

Strategic Resilience and Performance of Small and Medium Enterprises in the Construction Industry in Nairobi City County, Kenya

Kwamboka Sarah¹, Maina Samuel²

¹Student, Department of Business Administration, School of Business, Economics, and Tourism, Kenyatta University, P. O. Box 43844-00100, Nairobi, Kenya

²Lecturer, Department of Business Administration, School of Business, Economics, and Tourism, Kenyatta University, P. O. Box 43844-00100, Nairobi, Kenya

Abstract: Firm performance has become an enormously significant focus in today's business environment, especially by construction small and mid-size enterprises (SMEs) management. Strong performance translates into higher revenues, profits, and returns on assets, enabling the firm to invest in growth opportunities and ensure its long-term sustainability. Nairobi City County has been on the frontline to ensure SMEs in the construction sector are revamped well to be on the global map and support the country's economic growth. However, despite the effort, 60% of the Nairobi City County SMEs in the construction sector fail to break even to make a profit, thus the need for this research aimed to investigate impact of strategic organizational resilience on how SME perform in the Construction Industry within Nairobi County, Kenya. Distinct objectives here include: To establish impact of organizational learning, adaptive resilience, planned resilience and dynamic capabilities on progression of SMEs within Construction sector of the Nairobi City County, Kenya. This study adopted a descriptive type of research design, and rooted on Resource Based View theory, the Balanced Scorecard Model and the Dynamic Capabilities theory. The target population comprised of 108 registered small and mid-size enterprises firms operating in Nairobi City County with 198 respondents comprising of site manager and project engineers. The study utilized primary data collected from semi-structured type of questionnaire. The questionnaire had both open and close-ended queries. The research supervisor examined the validity of the data instrument. Using the Cronbach's alpha measure (α), variability was ascertained. The quantitative data that was obtained, assigned codes and fed into software called Statistical Packages for Social Scientists (SPSS Version 25) and subsequent analysis was done with descriptive statistics. The researcher used a multiple regression analysis to quantify how strongly related variables were in the study. Responses were summarized, using tables and figures, for additional analysis and for the researcher to be able to compare interesting trends. Different quantitative measures such as tabulations, percentages, and measure of central tendency (Mean and standard deviation) were applied when reporting the findings. Before then, through the normality and multi-collinearity test conducted, the Shapiro-Wilk test p-values except for the planned resilience variable, indicated that the data for organizational learning, adaptive capability, dynamic capability, and firm performance do not significantly depart from normality. Through Pearson correlation, and multi-regression analysis, organizational learning, adaptive capability, and dynamic capabilities exhibited a statistical and strong positive correlation with firm performance, while planned resilience and SMEs performance revealed a weak and non-significant value. The study however, recommends small and mid-size enterprises to embrace organizational learning, show value and promote the culture of continuous learning and improvement among its human personnel. Feedback and lessons learnt from past trainings should be incorporated actively into the current and the upcoming organizational projects. SMEs should have the capacity to not only adjust but also respond effectively to the dynamic circumstances, hurdles and the opportunities in its external environment. Moreover, SMEs should undertake proactive measures to scan emerging trends and opportunities and in turn create an environment that welcomes innovative ideas and changes that can further be explored. Position themselves in such a flexible manner that they can effectively respond to environmental dynamics through intentional creation, extension and modification of its resource base. Establish powerful stream of partnerships. Put up strategies in check to aid in sustainability of the implemented components of strategic resilience. Foster a culture of curiosity, questioning with progressive productivity within an organization. Key Performance indicators should be examined to gauge the growth of the firm in addition to any behavioral changes.

Keywords: Strategic Resilience, SMEs Performance

1. Introduction

Globally, there is an enormously significant focus in the current business environment, especially by construction small to midsize enterprises (SMEs) management [35]. The focus shift is because of a high emphasis on quality and safety standards, higher customer expectations, inherent risks, and uncertainties such as overdrafts, delays, and unforeseen events [1]. Also, the performance focus is due to its direct impact on financial viability, competitive positioning, stakeholder relationships, adaptability to changing market conditions, reputation management, and compliance with regulatory standards, showing its vital role

in the performance and sustainability of modern businesses as per Bu, Dang, Wang, et al. (2020).

In countries such as UK, Australia, and Pakistan, construction SMEs are performing well due to a business-friendly environment that encourages entrepreneurship and innovation, access to diverse financing options, a strong digital infrastructure with features like high-speed internet and sophisticated communication networks, and skilled talented workforce that SMEs can tap [17]. [35] states that, construction of SMEs has a fundamental bit in wheeling economic growth, innovation, and workforce expansion in many countries around the world. However, construction SMEs often face numerous challenges, including limited resources, intense competition, market volatility, and

regulatory pressures [8]. To thrive in such a dynamic business landscape, SMEs limited to construction sector should not only be centered on short-term performance but also develop strategic resilience to navigate through uncertainties and disruptions [42].

As revealed by [31], SMEs' performance in the construction sector is critical not only for their success but also for the overall economic well-being of communities and countries. In the United Kingdom for instance, construction SMEs are the cornerstone of the economy, with a rating of over 99.2% of all investments [19]; [4]. They make substantial contributions to GDP (approximately 52%), generating approximately 60% of private sector jobs. Additionally, SMEs in the UK reported 2.3 billion euros combine turnover in the year 2021, and increased growth rate by 0.2% between June to August 2021 during the recovery period of Covid-19.

