Unpacking Organizational Resilience in SMEs in Sri Lanka

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ABSTRACT

This research discusses the determinants of Organizational resilience in Small and Medium-sized Enterprises (SMEs) in Sri Lanka. The aim of this research is to identify which internal and external factors contribute critically towards SME resilience under turbulent situations. A quantitative research design that is based upon the positivist paradigm was used. A stratified sample of SMEs registered under the Industrial Development Board as well as the Ceylon Chamber of Commerce were used in data collection using structured questionnaire. the Present study used SPSS data analysis for correlation and regression analyses to study relationships between Organisational resilience and six predictor variables. leadership agility, Organisational culture and knowledge management, strategic resources and financial stability, technology and digital adoption, supply chain and environmental adaptability, and human capital and workforce agility. Key findings showed that out of the six dimensions evaluated, only technology and digital adoption and, supply chain & environmental adaptability proved to be statistically significant predictors for Organisational resilience. The implications of this research further emphasize the need for Sri Lankan SMEs to make investments into digital infrastructure and develop adjustable, flexible supply chains. Preserving support programs that can increase digital readiness and environmental adaptability among the SMEs should be given priority by the policymakers. The findings indicate the contextualised understanding of resilience, which is applicable both to academic research and practical interventions in the developing economy.

Keywords: Organisational resilience, SMEs, Digital Adoption, Sri Lanka. crisis management,

INTRODUCTION

Organisational resilience is an Organisational ability to forecast disruptions, as well as its capacity to respond to disruptions and continue operations (Duchek, 2020). There are three different subcategories within Organisational resilience. Defensive resilience is centered on crisis response and risk reduction techniques. Executives in SMEs that use defensive resilience keep an eye on threats and take preventative measures by cutting expenses while preparing for future reactions. Proactive method for development and change is a component of progressive resilience. Businesses that use adaptive resilience strategies can innovate and expand their markets in response to risk challenges. Regularity Resilience depends on preserving long term viability and operational stability when faced with uncertain circumstances, SMEs' resilience approach employs slow burnished recovery techniques, employee loyalty retention, and seamless operational stability. The ability to withstand adverse conditions is critical for businesses, especially since Small and Medium Enterprises (SMEs) typically lack the financial backing of larger corporations (Bhamra et al., 2011). Sri Lanka's national economic stability is mainly dependent on SMEs, which account for more than 75% of all enterprises and employ approximately 45% of the workforce. Sri Lankan SMEs have faced significant challenges over the last five years because of external disruptions such as the 2019 Easter Sunday terrorist attacks, the COVID-19 crisis, political upheaval, and economic collapse in 2022. Multiple crises damaged the operational capabilities of SME businesses in a variety of industries, affecting their distribution systems, economic stability, and market demands (Fernando et al., 2022). The study assesses the critical factors

influencing SME resilience in Sri Lanka by examining financial barriers, market turbulence, policy ambiguity, and environmental disruptions.

The successful existence of SMEs alongside their expansion in unstable markets depends on implementing resilience strategies. SMEs work with lower financial reserves and fewer revenue streams and fewer identified contingencies when compared to major corporations (Pal et al., 2014). Surprise disturbances result in serious operational crises along with business closure and financial ruin for companies. Several factors support the need for resilience programs which Sri Lankan SMEs should implement. The financial stability of SMEs largely depends on external funding from banks since economic turbulence makes them prone to loan defaults together with cash flow challenges (Central Bank of Sri Lanka, 2022). SMEs need market agility to change their products and services as well as business models since consumer patterns shift and demand patterns fluctuate (Gunasekara & Fernando, 2023).

Small and medium-sized enterprises mostly depend on local domestic suppliers alongside international partners to secure their supply chain operations. The COVID-19 pandemic together with the economic crisis showcased the necessity of having multiple supplier connections alongside contingency plans (Perera & Jayasinghe, 2020). Government regulations and policy changes effects on SME business performance (Jayasuriya et al., 2022). SMEs can develop tailored strategies to enhance their resilience, ensuring stability and long-term success. Moreover, resilient organisations are better positioned to innovate, seize opportunities, and maintain a competitive advantage during volatile periods. Therefore, identifying factors affecting organisational resilience is necessarily worthwhile.

