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'Weathering the storm'. Resilience and small and medium-sized enterprises in Uganda

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ABSTRACT

The survival of Small and Medium-Sized Enterprises (SMEs) is crucial to global economies, particularly for developing countries, due to their significant contributions to development and the well-being of their societies. When SMEs develop resilience, they are better equipped to evolve and adapt their operations to changing environments, thereby increasing their survival prospects. This study aimed to investigate how SME survival is enabled by resilience, focusing on the mediators that enhance this relationship. The study adopted a quantitative positivist approach, collecting data from Ugandan SMEs selected through purposive sampling using descriptive statistics. The study found that resilience influences SME survival, the extent of which is mediated by access to finance, leadership and management, technology and innovation, and human capital management. These mediators help SMEs translate resilience into effective strategies for adaptation, agility, and continuity across different contexts. Overall, this study provides a theoretical framework that demonstrates how mediators enhance the resilience and survival of SMEs, contributing to the ongoing discourse and offering practical insights, while identifying areas for future research.

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1. Introduction

Small and Medium-Sized Enterprises (SMEs) are vital drivers of development in emerging economies as they generate employment, stimulate economic growth, alleviate poverty, and promote innovation, entrepreneurship and market expansion (Gherghina et al., 2020; Joel & Oguanobi, 2024; Ouma-Mugabe et al., 2021). Globally, SMEs represent about 90% of all businesses, contribute more than 50% of productive capacity, generate around 52% of total output, and account for around 40% of Gross Domestic Product (GDP) (Ahimbisibwe et al., 2023; Melo et al., 2023; World Bank, 2021). In Uganda, SMEs are key drivers of economic growth, provide more than 2.5 million jobs, account for 80% of manufactured goods, 90% of the private sector and 67% of all businesses, and contribute 20% of GDP (Muhammad et al., 2024; Nzibonera & Waggumbulizi, 2020; Sunday et al., 2023). Although definitions of SMEs vary across economies, they are typically defined using criteria such as profitability, capital investment, employee numbers, market share, turnover, asset value, ownership, and management structure (Olaore et al., 2021). In Uganda, SMEs are defined as follows: small businesses employ 5–9 employees with assets ranging from 10 million to 100 million shillings, while medium-sized businesses have 50–100 people with assets between 100 million and 360 million shillings (Ministry of Trade and Industry and Cooperatives (MTIC), 2015).

Despite their importance, SMEs face multiple challenges that hinder their prospects and long-term sustainability (Atadoga et al., 2024; Kindström et al., 2024). In Uganda, SMEs have low survival rates, with many organisations failing within one year and approximately 30% shutting down before three years of operation (Eton et al., 2021; Orobia et al., 2020). These outcomes are largely attributed to limited

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financing, inadequate capital, weak operational capabilities, technological incompetence, constrained innovation, human capital constraints, market access difficulties, and regulatory, attitudinal, and institutional barriers (Byamukama et al., 2024; MTIC, 2015; Uganda Investment Authority, 2022). Additional challenges include inadequate quality assurance, costly product certification, an informal and uncoordinated sector, low gender inclusivity, and poor infrastructure (Kisubi et al., 2022).

Considering the economic importance of SMEs especially for Developing Countries (DCs) like Uganda, understanding the factors that contribute to their growth, resilience, and survival is essential (Akkartal & Karamik, 2021; Chilembo, 2021). Resilience enables SMEs to prepare for adversity, adapt, and exploit opportunities while sustaining performance (Iqbal et al., 2023; Roffia & Dabić, 2024; Saad et al., 2021). Building resilience enables SMEs to achieve higher performance and sustain their business over time (Kaombe et al., 2021). Accordingly, the objective of this study is to investigate the influence of organisational resilience on SMEs in Uganda. Specifically, it examines the relationship between resilience and business survival, identifies key determinants of resilience, and analyses the mediating roles of access to finance, innovation and technology, leadership and management, and human capital management in shaping survival outcomes. By integrating theoretical and empirical perspectives, the study provides policy-relevant and practical insights for policy makers, SME owners, financial institutions, and development partners seeking to strengthen SMEs and enhance long-term sustainability.

2. Literature review

SMEs are commonly associated with lower capacity, limited readiness, constrained access to finance, high credit risk, scarce human expertise, flexible structures, centralised decision-making, informal yet close working relationships, and at times, a tendency to resist change (Eggers, 2020; Skouloudis et al., 2023; Troise et al., 2022). While these traits are often cited as sources of agility, the literature also highlights that informality and managerial concentration can restrict strategic capacity and growth, increase their dependency, reinforce resistance to change, and threaten their survival particularly in turbulent environments (Eggers, 2020; Rastegar et al., 2025). This tension suggests that SME characteristics simultaneously support adaptability and heighten vulnerability, thereby constraining sustained growth and effective crisis management.

2.1. Role and challenges of SMEs in Uganda

In Uganda, about 1.1 million MSMEs operate across multiple sectors, reflecting their role in economic activity (MTIC, 2015; World Bank, 2021). SMEs influence goes beyond economic indicators to broader socio-economic aspects (Bakashaba et al., 2024; Richard et al., 2024; Uganda Business Impact Survey, 2020). Empirical evidence shows that SMEs make substantial fiscal contributions amounting to 7.57, 9.08, and 9.74 trillion shillings in 2016/17, 2017/18, and 2018/19, respectively, highlighting their relevance to national revenue mobilisation (Uganda Revenue Authority, 2019). These contributions cannot be evaluated only economically, but also by broader socio-economic benefits (Richard et al., 2024). Moreover, while SMEs are frequently portrayed as engines of innovation and entrepreneurship, evidence suggests that their capacity to drive technological development, new products, services, and process improvements is uneven and often constrained by structural and institutional limitations (Joel & Oguanobi, 2024; Ouma-Mugabe et al., 2021). This mixed evidence highlights the need to critically assess not only the scale of SME contributions in Uganda but also the conditions under which these contributions translate into sustainable economic and socio-economic development.

