analyzed using descriptive statistics (means and standard deviations) to describe the central tendencies and variability within the data. Correlation analysis was conducted to examine the relationships between the variables. Multiple regression analysis was performed to test the hypotheses regarding the factors influencing the resilience of SMEs. Before conducting the regression analysis, diagnostic tests were performed to ensure the validity of the model. These tests included:

1. **Multicollinearity Check:** Variance Inflation Factors (VIF) were computed to check for multicollinearity among the predictor variables. All VIF values were below the threshold of 10, indicating no significant multicollinearity issues.
2. **Homoscedasticity and Normality of Residuals:** The residuals were examined using graphical methods such as scatter plots and normal probability plots, confirming that the assumptions of homoscedasticity and normality were met. Normality was tested

using the Shapiro-Wilk test, and the model's overall fit was evaluated using R-squared and adjusted R-squared values.

3. **Model Specification:** The model specification was tested to ensure that all relevant variables were included and that the model was correctly formulated.
4. **Autocorrelation:** The Durbin-Watson statistic was calculated to check for autocorrelation in the regression model. Although autocorrelation typically applies to time-series data, the inclusion of this statistic was part of routine diagnostic checks. The Durbin-Watson statistic was within the acceptable range, through its relevance in this cross-sectional study.

These diagnostic checks ensured the robustness of the regression analysis results.

Subsequently, a reliability analysis was conducted to assess the scale employed in the study. The obtained Cronbach values indicate satisfactory reliability, affirming the robustness of the measurement instrument. The reliability analysis serves as a crucial step in ensuring the consistency and dependability of the data collection tool, ultimately enhancing the credibility of the study's findings.

Table 1. Reliability Analysis

Variables	No. of items	Cronbach alpha
1	2	3
SMEs Resilience	RES 1	0.727
	RES 2	0.582
	RES 3	0.639
	RES 4	0.695 0.722
Strategic partners management	SPM 1	0.743
	SPM 2	0.595
	SPM 3	0.771
	SPM 4	0.794 0.789
Technology Adoption	TAN 1	0.632
	TAN 2	0.673
	TAN 3	0.576
	TAN 4	0.786
	TAN 5	0.720 0.736

1	2	3
Employee Engagement and Training	EET 1	0.648
	EET 2	0.661
	EET 3	0.610
	EET 4	0.767 0.739
Customer Relationship Management	CRM 1	0.736
	CRM 2	0.704
	CRM 3	0.778
	CRM 4	0.732 0.792

Source: authors' calculation (2023).

The obtained results reveal Cronbach's alpha values for the variables under consideration. Specifically, the Cronbach's alpha for the SMEs Resilience (dependent variable) is 0.722, indicating a level of reliability that can be classified as good. Similarly, Cronbach's alpha for Strategic partners management (independent variable) is 0.789, also reflecting good reliability. Additionally, the Cronbach's alpha for technology adoption (independent variable) is 0.736, meeting the criteria for good reliability. Likewise, employee engagement and training (independent variable) demonstrates a Cronbach's alpha of 0.739, suggesting good reliability. Lastly, customer relationship management (independent variable) exhibits Cronbach's alpha of 0.792, meeting the threshold for good reliability. It is noteworthy that all of the tested variables yield Cronbach values falling within the range of 0.70 to 0.80, indicating consistent good reliability across the board.

3. Results

3.1. Statistics for description and correlations

The descriptive statistics for the variables under study are presented in Table 2. The mean values indicated a general agreement with statements related to the importance of strategic partnerships, technology adoption, employee engagement, and customer relationship management in fostering SME resilience. Standard deviations were computed for each variable to describe the dispersion of responses around the mean. Specifically, there is a substantial correlation between Strategic partners management and SMEs resilience, with an r-value of 0.62, indicating a moderate positive correlation. Similarly, the relationship between SMEs resilience and technology adoption yields an R-value of 0.75, signifying a strong positive

correlation. Furthermore, the correlation between SMEs resilience and employee engagement and training shows an R-value of 0.90, suggesting a highly positive correlation. Finally, the correlation between SMEs resilience and customer relationship management is 0.76, denoting a moderate positive correlation. Importantly, all four tested variables exhibit a statistically significant relationship with SMEs resilience.

Examining the standard deviation values, strategic partners management has the highest at 0.64, followed by employee engagement and training with a standard deviation of 0.56. Technology Adoption has a standard deviation value of 0.48, and customer relationship management has a standard deviation of 0.55. For the dependent variable of the study, SMEs resilience, the standard deviation is 0.52.