Economic sustainability is heavily reliant on the survival capabilities of SMEs that operate in crisis prone environments (Lokuge et al.,2023) Sri Lanka's SMEs remain highly vulnerable because they rely on volatile financial and political environments. Research on SME resilience in general but studies on industry-specific influences on SME resilience in Sri Lanka, particularly in the automobile and fertilizer industries, are rare. Policymakers must understand sectoral differences to develop effective business strategies and policy mechanisms. The instability of the vehicle market, combined with problems in the fertilizer supply chain, has exacerbated SMEs' struggles (Madhavika et al., 2024). The study investigates various factors that influence resilience and then proposes appropriate solutions for a variety of SMEs.

Multiple research gaps serve as justification for this study through which researchers must address them. Theoretical research about organisation resilience lacks a comprehensive analysis of Small and Medium Enterprises (SMEs) in emerging economies specifically within Sri Lanka (Haputhanthri et al.,2023). Most of resilience research studies large enterprises while neglecting the individual characteristics of SMEs research about SME resilience in Sri Lanka consists mainly of qualitative studies which primarily rely on interviews and case studies (Jayasinghe et al.,2022). The necessary quantitative study needs to appear which studies statistical metrics between resilience factors throughout multiple business sectors. A practical setback exists in which numerous SME organisations have insufficient structured resilience approaches because standard frameworks insufficiently handle sector specific hurdles. Business leaders and policymakers need data-based information to establish specific action plans which strengthen SME resilience during unstable business conditions.

Sri Lankan SMEs have faced several crises in recent years, threatening both their short and long-term viability. The 2019 Easter Sunday attacks resulted in a significant market decline in the tourism and hospitality sectors, reducing customer interest and business success for associated SMEs (Perera and Jayasinghe, 2020). Multiple lockdowns disrupted supply chains, and consumer behavioural shifts during COVID-19 forced many SMEs to close temporarily or permanently (Wickramasinghe & Weerathunga, 2021). Political instability, economic mismanagement, and fuel shortages all contributed to a worsening of business conditions for SME. In the 2022 economic crisis, followed by Jana Aragalaya protests, created operational uncertainty, lowering investor confidence and causing financial instability throughout the year (Gunasekara & Fernando, 2023). As their primary business challenge, SMEs face severe financial difficulties in meeting their bank loan payment obligations. According to the Central Bank of Sri Lanka (2022), several businesses struggle to manage rising interest rates while also facing capital access issues and currency devaluation, resulting in significantly high default rates. The situation for SMEs particularly in Sri Lankan setting has been exacerbated by unique

challenges to their operations.

The automobile industry experienced critical disruptions in 2020 due to the vehicle import prohibition, which harmed performance for automobile dealerships, repair shops, and parts suppliers (Ranasinghe, 2021). Because of imposed policy constraints, the vehicle market has undergone constant change. Agri business SMEs suffered significant losses after the government implemented organic farming in 2021, resulting in fertilizer shortages (Jayasuriya et al., 2022). Aside from the manufacturing and retail sectors, inflation and currency depreciation have raised manufacturing costs, reducing consumer spending capabilities and resulting in lower business revenues (Abeyratne, 2023). Because of these crises some SMEs closed their business activities parentally and migrate or do another earning methods for cover their needs. Below table mention that the status of SME business in 2022 after crises.

Table 1. Status of businesses by scale of businesses - 2022

Sector	Small			Medium			SME Total		
	Active%	Closed Economic Crises%	Closed covid or other %	Active %	Closed Economic Crises%	Closed covid or other %	Active %	Closed Economic Crises%	Closed covid or other %
Industry	87.1	5.6	7.3	92.7	1.6	5.7	89.9	3.6	6.5
Trade	96.6	0.9	2.5	97.1	1.2	1.7	96.85	1.05	2.1
Services	90	2.3	7.7	77.2	1.2	21.6	83.6	1.75	14.65
Total	91.2	2.9	5.8	89.0	1.3	9.7	90.12	2.13	7.75

(Source – Survey of Ministry of industries 2022)

This Table describe that the 10% of SME Businesses were closed due to unstable economic condition and the pandemic situation. Despite growing interest in resilience, there remains a knowledge gap in comprehensively examining how various factors such as leadership, organisational culture, resource management, employee engagement, and technological readiness interact to build resilience. This research problem is significant because the lack of clarity on these factors may hinder organisations' ability to prepare for and respond effectively to crises, such as economic downturns, natural disasters, or global challenges like pandemics. Addressing this problem can provide actionable insights to develop robust strategies that ensure long-term organisational sustainability and competitiveness.