Although SMEs contribute significantly to employment, output and socio-economic development, empirical evidence consistently points to weak performance and high failure rates (Aketch et al., 2017; Sejjaaka et al., 2015). This contradiction has been attributed not only to organisation-level limitations but also to structural and institutional constraints, indicating that SME challenges are embedded within broader systemic conditions (Bakashaba et al., 2024; Bhorat et al., 2018). Existing research identifies multiple determinants of SME performance, and survival such as organisation size and age, ownership structure, managerial capability, access to finance, technology adoption, marketing, innovation, asset structure, and the operating environment, (Adomako et al., 2016; Amoako & Lyon, 2014; Briozzo et al., 2016).

However, much of this research remains fragmented, examining these factors in isolation and offering limited insights into how they interact under uncertainty. Similarly, qualitative drivers such as brand image, service quality, delivery reliability, and strategic positioning, are recognised but appear context-dependent, with mixed outcomes across developing (Dana et al., 2018; Ramadani et al., 2018). This gap underscores the need for integrated analyses that explain how resilience-related capabilities combine these factors to support SME survival, particularly in developing country contexts such as Uganda.

2.2. Business resilience and business survival

Businesses increasingly operate in volatile environments characterised by crises, disruptions, and systemic shocks that jeopardise operations, performance, and long-term survival (Linnenluecke, 2017; Liu et al., 2019; Tasic et al., 2020). SMEs are widely regarded as particularly vulnerable due to limited resources and capabilities, (Figueiredo et al., 2020; Juergensen et al., 2020). However, this size-based explanation has been challenged by studies showing that managerial preparedness, strategic flexibility, and adaptive capacity can partly offset scale advantages, suggesting that vulnerability is not inherent but contingent on internal capabilities (Linnenluecke, 2017; Mohezar et al., 2023).

Resilience has therefore emerged as a central construct in explaining SME survival, although the literature lacks conceptual consensus. While some scholars define resilience narrowly as the ability to absorb shocks and recover, others adopt a broader perspective that incorporates learning, adaptation, and transformation (Conz & Magnani, 2020; Duchek et al., 2020; Hepfer & Lawrence, 2022). This divergence reinforces the view that resilience is multidimensional and systemic. Kantabutra and Ketprapakorn (2021) argue that resilience arises from interdependent organisational elements, a position supported by evidence showing that organisations with balanced operational, functional, and strategic capabilities recovers faster and performs better than those with uneven strengths (Hepfer & Lawrence, 2022; Tognazzo et al., 2016).

Many authors have highlighted multiple drivers of business resilience, yet their relative importance remains contested. Leadership and management are frequently emphasised for their role in sense-making, coordination, and strategic response during crises (Giustiniano et al., 2020; Vito et al., 2023). In contrast, other studies prioritise organisational capacities and practices, suggesting resilience is embedded in systems rather than individuals alone (Brown et al., 2021). Financial resources and slack are also widely recognised as resilience enablers, but evidence from resource-constrained contexts indicate that finance alone is insufficient without complementary managerial and organisational capabilities (Nguyen et al., 2023; Prayag et al., 2020). Digital technologies and innovation are increasingly framed as mechanisms for enhancing resilience through efficiency, responsiveness, and new value creation. Nonetheless, empirical findings remain mixed, particularly for SMEs, where adoption is uneven and often constrained by skills, institutional barriers, and limited absorptive capacity (Chan et al., 2023; Putritamara et al., 2023).

Overall, although there is a strong agreement that resilience is critical to SME survival, the literature remains fragmented regarding how resilience is built and translated into sustained performance, and survival. Studies variously emphasise strategic decision making, leadership, human capital, finance, and digitalisation, often in isolation (Byukusenge et al., 2021; Chan et al., 2023; Duchek et al., 2020; Kabange & Simatele, 2022; Nyaupane et al., 2021; Quansah et al., 2022). This lack of integration highlights the need for empirical research that jointly examines multiple resilience dimensions and their mediating mechanisms, particularly in developing country contexts where structural constraints may fundamentally shape SME survival.

2.3. Mediating variables in the relationship between resilience and SME survival

Limited access to financial resources is frequently cited as a major barrier to SME growth and long-term sustainability (Nguyet, 2023). While several studies argue that financial slack enhances SMEs' capacity to absorb shock and respond to uncertainty (Agostini et al., 2023), others caution that access alone does not automatically translate into resilience unless resources are deployed flexibly and strategically. This suggests that finance functions less as a direct determinant of survival and more as a mediating

mechanism through which resilience capabilities are activated. Additionally, digital technologies and innovation are similarly positioned as mediators between business resilience and survival, with strong evidence linking technological innovation to improved SME competitiveness and performance (Chege & Wang, 2020). However, while some scholars view innovation as a proactive resilience strategy that enables adaptation and opportunity capture (Castillo, 2023), others note that innovation outcomes are uneven, particularly among resource-constrained SMEs. Through innovation and technology, organisations can adapt, seize opportunities, and enhance resilience and sustainability.

Effective leadership is widely acknowledged as a critical enabler of organisational resilience and long-term sustainability, especially during crises (Anwar, 2017; Ferrinho et al., 2022). While some studies emphasise leadership as a direct driver of resilience, enhancing performance, competitiveness, and adaptability, others suggest its impact is conditional, amplifying the effectiveness of other organisational resources such as skilled human capital and management capabilities (Eikelenboom & de Jong, 2019; Krammer et al., 2018). Similarly, competent human resources are frequently highlighted as essential for sustaining performance in dynamic and uncertain environments. Employee skills, knowledge, shared experience, situational understanding, and preparedness planning collectively foster resilience (Castillo, 2023; Gerhart & Feng, 2021). However, the literature divergences on whether human capital acts independently or primarily in conjunction with leadership and organisational culture to foster resilience. Learning-oriented, transparent cultures appear to reinforce the positive effects of both leadership and skilled employees, suggesting that resilience emerges from the interplay of multiple factors rather than isolated attributes. Furthermore, while resilience and sustainability are conceptually distinct, resilience is widely considered foundational, without it, sustainability is precarious as organisations cannot effectively absorb disruptions or maintain long-term viability (Sharma & Sharma, 2020; Zavala-Alcívar et al., 2020). Without resilience, business sustainability is fundamentally fragile. This nuanced view underscores the importance of critically examining how financing, innovation, leadership, and human capital jointly mediate the relationship between resilience and SME survival.