The construction sector's SMEs in the UK have embraced the capacity to adapt, innovate, create strong relationships, and effectively manage risks enhancing their chances of achieving sustainable growth and success in their business landscape [9]. In Australia, construction SMEs are the lifeblood of the economy, making up approximately 98% of all businesses. They are vital contributors between 52 % to 57% of the total economy, providing jobs for around 7 million people, which accounts for about 68% of total private sector employment [32]; [22].

In Africa, several countries including South Africa, Rwanda, and Morocco have shown promising SME developments and achievements in the construction sector unlike Kenya which has shown promising development but the achievement is very little [40]. According to [18], the development and achievement are a result of the ongoing efforts and initiatives by various governments and private organizations in various African countries as they continuously shape and support the thickening of SMEs in the building sector across the whole continent. For instance, South Africa has a well-developed SME sector and a supportive ecosystem for small businesses as proven by [27]. The government has implemented various programs and initiatives to promote entrepreneurship, access to finance, and skills development [16]. [16] continue to allude that the country has a strong financial sector, infrastructure, and a relatively favorable business environment, which contribute to the success of SMEs in the construction sector, thus, contribute to approximately 34% of the total GDP as per [26].

In Kenya, the government took several measures to support SMEs within construction industry, immediately after the outset of the pandemic, Covid-19. As depicted by [35], the turnover tax on SMEs was reduced by 2% points to 1% and the microbusinesses with under 500,000 Kenyan shillings of annual sales across all SMEs (\$4,650) were exempted [12]. Additionally, expedition of VAT refunds and other overdue payments for the SMEs was done through allocation of a budget. During the study, a survey depicted that 42 percent of the businesses interviewed received a boost from the government, primarily in form of informational materials on virus containment. However, most felt the need for a more stretched tax relief by the government. December 2020, was

climaxed with the National Treasury approval of the Credit Guarantee Scheme (CGS) worth 3 billion Kenyan Shillings (\$28 million) for all SMEs, with a target increase to 10 billion Kenyan Shillings (\$93 million) in the middle course. However, despite the effort, 60% of the Nairobi City County SMEs in the construction sector fail to break even to make a profit, where some researchers such as [36] argued that 14% to 16% are unable to secure financial loans because of high-interest rate, although the impact of strategic resilience on the outcome of SMEs within Nairobi City County's construction industry, is still a huge gap that demands this research to explore.

1.1 Statement of the problem

Firm performance remains critical as it directly impacts the financial success of a company. [44] stipulated that strong performance translates into higher revenues, profits, and returns on assets, enabling the firm to invest in growth opportunities and ensure its long-term sustainability. Nairobi City County has been on the frontline to ensure SMEs in the construction sector are revamped well to be on the global map and support the country's economic growth [7]. So far, the construction industry contributes 15 percent of the GDP [28]. Kenya Vision 2030 identifies construction as major driver of the economy and projects a sectorial annual growth rate of 10%, which is yet to be achieved as revealed by [5].

At the beginning of the pandemic, Covid-19, the Kenyan government took several measures such as reducing the SMEs turnover tax by 2% and micro businesses with sales below 500,000 Kenyan Shillings annually were exempted across all SMEs (\$4,650) according to [12]. Moreover, the set aside a budget to speed up VAT refunds and other outstanding payments owed to SMEs. Consequently, in December 2020, the National Treasury approved a SMEs Credit Guarantee Scheme (CGS) worth 3 billion Kenyan Shillings (\$28 million) for all SMEs, with mid-course predicted spike to 10 billion Kenya shillings (\$93 million). However, despite the effort, 60% of the Nairobi City County SMEs in the construction sector fail to break even to make a profit, and struggle to operate efficiently.

Some researchers such as [36] argued that 14% to 16% of constructions SMEs are unable to secure financial loans because of high interest rates. Additionally, SMEs sometimes lack the much-needed expertise in planning, financing and cost control, designing, implementing, and completing a project. This drastically affects the firm's operational efficiency because the threshold of expectation is barely met. However, this is not the case in Nairobi City County SMEs in the construction sector as the government had already initiated several measures to better the SMEs' performance. [45] argued that businesses have to evaluate their management practices and performance as interrelated factors to improve operational efficiency, increase return on assets, and achieve higher profits.

Furthermore, numerous studies on the strategic resilience and performance of SMEs. For instance, [29]; [21], the authors however neither treated organizational learning as the mediating variable nor explore the root mechanisms or

processes, without which performance through organizational learning is void. Secondly, [410], the authors focused specifically on the service provision sector in Brazil, limiting generalizability of the findings to other sectors.

Other studies conducted by [2] did not provide a clear conceptual framework that defines and operationalizes concepts revolving around dynamic capabilities and the resilience of the organization. [20] study proved difficult to draw conclusions about causality, due to the type of the research design applied, i.e. cross-sectional. Additionally, [38] study collected data using questionnaires but did not provide details about the sample selection, sample size, or response rate which limits the ability to evaluate the representativeness and generalizability of the findings. Therefore, in light of the foregoing findings, there was a need to conduct a rigorous research with quantitative data and analysis to understand strategic resilience and its salient on construction SMEs performance in Nairobi City County, Kenya.

1.2 Specific Objectives of the Study

- 1) To establish the impact of organizational learning on the performance of SMEs in the construction niche within Nairobi City County, Kenya.
- 2) To assess the effect of planned resilience on the performance of SMEs in the construction industry in Nairobi City County, Kenya.
- 3) To determine the effect of adaptive capability on the performance of SMEs in the construction industry in Nairobi City County, Kenya.
- 4) To assess the effects of dynamic capabilities on the performance of SMEs in the construction industry in Nairobi City County, Kenya.