Research Objectives Research Aim

- To investigate the factors affecting organizational resilience in SME sector in Sri lanka.
- To examine the internal and external elements that affect organisational resilience of SMEs throughout Sri Lanka

LITERATURE REVIEW

A company demonstrates organisational resilience when it anticipates upcoming challenges and withstands adverse events, adapts to damage and recovers operations without disrupting essential tasks and strategic direction. Organisations possess a learning capability that goes beyond survival which allows them to use disruptions to develop better future performance. Various researchers have established multiple viewpoints regarding the definition of organisational resilience. Organisational resilience, according to Prayag and Orchiston (2016), is the ability of businesses to resume their pre-shock regular operations, mainly for disaster recovery and management applications. The research of Duchek et al. (2020) defines resilience as an adaptable

organisational power which helps businesses to handle risks, create responses and extract lessons from crisis situations. The authors of Ma et al. (2018) define organisational resilience as a dual capacity which lets businesses withstand disruptions and succeed even in unstable environments. Multiple studies demonstrate that organisational resilience exists both as an active journey and a functional skill while industrial conditions of unpredictability strengthen its significance.

The survival of SMEs depends heavily on their ability to be resilient primarily because it serves as their strategic advantage and survival factors. SME's inherent nature makes them particularly vulnerable to disruptions because they face numerous organisational boundaries, limited financial capabilities, limited credit opportunities, small employee pools, and unformalised management systems (Herbane,2019). The operating environment in Sri Lanka worsens the existing business vulnerability due to its unstable macroeconomic conditions, political turbulence and environmental unpredictability. Many simultaneous crises which hit Sri Lanka during 2019 Easter bombings and economic downturn plus COVID-19 pandemic have put an extreme stress test on the SME sector's resilience levels in the country (Jayasinghe et al.,2022). The current high levels of turbulence make SME resilience essential for both maintaining sustainable firm operations and maintaining national economic stability because SMEs create substantial employment and production capacity in the country.

An organisation demonstrates resilience based on its strategic orientation and resource capabilities and its preparedness determines its adaptability format (Duchek,2020). Organisations use defensive resilience to defend themselves against external disturbances by executing measures that diminish their exposure to danger. A combination of immediately implemented cost cutting operations and resource management alongside operational contraction make up one part of this approach (Zhang et al.,2022). Many Sri Lankan SMEs maintaining their defensive resilience through fast cost cutting practices followed by concentration on core business operations to stay afloat during emergency periods (Koswatte et al.,2025).

Another manifestation of organisational resilience involves consistency resilience when organisations maintain their operational integrity along with continuously steady performance results during times of extreme stress (McDonald, 2017). SMEs that put together competent leadership along with dependable internal methods and unified workplace environments can preserve operational continuity when faced with disruptions thereby demonstrating consistency resilience (Herbane,2019). Months of established supply chains combined with trusted local networking gives businesses in Sri Lanka this stability during economic turbulence at the national level (Madhavika et al.,2024).

The most advanced and transformative form of resilience involves firms using challenges to stimulate innovative growth and learning capabilities along with recovery from crises. This form of resilience creates a strategic approach during which organisations use crises as opportunities to transform themselves and move forward (Barasa et al.,2018). The enterprises utilized hardship situations to change their operational structures thereby obtaining better market positions.Resilience exists in two dimensions of timing and orientation which produce two additional categories of proactive and reactive resilience (Jia et al.,2020). Proactive resilience relies on predicting upcoming disruptions to establish preparedness strategies that will come into effect before disruptions occur. Scenarios for potential threats should be developed while constructing financial reserves combined with operational systems capable of fast adjustments (Mohamed et al,2019). Sri Lankan SMEs demonstrate less adoption of proactive resilience because they have lack resources as well as an insufficient history of long-term planning among business leaders. The formation of reactive resilience occurs after disruptive events take place when businesses rushed to take measures that reduce shock effects (Nuwan et al.,2024). The crisis periods in Sri Lanka led SMEs to adopt sudden transaction shifts and informal borrowing as their primary response which showed unprepared behaviour rather than planned preparation.