2.4. Theoretical framework

This study adopts contingency theory to examine how SMEs align internal resources, capabilities, and leadership practices with external conditions to enhance resilience and survival (Abedin, 2022; Mueller & Jungwirth, 2022). Contingency Theory posits that organisational effectiveness is contingent upon achieving a fit between internal factors such as structure, leadership, strategies, processes and resources, and the external environment (Barinua & Miidom, 2022; Hassan et al., 2022; Shala et al., 2021). While several studies emphasise the value of such alignment in supporting performance during turbulent times, critics note that the theory provides limited guidance on which internal factors are most critical under specific external pressures.

The findings support Contingency Theory, showing that SMEs' resilience, leadership, human capital, innovation, and access to finance enable alignment of internal resources with external challenges, enhancing their ability to anticipate, adapt, and recover from disruptions, thereby contributing to business survival. At the same time, the study highlights the practical limitations SMEs face which limits them in operationalisation of the principles in a developing country context, including resource constraints, variable technology adoption, and differences in managerial expertise (Kaya & Kaya, 2023; Shala et al., 2021). Compared to prescriptive frameworks, Contingency Theory provides a nuanced understanding of SME survival, emphasising that internal-external alignment drives resilience and long-term sustainability. By linking the theory to the empirical findings, the framework offers a valuable lens to explore how SMEs in Uganda operationalise or struggle to operationalise resilience-building strategies using their resources, and in their environmental contexts, reinforcing the relationship between internal capabilities, adaptive practices, and business survival.

2.4.1. Research methodology

This study adopts a positivist approach, using a deductive and quantitative descriptive design to examine the relationship between resilience and SME survival and the mediating factors influencing this

relationship, and to produce reliable, and generalisable findings. The study population consisted of Ugandan SMEs identified using the Ugandan definition of SMEs. A purposive sampling approach was used to select eligible SMEs from the Private Sector Foundation Uganda (PSFU) database. This ensured that only enterprises meeting the SME criteria defined by MTIC were included in the study.

The sample size was determined using Yamane's (1973) formula, which indicated a minimum of 400 respondents. Data was collected between March 2025 and April 2025 using an adapted online questionnaire, yielding 439 responses which were adequate for meeting the study objectives. After excluding 15 responses (3.4%) from large companies, 424 valid questionnaires remained for analysis.

The questionnaire was adapted from previously validated instruments and comprised seven sections including demographic and business information, as well as constructs measuring business survival, resilience, access to finance, digital technologies and innovation, leadership and management, and human capital management. Responses were recorded on a 5-point Likert scale, with strongly disagree (1), disagree (2), neither agree not disagree (3), agree (4), and strongly agree (5). Specifically, the questionnaires drew on Do (2021) for business performance; Falkenberg's (2021), Chen et al.'s (2021) and Essuman et al.'s (2020) for organisational resilience; Idris (2020) scale for access to finance; Zand and Rezaei (2020) for process and product innovation; Grill et al.'s (2024) for leadership; and Grill et al.'s (2024) and Chen, Xie, et al.'s (2021) for human capital management. To minimise common method bias, the study ensured respondent anonymity and confidentiality, used clear and neutral, and separated constructs within the questionnaire.

Data was analysed using descriptive statistics including frequencies, percentages, means, and standard deviations, to examine the relationships among the study variables. The response distribution is presented in Table 1.

Most of the enterprises in the sample (87.7%) fell within the small and micro categories, while medium-sized enterprises represented only 8.9% of the respondents.

2.4.2. Reliability of scales

Internal consistency was assessed using Cronbach's alpha to determine the reliability of the measurement scales and extent to which the items captured their underlying constructs (Taber, 2018; Tavakol & Dennick, 2011). Following the commonly applied thresholds proposed by George and Mallery (2003), alpha values of 0.70 and above indicate acceptable to excellent reliability. Both standardised and unstandardised alpha coefficients were computed for the six constructs, each measured with a varying number of items, as presented in Table 2.

Five constructs: business resilience, digital technologies and innovation, leadership and management, human capital management, and business survival, showed good to excellent reliability, with Cronbach alpha values ranging from 0.8382 to 0.9308, all above the 0.70 threshold. This showed strong internal consistency and stability, confirming that these scales reliably measured their intended constructs. No adjustments were needed for these scales.

Table 1. Response rate.

Business size (employees)	Number	Percentage
Micro (1–4 employees)	50	11.4
Small (5–49 employees)	335	76.3
Medium (50–100 employees)	39	8.9
Large (> 100 employees)	15	3.4
	439	100.0

Table 2. Computed reliability results for the six factors.

Constructs	Number of items	Cronbach's alpha	Cronbach's alpha based on standardised items
Business resilience	25	0.9268	0.9284
Access to finance	6	0.5008	0.4749
Digital technologies and innovation	8	0.9279	0.9280
Leadership and management	9	0.9055	0.9078
Human capital management	13	0.9308	0.9313
Business survival	5	0.8382	0.8394

In contrast, the access to finance construct initially showed poor reliability (α = 0.5008; 0.4749 standardised), suggesting the items were not cohesive and may have reflected diverse aspects such as financial availability, affordability, or repayment conditions. After removing 3 items, the remaining three-items scale achieved acceptable reliability (α = 0.714; 0.710 standardised), meeting the recommended threshold of >0.70. Overall, the measurement model was robust, with the exception of access to the finance, which required refinement before further analysis.