1.3 Significance of the Study

This study provides useful findings to stakeholders in the building industry in Kenya, which can be used in determining the appropriate strategic resilience practices to adopt to enhance performance and in overcoming the shortcomings facilitated by the COVID-19 menace. The construction industry, government agencies, and policy-makers can utilize these findings in improvement of the construction sector's preparedness in dealing with future pandemics and emergencies, by developing appropriate policies.

This study's outcome educates construction business owners, managers, and stakeholders on the importance of strategic resilience and how to formulate appropriate strategic resilience practices to ensure performance is not compromised during emergencies or pandemics. This study is an essential source of literature to be used by academicians when doing research in the area of strategic resilience. Finally, it provides information about strategic resilience practices within the construction sector, in Nairobi City County, hence adding to the body of knowledge.

The research contributes to the existing literature around strategic resilience and performance, helping SMEs better

understand the key drivers of success and providing practical recommendations for enhancing their performance and resilience. Policymakers can utilize the findings to design targeted support programs and policies that facilitate the development of resilient SMEs. Ultimately, this study aimed to foster a more favorable environment for SMEs and contribute to sustainable economic growth and development.

2. Theoretical Review

This study was anchored on these theories; Dynamic capabilities theory, Resource-Based View theory and Balanced Scorecard Model.

Resource-Based View Theory (RBV)

In 1991, Barney developed Resource-Based View Theory intending to explain firm resources that are not easily replicated, which have the potential to serve as a long-lasting competitive advantage. In 2009, Penrose reviewed the theory and added diversification strategy and productive opportunities as another key area of focus for an organization to enhance its performance. Penrose's work was significant as it conceptualized a firm as a set of coordinated resources that aids achievement of its objectives and strategic behavior.

The theory suggests that a company's performance and competitive advantage is majorly determined by its unique resource and capabilities as per [39]. Strategic resilience is closely linked to this theory as it emphasizes the development and management of resources that are not only rare but also inimitable, valuable and cannot be substituted as per [39]. Also, the companies that have these resources and know how to put them to use successfully may weather environmental shifts, triumph over obstacles, and maintain high performance over time. However, [33] argued that RBV provides descriptive rather than prescriptive guidance. The theory focuses on analyzing firm resources and capabilities without offering clear guidelines on how to develop or acquire those resources or how to effectively manage them. This lack of practical guidance limits its usefulness in informing strategic decision-making. [3] argued that the theory assumes that resources are relatively stable and unchanging over time, ignoring the dynamic nature of industries and markets. [3] continued to lament that RBV should incorporate a more dynamic perspective to address the challenges of managing and developing resources in rapidly changing environments.

Nevertheless, RBV was crucial in this study as it champions knowledge creation and sharing, change initiation and adoption, resource flexibility, and investing in innovation [37]. RBV recognizes that in dynamic and uncertain environments, there is need for firms to adapt and develop capabilities, effective in responding to the changes and exploit new opportunities.

Balanced Score Card (BSC) Theory

The development of the balanced scorecard theory in 1992 by Kaplan and Norton focused on business performance that is based on a holistic and integrated view. The theory

focused on an organization from the perspective of; financial stability, internal business processes, and customer perspective which address the aspect of customer satisfaction. It utilizes these perspectives to provides a more detailed understanding of the present performance of a firm. The Balanced Scorecard's purpose is to aid in the communication and implementation of the company's strategy. It is a framework of not only financial but also non-financial measures that are utilized in implementation of the company's strategic vision. However, [15] criticized the theory for oversimplifying complex organizational performance by reducing it to a few key performance indicators (KPIs) or metrics. The researcher claimed that the simplification leads to a narrow focus on quantitative measures and neglects other important aspects of performance, such as intangible assets, employee morale, and innovation, which may not be easily quantifiable.

However, according to [23], the BSC model can be assumed as it balances results measures (outcome that is, financial) and driver measures (customers' retention, internal processes and innovation and learning) due to its ability to put performance metrics closer to the strategy of the firm and to a vision that is long term. This has had the theory ranked an outstanding tool for evaluation. The theory remains effective in evaluation of managerial activities without bias of viewpoints. This is by giving tangible and intangible financial and non-financial aspects as well as evaluating satisfaction of a customer, a key in business [11]. [23] note that if the BSC model is properly implemented, it will help to create a new corporate culture and increase the profitability of an entity.

According to [10], the BSC is now quite a versatile tool; it has been applied to various sectors and organizations that have resulted to utilizing its perspectives and key performance indicators (KPIs) to their unique needs. This finding has further gained support and reported that its four perspectives are robust across most companies and industries, [42]. [42] further suggested that there is need for organizations to capacity-build for double-loop learning, improve return on assets, increase profitability, and improve operational efficiency. Therefore, the theory was relevant in this to guide on the key performance indicator for construction SMEs in Nairobi City County, Kenya.

Dynamic Capabilities Theory

Dynamic capabilities (DC) theory in 1997 by Teece et al. examined the firm's ability to combine, construct, and rearrange internal and external skills in response to changing surroundings. It presented a dependent path that allowed firms to adapt to dynamic surroundings by building, integrating, and reconfiguring their portfolio of resources and capabilities [24]. [6] wrote about micro-foundations for the following dimensions: detecting (finds and evaluates a chance), seizing (mobilizes resources to address an opportunity and captures value) and finally transforming (continuous process of renewing and reconfiguring intangible and tangible assets of the firm). This marked a crucial contribution to the DC theory.