The different types or designs of organisational resilience show how this capability has passive and active elements operating together for a holistic response to challenges. Sri Lankan SMEs need resilience approaches that encompass multiple dimensions since their country presents intricate risks in the market. Organisations must implement defensive strategies while also prioritising consistency and progressive resilience and should develop proactive as well as reactive approaches to succeed in complex combination of crises (Mizrak,2024). SMEs should establish organisational resilience into their core strategic resource planning alongside thinking

processes, so they endure volatility while becoming stronger from those challenges.

Different theoretical views have developed to study organisational resilience because they aim to understand how business entities handle disruptive events and transform into stronger entities. The Dynamic Capability Theory together with the Black Swan Theory serves as key theoretical frameworks which supply comprehensive knowledge about resilience development. These theoretical approaches support each other through their separate views of internal resource adaptation combined with external shock preparedness. The theories create a complete framework to study small and medium-sized enterprise (SME) resilience development within uncertain Sri Lankan conditions.

Dynamic Capability Theory

According to Teece, Pisano, and Shuen's 1997 work Dynamic Capability Theory (DCT) provides essential knowledge about business enterprises confronting turbulence together with uncertain situations. The theory extends Resource-Based View (RBV) by showing that firms need to demonstrate resource reconfiguration ability alongside their basic asset ownership to succeed in changing business environments. Organisations develop dynamic capabilities through their competence to link together and upgrade their internal assets alongside external resources while adapting rapidly to changing situations. Strategic flexibility and innovation and learning take precedence under DCT since the approach discourages static operational routines from being used as a default mode.

According to Teece (2007) organisations must achieve three fundamental elements. Ability to detect market opportunities and threats followed by utilizing mobilized resources to capture those chances and finally the need to modify organisational capability configurations to stay competitive. The process follows a circular pattern that consists of routine shifts spanning change and adjustment phases. The theoretical framework proves essential for situations comprising volatility and uncertainty along with complexity because organisations need agility and resilience to survive rather than stability.

The Sri Lankan small and medium enterprise sector exposes itself to multiple ongoing crises including political problems and inflationary forces, so dynamic capability theory proves suitable for analysing effects on this sector. The success of firms during this climate depended on their ability to detect upcoming threats and possibilities as well as their speed to deploy organisational assets while redesigning their business operations (Mudalige et al.,2016). Services and platform transitions among small businesses alongside new partner development and implementation of contactless operations during COVID-19 serve as theoretical examples.

Sri Lankan SMEs face difficulties implementing dynamic capabilities because the lack of financial resources as well as poor infrastructure and insufficient technical capabilities. While SMEs demonstrate the desire to adjust their business model structural elements prevent them from carrying out strategic changes (Haputhanthri et al.,2023). The theory's essential aspect requires capabilities to exist and be put into practice. A firm's dynamic capabilities become resilient only when this organisation possesses independent abilities together with operational resources. Organisational resilience develops from dynamic capability theory through fundamental processes that improve how companies detect disruptive events along with their ability to cope with them and develop new appropriate strategies. The theory transforms resilience into an active renewal process because organisations gain strength through internal transformations while using strategic learning capabilities.

Black Swan Theory

The resilient organisation builds modular integration systems and distributes authority across units while creating a workplace culture which backs experimental procedures during situations of uncertainty. Traditional planning methods show their technical boundaries because organisations frequently create unsafe forecasted assumptions with past data points. Black Swan events are defined by Taleb (2005) as unforeseen unusual occurrences which produce extreme damage after they become explainable in reflection.

Modern systems that maintain efficient operations exclusively demonstrate high vulnerability to black swan

events according to black swan theory principles. Business organisations depending on linear planning models and strict hierarchical structures together with tightly integrated systems are most affected by Black Swan events (Nafday,2009). According to this theory, businesses should be ready and implement optionality and redundancy rather than concentrating on individual risk forecasts. This theory finds useful application through the analysis of SMEs in Sri Lanka. The recent series of inconvenient events starting with the Easter bombings of 2019 through the pandemic of 2020 and the resulting economic collapse set a detrimental path for SMEs in the country during the last five years (Nguyen,2023). The disruptive incidents occurred without warning and caused deep business disruption beyond what standard business forecasts anticipated. Companies which operated with diversified activities, emergency cash amounts and decentralized leadership systems survived the unexpected disturbances better (Sheffi,2015).