2.4.3. Ethical compliance

Regarding ethical consideration, the study adhered to the ethical guidelines set by the University's ethics committee. The participants received a written explanation of their rights, including privacy, confidentiality, and the requirement for voluntary consent. The purpose of the study and the researcher's intentions were outlined in a cover letter, and respondents were free to discontinue at any stage of the survey. No incentives were provided for completing the survey. Informed consent was collected in written form prior to participants engaging in the survey. The study was approved by the Department of Business Management Research Ethics Committee at the University of Johannesburg, under ethical clearance code 24SOM/BM91 on 29 November 2024.

3. Results and discussion

3.1. Demographic characteristics

The study included four categories of demographic characteristics including gender, business characteristics, primary business activity, and size of the business as defined by the number of employees. The demographic statistics are shown in Table 3.

The study was almost gender-balanced, with 48.1% female, and 51.4% male respondents, and a very small proportion of (0.2%) identifying as 'Other' and (0.2%) as 'Prefer not to say'. Most enterprises (49.1%) were established businesses operating for 3–10 years, and over 21.9% exceeding a decade, indicating stability and potentially higher resilience, while start-ups accounted for only a small proportion (4.2%).

The findings also indicate that SMEs operate across varied sectors, with retail (24.1%), agriculture (13.7%) and food and beverage services (12.3%) being the most prominent. Most surveyed firms (79.0%) are small enterprises employing 5–49 people, while micro (1–4 employees), and medium-sized enterprises (50–100 employees) accounted for 21.0%, reflecting the dominance of small-scale operations which is typical of developing economies.

Table 4 summarises the descriptive statistics measures including means and standard deviations to summarise the Likert-scale data, following the approach recommended by Boone and Boone (2012). Mean scores were interpreted using the guidelines of Sekaran and Bougie (2019) and categorised as very low (1.00–1.80), low (1.81–2.61), moderate (2.62–3.42), high (3.43–4.23), and very high (4.24–5.00), with higher means indicating stronger perceptions of the construct. Standard deviations (SD) were classified as very low (0.00–0.49), low (0.50–0.99), moderate (1.00–1.49), and high (1.50–2.00), reflecting the level

Table 3. Demographic characteristics.

Demographic statistics			
Gender	**%**	**Primary business activity**	**%**
Female	48.1	Agriculture	13.7
Male	51.4	Food and Beverage Service	12.3
Other	0.2	Retail	24.1
Prefer not to say	0.2	Education	6.4
Duration of business operations (Years)	**%**	Hospitality and Tourism	7.5
<1	4.2	Transport and Logistics	5.0
1-3	24.8	Manufacturing	4.5
3–10	49.1	Financial Services	4.7
>10	21.9	Human Health Services	2.6
Size of business (Number of employees)	**%**	Creative Arts and Entertainment	7.5
Micro (1–4 employees)	11.8	Building and Construction	2.1
Small (5–49 employees)	79.0	Services (Consultancy, legal, etc.)	5.2
Medium (50–100 employees)	9.2	Other	4.5

Table 4. Respondents' perception of business resilience.

Business resilience	N	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
Our company stands straight and preserves its position.	424	3.10	4.00	4.70	74.30	13.90	3.92	0.786
Our company is successful in generating diverse solutions.	424	0.70	2.80	8.30	67.20	21.00	4.05	0.684
Our company shows resistance to the end in order not to lose.	424	1.40	3.30	4.70	65.80	24.80	4.09	0.740
Our company rapidly takes action.	424	1.20	2.80	7.50	64.90	23.60	4.07	0.726
Our company develops alternatives in order to benefit from the negative.	424	1.20	5.20	4.50	68.90	20.30	4.02	0.750
Our company is agile in taking required action when needed.	424	1.70	3.50	6.80	63.20	24.80	4.06	0.777
Our company easily adapts to changing circumstances.	424	0.90	4.00	5.70	58.70	30.70	4.14	0.768
Our company is the place where how to take action is always clear.	424	2.10	3.50	7.50	63.40	23.30	4.02	0.802
Our company can focus on its core business.	424	1.70	1.90	4.20	59.90	32.30	4.19	0.744
Our company can identify unfavourable factors in the development in a timely manner.	424	2.10	3.10	6.80	65.10	22.90	4.04	0.782
We pursue a robust strategic growth model.	424	1.90	3.30	14.40	60.40	20.00	3.93	0.802
We were able to clarify our strategic positioning.	424	2.40	5.00	7.30	62.00	23.30	3.99	0.848
We can balance endogenous and exogenous growth patterns.	424	3.50	5.70	13.20	59.20	18.40	3.83	0.914
We can match strategic objectives and operational capabilities very well.	424	1.90	4.50	8.50	63.00	22.20	3.99	0.811
Our company is able to carry out its regular functions.	424	2.40	2.40	5.70	56.10	33.50	4.16	0.821
Our company grants us time to consider a reasonable response.	424	2.60	2.60	8.30	64.20	22.40	4.01	0.803
Our company is able to carry out its functions despite some damage done to it.	424	3.10	2.80	8.70	71.70	13.70	3.90	0.778
Without much deviation, we are able to meet normal operational and market needs.	424	0.90	4.00	10.10	67.20	17.70	3.97	0.724
Without adaptations being necessary, our company performs well over a wide variety of possible scenarios.	424	2.80	4.50	13.70	65.30	13.70	3.83	0.824
Our company's operations retain the same stable situation as it has before disruptions occur for a long time.	424	4.50	7.80	14.90	59.90	13.00	3.69	0.948
It does not take long for us to restore normal operations.	424	5.90	11.60	11.60	48.10	22.90	3.71	1.120
Our company reliably recovers to its normal operating state.	424	5.70	9.70	9.20	55.40	20.00	3.75	1.061
Our company easily recovers to its normal operating state.	424	5.70	10.40	10.10	51.20	22.60	3.75	1.092
Our company effectively restores operations to normal quickly.	424	5.90	10.10	11.80	51.40	20.80	3.71	1.086
We are able to resume operations within the shortest possible time.	424	6.10	11.80	10.40	49.50	22.20	3.70	1.123

of response consistency. The analysis is based in data from 424 respondents, with detailed results reported in subsequent tables.