DC theory gained another niche in the sector of strategic management for its focus on a firm's ability to identify opportunity, mobilize resources and continually renew its resources to respond to dynamic environments. However, the theory is not without its critics, [13] argued that the theory lacks clarity and consensus regarding its definition and operationalization. [13] continued to argue that the theory's conceptual framework is often vague and lacks precision, making it difficult to clearly define and measure dynamic capabilities. Without a clear understanding of what constitutes a dynamic capability, it becomes challenging to assess and compare the capabilities of different firms, limiting the theory's practical applicability.

Researchers have, in the past, utilized the dynamic capabilities to solve rigidity in capabilities [24], to put the information to practical use [14], and some, to explain how companies respond to change, [6] particularly considering the environmental setting. How dynamic capabilities and performance of an organization relate as per the empirical studies, has been deemed positive [34]. For example, while [14] portrayed how difference in such capabilities within the firm can affect the performance, this study emphasized on how even small differences can convert to significant impact on the firm's performance. From a global business point of view, [30] discovered that the overall firm's performance and specifically in the global market, can be increased and achieved through maximum exploitation of dynamic capabilities. Earlier on, the DC theory proposes that there is a causal link between it and a company's success [34]. This was supported by [16] who further emphasized that if dynamic capability is non-existent in a firm, its sustainability remains temporary. Additionally, the development of planned resilience and dynamic capabilities is to identify the foundation of a firm's competitive advantage at the enterprise level and it is determined by the firm's success or failure [34].

This theory recognizes the need for Nairobi City County construction SMEs to develop adaptive and flexible capabilities to cope with uncertainty and exploit new opportunities. The theory supports planned resilience through proactively building the capacity to anticipate and respond to disruptions, which aligns with the principles of dynamic capabilities. By cultivating dynamic capabilities and planned resilience, firms can enhance their ability to learn from experiences, adapt their strategies, and achieve better performance outcomes.

2.2 Conceptual Framework

The conceptual framework postulates diagrammatical influence of strategic resilience on performance of SMEs in construction sector within Nairobi City County, Kenya.

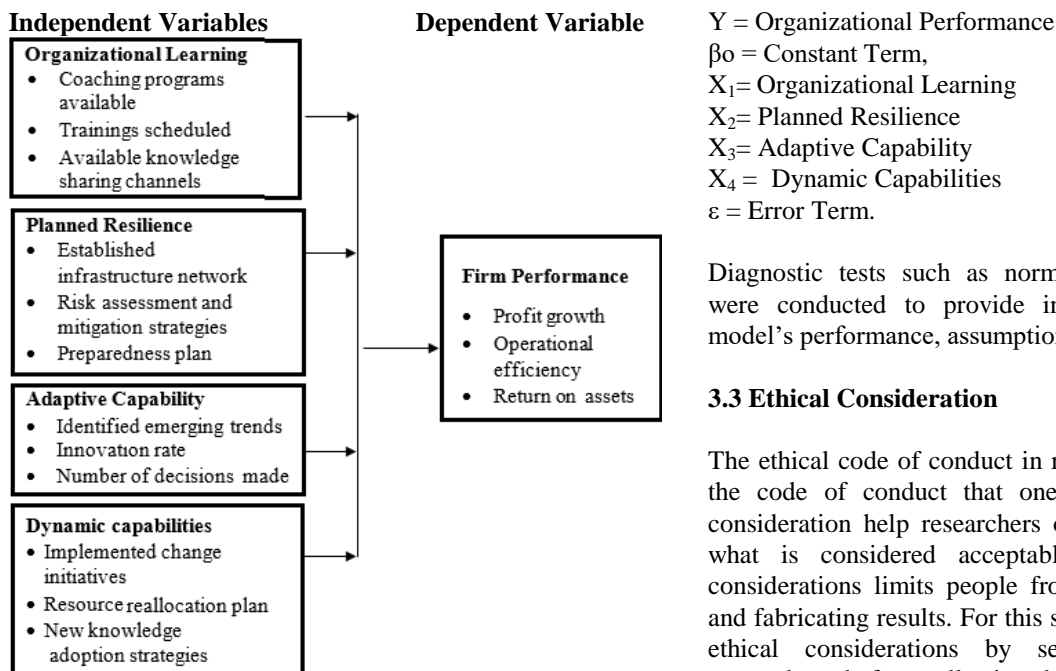


Figure 1: Conceptual Framework
 Source: Author (2023)

3. Research Methodology

This study used a descriptive research design to collect qualitative and quantitative data from respondents. The researcher employed this design because it accurately and systematically described the population under study and allow the researcher to analyze facts with ease and helped in developing an in- depth understanding of the research problem. The target population in for this study comprised the 108 registered SMEs in the construction sector operating in Nairobi City County which lie in the category of NCA 5 – NCA 8 according to NCA registration. Yamane (1976) formulae was used to calculate the sample size. Following the formula, a sample size of 99 SMEs was achieved.

3.1 Data Collection Instrument

Semi-structured questionnaire was used to collect up to date information as well as gather data that may not be obtained through other data collection method.

3.2. Data Analysis

Quantitative data obtained was exported into SPSS software version 21. Descriptive analysis such as frequencies and central tendency (Mean and standard deviation) were conducted and the result presented in distribution tables, pie charts and graphs to enable the researcher describe trends and provide explanation for interesting findings. Qualitative data obtained was subjected to thematic content analysis. In addition, to quantify the strength of the relationship between the variables, the researcher conducted a multiple regression analysis.

A multiple regression model was as follows;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$$

Where;

Y = Organizational Performance
 β_0 = Constant Term,
 X_1 = Organizational Learning
 X_2 = Planned Resilience
 X_3 = Adaptive Capability
 X_4 = Dynamic Capabilities
 ϵ = Error Term.