Organisational resilience gains its most valuable contribution through Black Swan Theory by teaching us how to plan systems based on disruption rather than control (Dindarian,2023). The theory focuses on organisational resilience by predicting unexpected events will happen and promoting flexible structures which can absorb shocks in their operations (Duchek,2020). The resilient organisation builds modular integration systems and distributes authority across units while creating a workplace culture which backs experimental procedures during situations of uncertainty.

This perspective provides foundational support for organisational resilience because it promotes organisational strength alongside the capability to adapt along with post-shock learning objectives. Through crises organisations gain opportunities to make strategic improvements leading towards the lasting modifications instead of mere restoration to pre-existing conditions. Small and medium enterprises which embed this perspective will effectively withstand disruption while using unexpected situations to transform themselves beyond predictions. Several Critical knowledge gaps persist in the research on organisational resilience regarding Small and Medium Enterprises (SMEs) in developing economies such as Sri Lanka. Research currently exists mostly with large Western organisations using resources and digital platforms that differ greatly from what SMEs use (Duchek, 2020; Burnard & Bhamra, 2011). The Sri Lankan SME sector currently insufficient research on resilience within specific business contexts.

The fragmented Approach used by scholars in their investigations creates a second gap because they analyse discrete elements instead of viewing resilience as a diverse system. The simplified comprehension system this view employs overlooks how internal factors together with external facilitators create resilience strengths such as digital readiness and Workforce Agility and environmental flexibility (Lengnick-Hall et al., 2011; Korber & McNaughton, 2018). It requires new research to create a unified framework which unites various resilience variables into a complete assessment system.

Studies currently focus on financial stability and leadership adaptability and crisis management while lacking comprehensive analysis of resilience development throughout time. Most research provides universal resilience frameworks that fail to deliver industry-specific solutions for sectors such as manufacturing or technology or retail. The minimal analysis of how digital transformation affects the resilience outcomes of resource-constrained SMEs represents an important research gap despite broad recognition of digital transformation's significance. Structural analysis dominates research studies while surveys disregard psychological and behavioural elements including leadership mindset and employee engagement and organisational culture that drive sustainable resilience development. Research to bridge these knowledge gaps would enable SMEs to obtain better actionable decisions and tailored strategies for navigating upcoming uncertainties.

SMEs face a significant research gap because the existing studies do not thoroughly investigate their learning outcomes and proactive readiness after facing crises. Analysis of how SMEs develop resilience through time must occur across various external shocks. Because compound crises like economic downturns and pandemics and political instability are becoming more frequent. Active crisis response remains the focus of most studies because they do not study the evolving capabilities and unexpected event readiness that distinguishes resilient SMEs from their less resilient counterparts (Taleb, 2007). This research initiatives to connect the existing literature gaps through a quantitative positivist methodology which identifies comprehensive empirical evidence on what drives organisational resilience in Sri Lankan SMEs.

METHODS

To accomplish the main purpose of the research, this study established the framework and research designing process consisted of three primary steps: selection of right unit of analysis, data gathering, and data analysis. In terms of the selection process, Sri Lanka lacks a well-maintained and developed SME list. However, the Chamber of Commerce and the Ministry of Industries maintain separate lists of SMEs. We consolidated these two lists and amalgamated them into a single database and after depletion of multiple entries, the final database consisted of 8438 SMEs for the study's population. Accordingly, this database was considered as the newly created contact list of SMEs. After alphabetization of the list, a questionnaire was circulated among 200 SME leaders (100 SME units) randomly and received 150 SME leaders' responses from 75 SME units. The sampling method is critical for the quality of the research since it identifies and evaluates how respondents were selected to participate in the specified study (Easterby-Smith et al., 2021).