3.2. Business resilience

Over the three-year period, most respondents reported solid financial performance and business survival, although 46% were uncertain whether their organisations outperformed competitors. The majority of the respondents indicated strong resilience, noting their ability to preserve value, respond and adapt effectively, maintain strategic focus, remain outward-looking, meet stakeholder expectations, and restore operations during disruptions. These findings align with prior evidence that business owners generally feel confident in their organisations' capacity to withstand challenges, maintain operations, and pursue growth (Brown et al., 2022).

Respondents identified collateral requirements and high interest rates as the main constraints to accessing finance, while disagreeing that banks lacked funds, lease financing was inadequate, or lending information was insufficient. Opinions on non-bank and equity financing were mixed. Regarding technology, most respondents reported improvements in processes, adoption of advanced tools, increased efficiency, and development of new products and materials. Leadership was widely seen as effective in guiding teams, delegating, clarifying goals, and representing the organisation. For human capital management, strengths included employee motivation, communication, external awareness, learning from industry leaders, and emotional adaptability. Overall, respondents viewed their businesses as resilient across multiple dimensions, aligning with previous studies highlighting resilience as multifaced and shaped by various factors including adaptability, technology, and leadership, which enable businesses to navigate challenges and thrive in dynamic environment (Johnson et al., 2024; Lestari et al., 2024).

To address the objective of examining the relationship between resilience and business survival, the findings indicate that business owners generally view their businesses as resilient and capable of supporting survival. Overall, respondents reported strong agreement across key resilience dimensions, with an average mean of approximately 4.0 across the first 20 items, and a low mean SD of 0.79, indicating strong agreement on their businesses' ability to anticipate, respond to, adapt to, and recover from disruptions. The key dimensions of resilience including adaptability, stability, responsiveness, operational continuity, innovation, capacity building, and proactive survival planning, highlight the ways in which resilience contributes to maintaining operation and ensuring business continuity consistent with previous studies (Abdul Rahman et al., 2024; Jayanto et al., 2025; Omowole et al., 2024). Recovery-specific measures, such as the time to resume operations and return to normalcy, had slightly lower means score of 3.72 and higher SD of 1.07, reflecting moderate variability in perceptions of the recovery processes. These results demonstrate that strong resilience capabilities are closely associated with the ability of SMEs to survive and sustain performance in changing environments. However, sseveral studies provide contrasting evidence to current findings. Amin et al. (2025) found that SME resilience does not always translate into stronger survival outcomes during economic crises. Koporcic et al. (2026) highlight that financial, resource, and leadership limitations often hinder SMEs from effectively operationalising resilience in practice, while Biyela and Utete (2024) notes that many SMEs continue to experience productivity losses and closures despite implementing coping strategies, suggesting that resilience alone may not guarantee survival.

3.3. Access to finance

Access to finance is a key determinant of SME growth and long-term sustainability (Hasan et al., 2024). This section examined respondents' financial environment, including access to banks loans, equity investment, and lease financing, as well as perceptions of collateral requirements, interest rates, and credit transparency. Previous studies indicates that access to finance and effective resource management strengthen resilience, adaptability, and sustainability. (Lestari et al., 2024), whereas restricted access to finance constrains business performance (Abdul Rahman et al., 2024). Table 5 provides detailed insights into the financial access.

Table 5. Respondents' perception of access to finance.

Access to finance	N	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
Our company can meet the collateral requirements of banks/financial institutions.	424	3	14	9	**48**	26	3.81	1.072
Banks charge high interest rates.	424	2	5	13	29	**51**	4.21	0.986
Banks lack money to lend.	424	30	**43**	11	10	6	2.19	1.145
Our company has access to non-bank equity/investors/partners.	424	16	30	13	**32**	9	2.89	1.270
Our company has access to lease finance for equipment.	424	15	**33**	17	27	8	2.81	1.225
Our company has inadequate credit/financial information on customers.	424	7	29	18	**31**	15	3.17	1.209

In relation to the objective of assessing the mediating effect of access to finance on the relationship between resilience and business survival, the respondents reported moderate access to financial resources, including collateral, interest rates, bank lending, non-bank equity, lease financing, and credit information, with mean scores ranging from 2.19 to 4.21, and SD of 0.986–1.270, indicating some variation in perceptions. While many SMEs were able to meet collateral requirements, access to non-bank equity was limited, and challenges such as high interest rates, incomplete credit information, and underutilised leasing financing were identified. Most respondents disagreed that banks lacked funds (mean 2.19), indicting that finance barriers are primarily internal rather than due to lack of availability. These findings demonstrate that limited access to finance can constrain SMEs capacity to invest in resilient-building activities such as adapting operations, innovating, and sustaining business continuity, which in turn affects overall survival. This is consistent with prior research identifying access to finance as a critical factor in influencing SME resilience and survival in developing economies (Amadasun & Mutezo, 2022; Ashraf et al., 2025; Le et al., 2024). However, several studies provide evidence that contrasts with current findings. Johnson et al. (2024) found that limited access to finance reduces SMEs' capacity to adapt to shocks, thereby undermining resilience and survival. Similarly, Liu and Yao (2023) report that financing difficulties and liquidity shortages restrict SMEs' ability to sustain operations without external support, while Lestari et al. (2024) reported that financial resources and financial literacy have insignificant effects on SME business resilience. The majority of participants (51%) strongly agreed that banks charge high interest rates, which may act as an impediment to taking up finance. Despite this sentiment, 48% of participants agreed that banks' collateral requirements can be met, indicating resilience in internal equity, reserves and asset base. 43 % of participants further disagreed that banks lack money to lend, indicating a sense of liquidity in capital markets. In addition to the ability to access capital markets, 32% of participants agreed that their companies have access to other forms of capital, potentially through outside investors or partners. This finding highlights the availability of other forms of capital. A small percentage of participants (33%) indicated not having access to lease finance for equipment. This again reaffirms that the majority of participants do have access to other forms of finance. Lastly, 31% of participants agreed that they lack credit/financial information of customers. This suggests that the majority of participants have such financial information at their disposal, indicating access to robust financial systems.