Diagnostic tests such as normality and homoscedasticity were conducted to provide insights into the regression model’s performance, assumptions, and potential issues.

3.3 Ethical Consideration

The ethical code of conduct in research help in determining the code of conduct that one needs to uphold. Ethical consideration help researchers operate within the limits of what is considered acceptable. Upholding the ethical considerations limits people from giving false information and fabricating results. For this study, the researcher ensured ethical considerations by seeking consent from the respondents before collecting data from them. Additionally, permits from all the relevant bodies were sought. The researcher ensured a high level of confidentiality as well. The research results and findings were solely used for the intended purpose while ensuring transparency and accountability.

4. Research Findings

4.1. Response Rate

Data collected revealed that 172 respondents submitted their responses against 198 total respondents. Therefore, the response rate translated to approximate 86.86%. The high response rate in the data collection effort was due to clear and compelling purpose that resonated with the respondents. In addition, the questions were user-friendly, ensuring ease of understanding and completion for the respondents. Furthermore, the study targeted highly interested respondents in the topic, thus, increased their likelihood of participation. Lastly, effective communication, including reminders and follow-ups, played a role in emphasizing the survey’s importance and encouraging submission.

4.2 Test for reliability

Table 1: Reliability Statistics

Variable	Cronbach's Alpha	N of Items
Organizational Learning	.936	6
Planned Resilience	.871	5
Adaptive Capability	.857	7
Dynamic Capability	.757	7

Source: Author (2023)

As per reliability analysis result presented in Table 1, both Cronbach's Alpha and Cronbach's Alpha Based on Standardized Items are very high (above 0.7 threshold) suggesting excellent reliability for research instrument.

4.3 Descriptive Analysis

Table 2: Organizational learning descriptive analysis

	Mean	Std. Deviation
The organization values and promotes a culture of continuous learning and improvement.	3.98	1.081
Employees are encouraged and supported to acquire new knowledge and skills relevant to their roles.	3.76	.983
Opportunities for learning and professional development are readily available within the organization.	3.81	1.060
Knowledge sharing and collaboration among employees are encouraged and facilitated.	3.91	.818
Feedback and lessons learned from past projects are actively incorporated into future endeavors.	3.97	1.048
The organization invests in coaching and training programs that align with employees' developmental needs.	3.78	.934
Aggregate mean and standard deviation	3.78	.987

Source: Author (2023)

The analysis findings presented in Table 2, revealed that the mean ratings for various aspects related to employee development, such as promoting a culture of continuous learning and improvement (3.98), acquiring new knowledge and skills (3.76), accessing learning opportunities (3.81), promoting knowledge sharing and collaboration (3.91), incorporating feedback from past projects (3.97), and investing in coaching and training programs (3.78) are generally weak as the majority of the respondents neither agree nor disagree with statements. Overall, the organization seemed to have a little commitment to fostering a learning culture and supporting employee development with a mean of 3.87, but there is room for improvement to ensure consistent experiences for all employees.

Table 3: Planned resilience

	Mean	Std. Deviation
The effectiveness of our resilience plans and initiatives is regularly assessed and reviewed to drive continuous improvement.	3.90	.731
There is a designated team or individual responsible for overseeing and coordinating our organization's resilience efforts.	3.78	.680
Our organization actively monitors and evaluates emerging risks and adapts our resilience plans accordingly.	3.85	.802
Our organization has developed robust contingency plans to respond effectively to unexpected challenges or crises.	3.49	.688
We have identified and assessed our organization's vulnerabilities and have taken steps to mitigate them.	3.81	.804
Aggregate mean and standard deviation	3.76	.741

Source: Author (2023)

Based on the provided analysis result in Table 3, the mean scores for each statement range from 3.49 to 3.90, indicating a moderate level of agreement with these statements. The standard deviations suggest that there is some variability in

the responses, but overall, the organization appears to have a consistent perception of its resilience efforts. The overall mean score of 3.76 indicates that the organization's planned resilience practices are generally moderate by the construction industry SMEs as witnessed through respondents. These factors contribute to challenges in fully implementing robust resilience practices and investing in comprehensive contingency plans.

Table 4: Adaptive capability

	Mean	Std. Deviation
Our organization promotes collaboration and cross-functional cooperation to enhance our adaptive capability.	3.66	.907
We have systems and processes in place to quickly and effectively respond to unexpected events or disruptions.	3.98	1.081
The company undertakes regular assessment on emerging trends in line with operation.	3.76	.983
We foster an environment where ideas for innovation and change are welcomed and explored.	3.81	1.060
Our organization proactively scans the external environment for emerging trends and opportunities.	3.91	.818
Our organization encourages and rewards individuals who demonstrate adaptability and agility.	3.97	1.048
Our company's adaptive capability has led to improved performance in the past five years.	3.78	.934
Aggregate mean and standard deviation	3.83	.976

Source: Author (2023)

As per the analysis result in Table 4, the mean scores for each statement range from 3.66 to 3.98, indicating a moderate level of agreement with these statements. However, the wide range of standard deviations suggests some variability in the responses, indicating differing perceptions within the organization regarding these aspects. The overall mean score of 3.83 suggested that, on average, respondents moderately perceived the organization's adaptive capability and emphasis on innovation and change as favorable.