Conceptual Framework

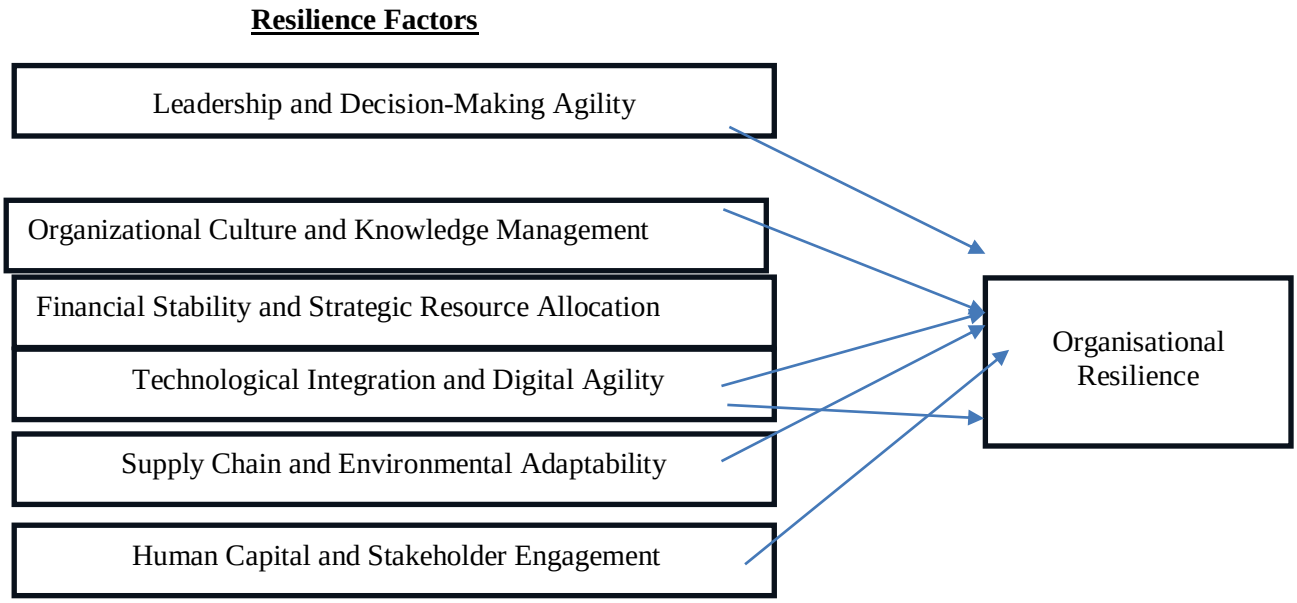

Figure 1: Conceptual Framework

The theoretical structure of this investigation explores pivotal organisational elements inside and outside of enterprises to understand how they advance resilience among SME businesses that face crisis-related environments in Sri Lanka. According to Black Swan Theory and Dynamic Capability Theory (Teece et al.,1997) an organisation requires resource sensing ability and resource seizing capability alongside resource reconfiguration assets to navigate dynamic market conditions (Taleb, 2007).

A comprehensive analysis of existing research documents has led to the development of six separate factors which are predicted to impact organisational resilience as the dependent measure. The independent variables in this study demonstrate a positive relationship toward organisational resilience capacity which refers to the ability to predict disruptions alongside actively responding to them along with the included ability to absorb and recover following disruptions without weakening performance levels. The framework functions as the foundation which guides researchers in developing their hypotheses along with building questionnaires and establishing empirical tests for later stages of study.

Hypothesis Development

- H1: Leadership and decision-making agility have significant effects on organisational resilience
- H2: Organisational culture and knowledge management has significant effect on organisational resilience

- H3: Financial stability and strategic resource allocation has significant effect on organisational resilience
- H4: Technological integration and digital agility have significant effect on organisational resilience
- H5: Supply chain and environmental adaptability has significant effect on organisational resilience.
- H6: Human capital and stakeholder engagement has significant effect on organisational resilience.