3.4. Digital technologies and innovation

Despite resources constraints, SMEs rely on flexibility and innovation for growth and survival (Muhammad et al., 2024). Embracing digital technologies and innovation strengthens competitiveness, operational performance, and organisational resilience (Bhuiyan et al., 2024; Kumar et al., 2024; Mishrif & Khan, 2023). Table 6 details responses on technology and innovation to improve processes, products, efficiency, competitiveness, and SME survival.

Regarding the aim of examining the mediating effect of innovation and technology on the relationship between resilience and business survival, the respondents reported positive perceptions of their

Table 6. Respondents' perception of digital technologies and innovation.

Digital technologies and innovation	N	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
We improve reliability of our production process and technologies.	424	2.4	9.0	16.5	61.3	10.8	3.69	0.867
We improve the speed and efficiency of our production processes.	424	2.6	8.7	17.5	57.5	13.7	3.71	0.901
We use advanced technologies in our production processes.	424	6.1	11.1	19.6	43.2	20.0	3.60	1.111
We strive to keep our production processes ahead of our competitors.	424	3.5	8.7	17.9	51.4	18.4	3.72	0.978
We develop or use new components.	424	3.1	10.8	19.6	51.2	15.3	3.65	0.968
We develop or use new materials.	424	3.3	10.4	17.9	51.2	17.2	3.69	0.984
We develop or use new technologies in our products.	424	3.3	11.8	17.7	48.6	18.6	3.67	1.014
We develop or use new product features.	424	3.5	8.7	19.8	50.5	17.5	3.70	0.975

organisations' use of technology and innovation, highlighting efficient processes, advanced technologies, and new products and materials, with mean scores ranging from 3.60 to 3.72, and SDs of 0.867–1.111, indicating strong agreement and relatively consistent views. While most respondents agreed that technological and product innovations enhanced operational performance, some variability in the adoption of advanced technologies suggests areas for further investment or improved communication. These findings demonstrate that technology and innovation strengthen organisational resilience by enabling SMEs to adapt processes, respond to market changes, and maintain operational continuity, thereby supporting overall business survival. This is consistent with prior studies showing that innovation and digital technologies enhance operations, improve adaptability, and contribute to long-term resilience performance, and survival (Akpan et al., 2024; Hokmabadi et al., 2024; Tan et al., 2025). This reinforces evidence that innovation and technology positively contribute to resilience, growth and long-term survival (Ciasullo et al., 2022; Lestari et al., 2024). However, numerous studies provide contrasting evidence to the current findings. Restrepo-Morales et al. (2024) found that financial and organisational barriers can limit SMEs' technology adoption and weaken its impact on resilience and long-term survival. Similarly, Boonmee et al. (2025) assert that digital technologies can support resilience, but financial skills and infrastructure often limit their effective adoption. Lestari et al. (2024) emphasise that technology adoption does not always improved resilience, as its impact can be insignificant or context-dependent across different SME environments.

3.5. Leadership and management

Strong leadership is crucial for the performance and survival of SMEs, particularly in dynamic operating environments (Muhammad et al., 2024). It strengthens resilience, flexibility, and the potential for growth (Yukl & Gardner, 2020). This section explores responses to leadership styles, effectiveness, and role comprehension, with detailed findings shown in Table 7.

With respect to the objective of exploring the mediating effect of leadership and management on the relationship between resilience and business survival, the respondents reported strong perceptions of leadership effectiveness, with average scores ranging from 4.27 to 4.43 and low variability (SD = 0.5777–0.797), indicating consistent positive perceptions. Leadership was evaluated in terms of task understanding, delegation, role clarity, team direction, coordination, and external representation. These findings demonstrate that effective leadership strengthens organisational resilience, supporting prior studies showing that strong leadership is key for building organisational resilience by guiding decision-making, coordinating resources, and ensuring continuity during disruptions, thereby supporting SME survival (Johnson et al., 2024). These findings also highlight that entrepreneurial resilience as a mediator, linking organisational leadership, and resilience to long-term business performance and survival (Damoah, 2025;

Table 7. Respondents' perception of leadership and management.

Leadership and management	N	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
As a business owner, I know about my responsibilities and tasks.	424	0.2	0.2	2.4	52.1	45.0	4.42	0.577
As a business owner, I delegate and schedule the work to be done.	424	1.9	2.6	2.8	52.4	40.3	4.27	0.797
As a business owner, I clarify organisational goals.	424	0.0	0.9	3.3	52.4	43.4	4.38	0.600
As a business owner, I clarify what is expected of the employees.	424	0.7	2.4	3.1	51.2	42.7	4.33	0.714
As a business owner, I see to it that the work of group members is coordinated.	424	0.2	1.4	5.2	51.9	41.3	4.33	0.661
As a business owner, I am effective in representing our company.	424	0.5	0.9	2.1	51.7	44.8	4.39	0.629
As a business owner, I am effective in doing my job.	424	0.2	0.2	2.6	50.2	46.7	4.43	0.583
As a business owner, I am effective in making employees perform efficiently.	424	0.2	1.2	4.2	56.8	37.5	4.30	0.629
As a business owner, I am effective in leading employees.	424	0.2	1.9	3.1	51.4	43.4	4.36	0.659

Prastian et al., 2022). However, several studies provide evidence that contrasts with the current findings. Koporcic et al. (2026) asserts that, although leadership is important, many SMEs face financial, managerial, and resource constraints that limit their ability to translate leadership capabilities into resilience. Similarly, Biyela and Utete (2024) report that even with strong leadership and coping strategies, many SMEs still experienced productivity losses and closure, indicating that leadership alone does not guarantee resilience or survival. Majeed et al. (2025) further emphasises that leadership effectiveness is often constrained by internal and institutional challenges, which can weaken its contribution to organisational resilience. Overall, respondents' strong leadership capabilities indicate a key mechanism through which SMEs enhance resilience, adapt to challenges, and sustain operations over time, directly contributing to business survival.