Table 5: Dynamic capability

	Mean	Std. Deviation
Our organization effectively integrates new knowledge and technologies into our operations.	3.90	1.158
Our organization has a strong network of partnerships and collaborations to enhance our dynamic capabilities.	3.90	.731
Our organization fosters a culture that promotes agility, adaptability, and continuous learning.	3.78	.680
The company creates and integrates both internally or externally acquired capabilities.	3.85	.802
We regularly evaluate and measure the effectiveness of our dynamic capabilities to drive improvement.	3.49	.688
Our organization has the necessary resources and infrastructure in place to support dynamic capabilities.	3.81	.804
Our organization actively seeks new opportunities and adapts its strategies to capitalize on them.	3.90	.731
Aggregate mean and standard deviation	3.80	.799

Source: Author (2023)

The provided analysis result in Table 5 indicated that the construction industry Construction SMEs performs moderately in integrating new knowledge and technologies into its operations, establishing partnerships and collaborations, fostering a culture of agility and adaptability, creating and integrating capabilities, evaluating dynamic capabilities, having resources and infrastructure to support dynamic capabilities, and actively seeking new opportunities with mean scores ranging from 3.49 to 3.90. The overall mean score of 3.80 indicates that, on average, respondents view the organization’s dynamic capabilities moderately practiced.

4.4 Pearson Correlation Analysis

Pearson correlation is a statistical method used to measure the strength and direction of the linear relationship between two continuous variables. It provides a correlation coefficient, typically denoted as "r," which ranges from -1 to +1 which reveals the degree of association between the two variables. A positive correlation coefficient indicates a positive relationship, meaning that as one variable increases, the other variable also tends to increase. A negative correlation coefficient indicates a negative relationship, where as one variable increases, the other variable tends to decrease.

Table 6: Pearson correlation matrix

		OL	PR	AC	DC	FP
OL	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	172				
PR	Pearson Correlation	-.303**	1			
	Sig. (2-tailed)	.000				
	N	172	172			
AC	Pearson Correlation	.985**	-.278**	1		
	Sig. (2-tailed)	.000	.000			
	N	172	172	172		
DC	Pearson Correlation	-.404**	.915**	-.355**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	172	172	172	172	
FP	Pearson Correlation	.982**	-.162*	.970**	.889**	1
	Sig. (2-tailed)	.000	.034	.000	.000	
	N	172	172	172	172	172
**.		Correlation is significant at the 0.01 level (2-tailed).				
*.		Correlation is significant at the 0.05 level (2-tailed).				

F performance (PP), Organization learning (OL), Planned resilience (PR), Adaptive capability (AC), Dynamic capability (DC)
Source: Author (2023)

The correlation analysis reveals interesting insights into the relationship between different factors and firm performance. First, organizational learning exhibits a strong positive correlation with firm performance (r = 0.982, p < 0.001). The findings agree with that of [41], who suggested that organizations should continue prioritizing and investing in learning processes and knowledge acquisition to achieve higher levels of performance. Continuous learning and adaption of new information enhances employee skills, improve decision-making, and hence, overall success of the organization.

On the other hand, planned resilience showed a weak negative correlation with firm performance (r = -0.162, p = 0.034). This implied that higher levels of planned resilience sometimes are associated with lower firm performance due to unexpected challenges or disruptions as depicted by [38]. According to [1], excessive focus on risk mitigation and preparedness may divert resources away from core business activities, limiting growth opportunities and innovation. Additionally, an overemphasis on resilience planning might lead to a more conservative and risk-averse organizational culture that hampers entrepreneurial activities and agility.

Furthermore, both adaptive capability and dynamic capability demonstrated strong positive correlations with firm performance. Adaptive capability (r = 0.970, p < 0.001) helped to adjust and respond to changes in the business environment, while dynamic capability (r = 0.889, p < 0.001) helped to sense, seize, and reconfigure resources in order to adapt to market demands. These results highlight the importance of organizational flexibility, agility, and the ability to innovate in achieving superior firm performance. [41] agreed with findings that the construction industry SMEs that adapt quickly to their strategies, processes, and resources, are in a better position to seize opportunities and gain a competitive advantage.

4.5 Diagnostic Test Analysis

Diagnostic tests such as normality and homoscedasticity were conducted to provide insights into the regression model’s performance, assumptions, and potential issues. Normality test often assumes that the residuals follow a normal distribution. It is worth noting that the consequences of normality assumption violation lead to inefficient estimation and inaccurate prediction intervals.

On the other hand, homoscedasticity assumes that the residuals have constant variance across all levels of the predictor variables. Hence, violation of homoscedasticity leads to biased coefficients estimation. The analysis are as follows.

Table 1: Normality test using Shapiro-Wilk

	Shapiro-Wilk		
	Statistic	df	Sig.
Organizational learning	.868	172	.300
Planned resilience	.920	172	.010
Adaptive capability	.856	172	.069
Dynamic capability	.954	172	.052
Firm performance	.858	172	.532
*. This is a lower bound of the true significance.			
a. Lilliefors Significance Correction			

Source: Author (2023)

Overall, Shapiro-Wilk test p-values except for the planned resilience variable, indicates that the data for organizational learning, adaptive capability, dynamic capability, and firm performance do not significantly depart from normality. This suggested that the assumption of normality can be reasonably assumed for these variables.