Table 2. Statistics for description and correlations

Variables	S.D.	Mean	1	2	3	4
1 – SMEs Resilience	0.52	4.18	–			
2 – Strategic partners management	0.64	3.73	0.62***			
3 – Technology Adoption	0.48	3.85	0.75***	0.71***		
4 – Employee Engagement and Training	0.56	3.87	0.90***	0.81***	0.73***	
5 – Customer Relationship Management	0.55	3.88	0.76***	0.71***	0.84***	0.69***

N = 153. Level of statistical significance: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

Source: authors' calculation (2023).

3.2. Multiple regression analysis

Multiple linear regression analysis serves as a valuable tool for predicting changes in the dependent variable based on the values of independent variables. The coefficient of determination quantifies the extent to which variations in the dependent variable can be explained by the independent variable. Moreover, Analysis of Variance (ANOVA) is employed to identify significant differences in means among the regression variables. It is crucial to distinguish between the R-value and R square; the former assesses the magnitude of the relationship between independent and dependent variables without indicating the direction of the relationship. In this study, the researcher's findings reveal an adjusted R-squared of 94.50%, signifying that the identified factors significantly influence the resilience of SMEs in South Africa. Merely 5.50% is ascribed to other factors impacting SME resilience in the country. The Durbin-Watson value, a measure of autocorrelation, is 2.298, falling within

the acceptable range of 1.5 to 2.5. Notably, all Variance Inflation Factors (VIF) in this study surpass 5, indicating elevated values.

Table 3. Statistics for description and correlations

Independent Variable	Dependent variables (Standardized Coefficients Beta)	Significant	Tolerance	VIF
Strategic partners management	0.11	0.046	0.17	5.47
Technology Adoption	0.31	0.001	0.08	13.23
Employee Engagement and Training	0.76	0.001	0.12	8.93
Customer Relationship Management	0.85	0.001	0.06	18.59
F Value	279.60			
R ²	0.95			
Adjusted R ²	0.95			
Durbin-Watson	2.30			

N = 153.

Source: authors' calculation (2023).

The initial hypothesis finds support in the results, revealing a significant correlation between strategic partners management (independent variable) and the resilience of SMEs (dependent variable), with a p-value of <0.05 (0.046). This underscores the substantial impact of strategic partners management on fostering resilience in small and medium enterprises. These findings are in line with those of Vargo and Seville (2011); Oladele (2022); Shahzad and Takala (2022) found that the effective management of strategic partnerships enhance the resilience of SMEs by improving their ability to anticipate, respond to, and recover from disruptions.

Proceeding to the second hypothesis, the investigation into whether technology adoption significantly impacts the resilience of SMEs demonstrates a substantial effect. The p-value of <0.001 (0.000) emphasizes the considerable influence of technology adoption (independent variable) on enhancing the resilience of SMEs. The results align with the research conducted by Nguyen et al. (2020) and Rodríguez-Espíndola et al. (2022) discovered that the incorporation of digital technologies played a pivotal role in enhancing the resilience of SMEs amidst the challenges posed by the COVID-19 pandemic. This improvement stemmed from the facilitation of remote work, the establishment of digital sales channels, and the utilization of online communication methods with customers.

Subsequent exploration into the influence of employee engagement and training on SME resilience unveils a meaningful relationship, with a p-value of <0.001 (0.000). This attests to the significant effect of employee engagement and training (independent variable) on the resilience

of SMEs, highlighting the interconnectedness of these factors. Huang (2019) illustrated that the development of a learning culture within SMEs, achieved through training and engagement, fosters adaptability and resilience. The study showed that employees who are both engaged and well-trained are more inclined to recognize shifts in the business environment, generate innovative solutions, and implement effective responses. Additionally, Ajayi, Odusanya, and Morton (2017) underscored the significance of employee engagement and training in bolstering the resilience of SMEs, emphasizing the improvements in operational efficiency and effectiveness that result from these practices.