3.6. Human capital management

Effective human capital management is vital for the survival and resilience of SMEs (Belas et al., 2024b). Capable and skilled employees contribute to growth and enhance organisational resilience (Nur & Khalid, 2024; Seow et al., 2021). This section examines how respondents engage with, motivate, and communicate with employees, influencing performance and leveraging organisational learning and environmental awareness to improve SME outcomes, with results detailed in Table 8.

To examine the mediating effect of human resource management on the relationship between resilience and business survival, the respondents reported high ratings for human capital management with mean scores between 4.18 and 4.34, and low SDs (0.607–0.769), reflecting consistent positive views on employee motivation, communication, skills development, adaptability, organisational learning, and situational awareness. These results indicate that effective human capital practices enhance organisational resilience by fostering a skilled, adaptable, and informed workforce, which is critical for maintaining operations and responding to disruptions. Previous studies emphasises that diverse teams and organisational learning enhance agility, and (Charisma et al., 2025; Marcazzan et al., 2022; Omowole et al., 2024; Rastegar et al., 2025). The high

Table 8. Respondents' perception of human capital management.

Human capital management	N	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
As a business owner, I motivate employees to exceed expectations.	424	1.2	1.4	2.1	59.0	36.3	4.28	0.686
As a business owner, I motivate employees to succeed at their work.	424	0.5	1.4	2.1	55.2	40.8	4.34	0.641
As a business owner, I motivate employees to perform efficiently.	424	0.5	0.9	1.9	57.1	39.6	4.34	0.614
As a business owner, I describe to employees how their work contributes to organisational objectives.	424	0.5	1.7	2.4	56.8	38.7	4.32	0.648
As a business owner, I clarify to employees how their work is contributing to organisational performance and effectiveness.	424	0.9	2.1	4.5	55.7	36.8	4.25	0.721
As a business owner, I provide information or evidence that demonstrates the significance of the employees' work.	424	0.9	3.3	5.0	53.1	37.7	4.23	0.769
As a business owner, I use facts and logic when describing the significance of the employees' work.	424	0.7	4.0	2.8	54.0	38.4	4.25	0.757
I will choose the learning target according to our company.	424	0.5	1.4	5.4	64.4	28.3	4.19	0.634
I will choose the better companies to study.	424	0.5	1.4	5.0	64.6	28.5	4.19	0.630
I will have a deep awareness of our situation in time.	424	0.5	1.4	3.5	66.3	28.3	4.21	0.613
I will make timely adjustments to our positioning.	424	0.7	1.2	4.0	64.6	29.5	4.21	0.635
I will be interested in adjusting our emotions to get into the study state and more quickly.	424	0.5	0.7	6.1	66.0	26.7	4.18	0.607
I will learn more about other experiences to help companies cope with the crisis.	424	1.4	1.4	3.1	63.0	31.1	4.21	0.695

mean scores and low variability in responses underscore that HR practices contribute SME effectiveness, resilience, and long-term sustainability. However, several studies offer perspectives that contrast with the current findings. Human capital alone may not guarantee resilience, as skills gaps, limited training, and financial and organisational constraints can reduce SMEs' adaptive capacity unless paired with complementary digital and organisational capabilities (Koporcic et al., 2026; Soto-Acosta et al., 2023). These studies indicate that while HR practices contribute to resilience, their effectiveness is often constrained by organisational, contextual, and structural factors, moderating the uniformly positive effects observed in the current study.

3.7. Business survival

Resilient organisations are better equipped to endure crises, as resilience provides a crucial foundation for long-term continuity (Banu et al., 2024; Pathak et al., 2024). Business survival depends on financial stability, competitiveness, and growth prospects, while adaptability and consistent operations reflect resilience in challenging environments (Setiawati & Mastarida, 2024). This section examines respondents' views on their financial performance and long-term viability, with the findings presented in Table 9.

Respondents assessed business survival in terms of profitability, revenue, financial performance, and competitive standing, reporting moderate optimism with mean scores ranging from 3.12 to 3.38 and low variability (SD = 0.938–1.000), indicating fairly consistent responses. While SMEs generally performed well, perceptions were more neutral regarding profitability and revenue growth. These findings indicate that resilience plays a key role in supporting SME survival, as it enables organisations to maintain operations, recover from disruptions, and adapt to changing conditions. Prior studies emphasise that SME resilience involves survival, reduced vulnerability, rapid recovery, sustainable growth, adaptability, and the development of new capabilities during adversity (Saad et al., 2021). Moreover, resilience is reinforced by factors such as innovation, digital technologies adoption, diversification, efficient resource management, agile organisational structures, employee training, and effective competitive intelligence and benchmarking, all of which enhance competitiveness and long-term survival. However, various studies provide contrasting evidence to the current findings. Amin et al. (2025) found that SME resilience does not always translate into stronger survival outcomes during severe economic shocks. Similarly, Biyela and Utete (2024) highlight that resilience practices may not consistently ensure survival, while Johnson et al. (2024) show that limited access to finance can weaken resilience mechanisms and reduce SMEs' actual survival prospects.

Table 9. Respondents' perception of business survival.

Business survival	N	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
Over the past 3 years, our financial performance has been outstanding.	424	4.0	13.4	13.9	57.3	11.3	3.58	0.990
Over the past 3 years, our financial performance has exceeded our competition.	424	5.2	19.1	37.7	29.7	8.3	3.17	1.000
Over the past 3 years, our revenue (sales) has been outstanding.	424	3.3	13.4	25.0	44.8	13.4	3.52	0.994
Over the past 3 years, we have been more profitable than our competitors.	424	5.2	16.5	46.0	25.9	6.4	3.12	0.935
Over the past 3 years, our revenue growth has exceeded our competitors.	424	5.4	14.6	46.2	26.9	6.8	3.15	0.941

Table 10. Additional factors affecting SME business resilience.

Specific challenge	Percentage
Limited resources	17%
Employee challenges	6%
Access to finance	21%
External Factors	19%
High operating costs	49%
Internal business challenges	25%
Government and institutional challenges	8%
Customer challenges	10%

These studies qualify the current findings showing that resilience alone does not always guarantee SME performance and survival, particularly when SMEs face deeper shocks, persistent constraints or structural barriers.