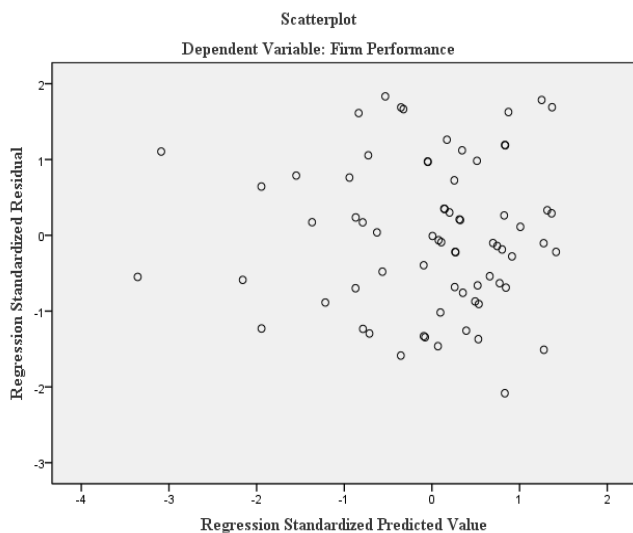


Figure 2: Scatterplot

Source: Author (2023)

As seen in figure 2, the points in the scatterplot formed a relative uniform cloud around the horizontal line, indicating that the variability of the residuals is consistent across the entire range, thus, increasing the reliability of the regression model for making accurate predictions.

4.6 Multi-regression Analysis

Multiple regression is an inferential statistical technique used to explore the degree of influence between dependent and independent variables.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992 ^a	.984	.983	.09198
a. Predictors: (Constant), Organizational learning, Planned resilience, Adaptive capability, Dynamic capability				
b. Dependent Variable: Firm performance				

Source: Author (2023)

The coefficient of determination (R) as presented in Table 8 represents the correlation between dependent variable and the predicted values from the regression model. In this case, the R value of 0.992 indicate a very high correlation between the observed and predicted values. R-squared on the other hand, measures the proportion of variance in the dependent variable that can be explained by the independent variables in the regression model. In this case, approximate 98.4% of the variability in the dependent variable is accounted for by the independent variables in the model.

Table 9: ANOVA

Model		Sum of Squares	Mean Square	F	Sig.
1	Regression	85.141	21.285	2516.137	.000 ^b
	Residual	1.413	.008		
	Total	86.553			
a. Dependent Variable: Firm performance					
b. Predictors: (Constant), Organizational learning, Planned resilience, Adaptive capability, Dynamic capability					

Source: Author (2023)

As per the analysis result, the large F-statistic (2516.137) and the very small p-value suggests that the regression model is highly significant, indicating that the independent variables in the model are collectively effective in explaining the dependent variable.

Table 10: Multi-regression Coefficients

Model	Unstandardized Coefficients		t	Sig.	
	B	Std. Error			
(Constant)	.476	.754	.631	.530	
1	Organizational learning	.543	.097	5.620	.047
	Planned resilience	.147	.107	1.371	.175
	Adaptive capability	.825	.052	15.735	.000
	Dynamic capability	.771	.031	5.544	.002
a. Dependent Variable: Firm performance					

Source: Author (2023)

The analysis report as presented in Table 10, reveals that the estimated value of the dependent variable when all independent variables are constant stand at 0.476. The coefficient for the organizational learning variable is positive 0.543. This means that for a one-unit increase in organizational learning, the dependent variable is estimated to increase by 0.543 units, assuming all other variables are held constant. Additionally, the p-value of 0.047 suggests that organizational learning is statistically significant and has positive impact on the firm performance. The findings concur with [21], who depicted that the team learning, shared vision, mental models, and personal learning had a positive impact on organizational performance.

Adaptive capability variable on the other hand has a coefficient of 0.825. This means that for a one-unit increase in adaptive capability, the dependent variable is estimated to increase by 0.825 units, assuming all other variables are held constant. The t-value of 15.735 indicates that the adaptive capability is highly statistically significant with firm performance, as the associated p-value is reported as 0. Dynamic capability variable on the other hand coefficient stands at 0.771. This suggests that for a one-unit increase in dynamic capability, the dependent variable is estimated to increase by 0.771 units, holding all other variables constant. The t-value of 5.544 indicates that the coefficient is statistically significant and influences firm performance positively, as the associated p-value is reported as 0.002. Echoing prior research by [25], the results highlighted that dynamic and adaptive capabilities had a significant and positive influence on firm’s performance.

Lastly, planned resilience variable has a coefficient of 0.147. This suggests that for a one-unit increase in planned resilience, the dependent variable is estimated to increase by 0.147 units, holding all other variables constant. Contrary to previous findings that of [2] planned resilience however, is not statistically significant, although it has a positive impact on the performance as revealed via p value of 0.175. According to [38] the statistical insignificance between planned resilience and firm performance is due to unexpected challenges or disruptions.

4.7 Thematic Content Analysis

As per the respondents' responses on fostering a culture of curiosity, questioning, and continuous improvement within an organization, 26% of the respondents revealed that leaders should encourage and model curiosity by asking thought-provoking questions and expressing genuine interest in exploring new ideas. Fifty-six percent depicted that safe environment to be created for employees comfortably ask questions and challenging the status quo. Forty-two were in agreement with recognizing and rewarding innovative thinking and experimentation further reinforces a culture of curiosity. Lastly, 56% recommended an establishment of feedback and suggestions channels, such as suggestion boxes or digital platforms, to empower employees to voice their ideas and contribute to continuous improvement.

In the same way, to measure the impact and effectiveness of organizational learning initiatives, 48% of the respondents suggested a pre- and post-training assessments to be administered to gauge the extent of learning and skill enhancement. Thirty-four percent suggested analysis of the key performance indicators (KPIs) relevant to the learning objectives, such as increased productivity, reduced error rates, or improved customer satisfaction, can demonstrate the tangible impact on organizational outcomes. Additionally, 20% agreed to have an observation in employee behavioral change, such as increased collaboration, knowledge sharing, or application of new skills, can serve as anecdotal evidence of the initiatives' effectiveness.