Lastly, the expected impact of customer relationship management on SME resilience is supported by the results presented in Table 3. The p-value of <0.001 (0.000) underscores the significant influence of customer relationship management (independent variable) on the resilience of SMEs. Noteworthy is that among the four tested factors, customer relationship management stands out with larger standardized coefficients Beta (β) at 0.85, indicating its paramount influence on resilience. The outcomes align with previous research conducted by Andrade, Espejo, García-Contreras, and Santos (2023) who demonstrated that effective Customer Relationship Management practices contribute to the resilience of SMEs. This is achieved by enhancing their capability to anticipate and respond to shifts in customer needs and preferences. Furthermore, Vide, Hunjet, and Kozina (2021) asserted that CRM strategies play a crucial role in fortifying the resilience of SMEs. This is accomplished by fostering customer loyalty and decreasing dependence on individual customers, thus diversifying and strengthening the business's customer base.

Conclusion and recommendations

This study employed a positivist paradigm and a quantitative research approach to systematically investigate the factors influencing the resilience of SMEs in South Africa. The research focused on strategic partnerships, technological advancements, employee engagement, and customer relationships as key factors affecting SME resilience. The multiple regression analysis conducted in this study provides valuable insights into the factors influencing the resilience of SMEs. The adjusted R-squared value of 94.50% indicates that the identified factors – strategic partners management, technology adoption, employee engagement and training, and customer relationship management – significantly contribute to explaining variations in SME resilience. A mere 5.50% is attributed to other unexplored factors

affecting resilience in the country. The Durbin-Watson value falls within the acceptable range, suggesting minimal autocorrelation in the data.

The findings affirm the initial hypotheses, demonstrating significant correlations between each independent variable and SME resilience. Strategic partners management, technology adoption, employee engagement and training, and customer relationship management all show substantial impacts on fostering resilience, supported by p-values below 0.05. These results are consistent with existing literature, emphasizing the importance of effective management practices in strategic partnerships, the adoption of technology, employee engagement and training, and customer relationship management in enhancing SME resilience. The study's outcomes align with previous research, reinforcing the importance of strategic partners management, technology adoption, employee engagement and training, and customer relationship management in fortifying SME resilience. These factors, as identified by the standardized coefficients Beta (β), play unique and interconnected roles. Notably, customer relationship management stands out with the largest standardized coefficient Beta (β) of 0.85, indicating its paramount influence on SME resilience. Theoretical insights drawn from the Dynamic Capabilities Theory align with empirical evidence, revealing that the identified factors significantly contribute to the resilience of SMEs. The theoretical framework, which emphasizes Sensing, Seizing, and Reconfiguring capabilities, proves instrumental in explaining how SMEs can dynamically respond to external shocks, exploit opportunities, and continually renew and reconfigure their resource base.

Based on the comprehensive investigation into factors influencing the resilience of SMEs, several key recommendations emerge to guide both SMEs owners and policymakers in fostering the resilience of SMEs in South Africa.

1. SME owners and managers are encouraged to actively seek and cultivate meaningful collaborations with other businesses, industry stakeholders, and support organizations. Establishing robust strategic partnerships can enhance the capacity of SMEs to anticipate and respond to disruptions, ultimately contributing to their overall resilience.
2. SMEs must embrace and invest in relevant digital technologies. This includes the adoption of digital platforms, automation tools, and other innovative solutions that can optimize operational processes and facilitate adaptability in the face of challenges. Policymakers should also consider initiatives that promote technology adoption within the SME sector.

3. SME owners and managers should prioritize creating a conducive working environment that fosters employee engagement and invest in ongoing training programs. This can enhance the adaptability and innovative capabilities of the workforce, contributing to the overall resilience of the SMEs.
4. SMEs are advised to prioritize building and maintaining strong relationships with their customer base. This involves understanding customer needs, preferences, and maintaining effective communication channels.

While this study has provided valuable insights into the factors influencing the resilience of SMEs in South Africa, it is essential to acknowledge its limitations so future research is needed. One limitation is the geographical focus on SMEs in Durban, South Africa. Future studies should consider expanding the scope to include SMEs from diverse regions and industries to ensure a more comprehensive understanding of resilience factors across different contexts. Another limitation lies in the reliance on a quantitative research approach, particularly the closed-ended questionnaire. Future research could benefit from incorporating qualitative methods such as interviews or focus group discussions to provide a more nuanced exploration of the experiences and perspectives of SME owners and managers.

Future research could mitigate this bias by incorporating triangulation through additional data sources, such as financial statements or external assessments. Additionally, this study did not track changes in SME resilience over time. A longitudinal approach in future research would offer insights into how resilience develops or diminishes in response to varying internal and external factors, thus providing a more comprehensive understanding of SME resilience dynamics.

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