3.8. Additional issues affecting SME business resilience

Beyond the main factors examined, respondents identified additional influences on business resilience. Overall, 70.5% (299 respondents), including 63% small and 7.5% medium enterprises, reported other contributing factors, as detailed in Table 10.

SMEs experienced resilience challenges from multiple sources including customer-related challenges (10.4%), with 61.3% citing customers' inability to pay, dishonest behaviour, changing preferences, and other factors. Government and institutional challenges impacted 8.4%, with corruption, political interference, policy inconsistency, lack of support, and access difficulties identified as key barriers. Internal business challenges affected 17.4%, with fluctuating input prices, poor location, low sales, limited space, supply chain disruptions, and operational risks cited as key challenges. These findings are documented in Table 10 and are consistent with broader SME resilience literature that recognises customer constraints, institutional barriers, and internal operational pressures as key determinants of business resilience and survival.

Nearly half of the respondents (49.2%) identified high operating costs such as rent, utilities, inputs, fuel, and licenses as a major threat to business resilience, with 53.1% of this highlighting heavy taxation as the most damaging expense. External pressures affected 19.1% of respondents, particularly intense competition, climate-related challenges, weak infrastructure, theft, and fraud. Competition was cited by 42.1% as the most significant external barrier. Other constraints included limited access to finance (21.1%), workforce-related issues (5.7%), leadership weaknesses (2.3%), and constrained resources (2.3%), all of which further undermine SMEs' ability to withstand disruptions. These findings are consistent with prior SME resilience literature, which identifies cost pressures, competition, financial constraints, and institutional challenges as key threats to SME survival and resilience (Omowole et al., 2024; Saad et al., 2021).

Several studies show that resilience is shaped by broader challenges, including fluctuating demand, limited financial buffers, labour gaps, mobility constrains, adverse weather, weak customer engagement, and slow digital adoption (Brown et al., 2022; Lestari et al., 2024). Additional determinants enterprises size, weak risk management systems (Rastegar et al., 2025), inputs sourcing and business location (Johnson et al., 2024), the broader business landscape (Charisma et al., 2025), regulatory and policy environment (Johnson et al., 2024; Lestari et al., 2024), and supply chain risks (Brown et al., 2022). While no specific percentages are reported, the convergence of evidence highlights that SMEs simultaneously face multiple internal and external challenges, underscoring the need for stronger business level capabilities, and supportive institutional frameworks to enhance resilience.

3.9. Linking findings to the theoretical framework

The findings support Contingency Theory, showing that SME survival depends on how effectively internal capabilities such as leadership, human capital, innovation, and financial access align with external conditions. SMEs demonstrating internal capability and external awareness were better able to build resilience and sustain operations during disruptions. While strong alignment enhances resilience and operational continuity, financial constraints, skills gaps, and uneven technology adoption can limit its effectiveness. Consistent with Williams et al. (2017) and Soto-Acosta et al. (2023), the results highlight that resilience emerges and survival emerge from adapting and deploying resources to environmental shocks, reinforcing Contingency Theory perspective. Overall, these results reinforce contingency theory as a valuable lens while acknowledging practical constraints in resource-limited settings.

3.10. Theoretical and practical implications

The study provides practical and theoretical insights for policymakers, financial institutions, and development partners to enhance SME resilience and survival. It translates theory into actionable guidance for

policies, frameworks, programs that foster an enabling environment. While equipping SME owners with practices to enhance access to finance, technology adoption, leadership effectiveness, and human capital management. Policymakers should adopt SME-friendly regulations that reduce compliance costs, offer targeted incentives for innovation, technology, and skills development, and ensure stable predictable policies with simplified licensing and reporting to support growth and formalisation. Governments and financial institutions should enhance SME access to finance by strengthening credit guarantees, promoting risk-based lending, expanding alternative financing options, increasing loan periods, and improving credit information and financial literacy to reduce borrowing barriers and meet collateral requirements.

3.11. Limitations and avenues for future research

While the study offers valuable insights into the role of resilience on SME survival and the mediating factors, it acknowledges several limitations. There is limited literature on SMEs and resilience in developing countries like Uganda, which necessitates reliance on evidence from other contexts, potentially impacting the applicability of the findings. Furthermore, the study was conducted solely in Uganda; the findings may not be generalised to other regions or business sizes due to cultural, economic, and institutional differences. The study was also limited by self-reported data which can be biased, as respondents' perceptions, recall errors, or desire to give socially acceptable answers may reduce accuracy. Additionally, the cross-sectional design captures only a snapshot in time, limiting understanding of the dynamic resilience processes.

Future research should employ longitudinal designs to track SMEs over time, enabling the identification of causal relationships between resilience, mediating factors, and survival. Additionally, studies should also explore how these relationships vary across countries, industries, and economic or cultural contexts, and investigate additional mediating factors to better inform the impact of resilience on SME resilience.

4. Conclusion

SMEs face numerous challenges that adversely impact their performance and long-term viability, underscoring the need for initiatives to support resilience. The study found that resilience is a key determinant of SME survival, with key factors such as access to finance, innovation and technology, leadership and management, and human capital management augmenting the building of resilience and increasing SME survival prospects. These findings suggest that SME survival depends on both resilience capabilities and interconnected mechanisms, emphasising the importance of a holistic, systems-oriented approach to building resilience for SME owners, policy makers, and financial services.

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Ethics approval

Informed consent to participate in the study was collected in writing prior to data being collected.

Author contributions

CRediT: **Eva Ssewagudde Jjagwe**: Conceptualization, Formal analysis, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing; **Natanya Meyer**: Conceptualization, Formal analysis, Project administration, Supervision, Validation, Writing – review & editing; **Chris Schachtebeck**: Conceptualization, Project administration, Resources, Supervision, Validation, Writing – review & editing.

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Data availability statement

Data is available upon reasonable request.

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