Consequently, to ensure employees are equipped to handle unexpected challenges, 66% requested for a comprehensive training programs that focus on enhancing their skills and knowledge in areas relevant to their roles. Additionally, 34% encourage a culture of continuous learning by promoting internal knowledge sharing, mentoring, and cross-functional collaborations. Fifty-three percent recommended construction SMEs in Nairobi City County to prioritization on open communication channels, enabling employees to seek guidance, share insights, and learn from one another. On the other end, 21% of the respondents believes that their organization should implement knowledge transfer processes and systems to document their knowledge, experiences, and best practices. The information need to be stored in a centralized knowledge management system, accessible to other employees. Only 11% revealed that their organization promote mentorship and encourage departing employees to provide guidance and support to their successors.

To ensure construction SMEs in Nairobi City County organization minimizes operational costs while satisfying stakeholder needs, 72% recommended regular cost assessments and analysis to identify areas where efficiencies can be improved and expenses be reduced without compromising quality or service. Secondly, 38% emphasized on the sustainable procurement practices, seek suppliers and vendors who can offer competitive pricing, in line the organization's values and sustainability goals. Forty-two percent agree on prioritizing effective stakeholder communication and engagement to understand their needs and expectations. This allows management to align

organization strategies and operational decisions accordingly, ensuring stakeholder satisfaction while minimizing unnecessary expenses. Furthermore, 34% alluded that fostering a culture of continuous improvement and innovation encourages employees to identify, and implement cost-saving measures through expertise and insights.

5. Recommendations

The study reveals a robust positive Pearson correlation between utilization of components of strategic resilience and firm's performance. For a good firm performance, the small and mid-size enterprises should embrace organizational learning. The firm should show value and promote the culture of continuous learning and improvement among its human personnel. Such learning can be acquired both internally and externally. Within the firm, opportunities for learning and professional development should be readily available. Additionally, employees should be encouraged and facilitated to collaborate and share knowledge among themselves. Externally, organizations have a duty to invest in coaching and capacity building training programs to ensure development of the employees' needs within the firm. On the other hand, feedback and lessons learnt from past trainings should be incorporated actively into the current and the upcoming organizational projects.

Secondly, organizations should have the capacity to not only adjust but also respond effectively to the dynamic circumstances, hurdles and the opportunities in its external environment. This is called adaptive capability. Various processes and systems should be established for quick and effective response to unforeseen disruptions. Moreover, SMEs should undertake proactive measures to scan emerging trends and opportunities and in turn create an environment that welcomes innovative ideas and changes that can further be explored. This can be fostered through rewarding individuals that portray such levels of agility and adaptability.

Thirdly, SMEs should position themselves in such a flexible manner that they can effectively respond to environmental dynamics through intentional creation, extension and modification of its resource base. This is can be achieved through using its ability to sense the external environment, seize it and use its internal and external competencies to reconfigure.

Therefore, the need to establish powerful collaborations and a stream of partnerships is crucial. From these networks, new knowledge and tech-oriented skills that are in line with the firm's objectives are learnt and capitalized for the benefit of firm's performance. Besides acquiring new ideas, it is the sole responsibility of the firm to regularly measure and evaluate these strategies towards progressive performance. It is also the firm's duty to ensure availability of necessary resources and infrastructure to foster productivity.

Finally, despite the fact that the study shows a negative Pearson correlation between a firm's performance and

planned resilience, it is weak and happens due to unforeseen challenges. With the right measures put in place, a firm's performance will ultimately be productive. In this case, SMEs should assess and identify their vulnerabilities with the aim of stepping into their mitigation. They should have robust plans of action which should be actively monitored and evaluated for eventualities. They should have a designated committee that oversees and coordinates such resilience efforts.

Moreover, SMEs should have strategies put in check to aid in sustainability of the implemented components of strategic resilience. They should foster a culture of curiosity, questioning with progressive productivity within an organization. Here, the leaders can ask thought-provoking questions with a show of intrigue in traversing of new ideas in depth. They can also create a safe environment for the personnel to inquire comfortably while at the same time challenge the status quo. Availing feedback systems for suggestions such as suggestion boxes or anonymous digital feedbacks will empower personnel to voice their thoughts and eventually participate in the progression of the firm.

On the other hand, the organization should put measures to gauge the effect and effectiveness of the initiatives set through organization learning. Pre and post learning assessments should be administered to gauge how well a newly learnt skill has been absorbed. Key Performance indicators (KPIs) should also be examined to gauge the growth of the firm in addition to observing any behavioral changes among the personnel, including knowledge sharing, adoption and utilization of new skills. The fact that implementation of these dimensions of strategic resilience has a direct cost implication, the organization must be set to put operational costs to the minimum, while still satisfying the needs of the stakeholders. The firm should conduct frequent cost assessments while analyzing and considering areas of improvement and of expense reduction without compromising on quality. It should have practice sustainable procurement goals with consistency in suppliers whose pricing is competitive as the organization's sustainability goals. While putting in place these strategies, personnel engagement to gauge their needs is vital to ensure relevance.

6. Areas for Further Studies

The current research was done to determine the effect of strategic resilience on performance of SMEs in the construction sector. The researcher suggests that a future study can be done to investigate the same on a contrary sector such as health, education, real estate among others. There are also suggestions for future study to investigate a deeper understanding into resistance to change as one of the major hurdles to firm's performance. In addition, other factors not captured in this study can be incorporated.

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