The proposed research utilizes these hypotheses to quantify the relationships between variables in Sri Lankan SMEs. The research adopts quantitative analysis through cross-sectional methods to study organisational factors in SME enterprises regarding their resilience capabilities. The cross-sectional design delivers suitable results because it gathers population data during one time which supports existing pattern examination before tracking changes over time. This research embraces both the positivist paradigm and deductive approach by selecting a design that uses established theories from literature to create testable hypotheses which will be evaluated through empirical data. The research design values objective evaluations that can be duplicated and applied across different settings because statistically valid policy-relevant findings depend on these characteristics. The study implements structured questionnaire methods to measure leadership elements and financial stability and technology adoption and risk management and stakeholder engagement factors which create a strong methodological framework to identify the main predictors of organisational resilience in SMEs. Stratified sampling methods included in the design produce representative data distribution across service and manufacturing sectors thus improving the significance and reliability of obtained results.

RESULTS AND DISCUSSION

The 150 SMEs are divided equally between the manufacturing and service sectors, with 75 responders in each group. This analysis involved Reliability of the latent construct. In order to be entitled to be considered as the assumed criteria for the measurement, Internal reliability of Alpha value revealed more than 0.7. This study incorporates 31 measured indicators with 7 variables.

The Relationship between Factors and Organisational Resilience

Correlation statistical tool used to determine the significance of the connection between factors and organizational resilience.

Table 2: Correlation between the Influencing Factors and Organisational resilience

Variables	Pearson Correlation Coefficient	Sig.
Leadership and Decision-Making (LDM)	-.185*	.024
Organisational Culture & Knowledge Management (OKM)	.307**	.001
Strategic Resources and Financial Stability (SRF)	.221**	.007
Technology and digital Adoption (TDA)	.593**	.001
Supply Chain & Environmental Adaptability (SCE).	.635**	.001
Human Capital and Stakeholder Engagement (HCW)	0.191*	.019

In accordance with the findings Table 2, revealed that a negative relationship exists between leadership and decision-making and resilience suggesting that erratic or overly fast leadership can destabilise organizational resilience. It is clear from the results that resilience in SMEs facing several crises is best predicted by external

investments, such as digital technology and flexible supply chains, despite the importance of internal capabilities. Resilience is promoted by effective leaders who value flexibility, openness, and prompt decision-making. Leaders that adopt democratic and diffused decision-making techniques, fostering team involvement and supporting locally informed decisions, are better able to steer their organizations through challenging periods. These leaders create robust networks, take use of cultural ties, and remain adaptable, all of which aid SMEs in absorbing shocks and recovering more quickly. Furthermore, for survival and sustainability, relational and operational resilience made possible by leadership are crucial. While establishing the foundation for long-term resilience and growth, leaders who are aware of the subtleties of crisis leadership serve as stabilizing forces, guiding their teams with assurance and clarity. This result is supported by Christopher and Peck (2004), who contend that organisations must depend on resilient supply chains to deal with, recover from, and plan for interruptions. Pettit et al. (2010) discuss that SME resilience during volatile times greatly relies on logistics adaptability and environmental alignment.

There is a moderate positive relationship between organisational culture and knowledge management and SME resilience. The culture of an organization can both help and hinder efficient knowledge management. Collaborative, individual-respecting, and innovative cultures are more likely to promote resilience during different phases of the organization's life cycle. In particular, innovation-focused cultures that are outcome-oriented improve resilience in the stages of growth and maturity. Managing knowledge does not directly increase an organization's resilience. Organizational innovation acts as a mediator for its influence instead. To observe noticeable increases in resilience, SMEs must actively convert knowledge into creative behaviors. For instance, resilience can only be enhanced by absorptive capacity, or the capability to identify and use outside knowledge, in conjunction with superior inventiveness. Knowledge-oriented leadership also greatly improves coping and adaptation skills, particularly when outdated knowledge is eliminated through organizational unlearning. In line with this finding, having cultural support for learning and information exchange advances the capacity to manage change, as Nonaka and Takeuchi (1995) describe. Schein (2010) argued that organisational cultures highly attuned to adaptability reinforce mutual trust and strengthen resilience when circumstances are uncertain.

Barney's (1991) RBV is supported by the moderate association found between strategic resources and financial stability and SME resilience. Since SMEs frequently have limited funding, strategic agility is crucial. The results showed that strategic resource deployment greatly improves resilience, particularly when it is in line with dynamic capabilities. SMEs are better able to adjust to disturbances and preserve continuity when they proactively manage their internal resources, including technical assets, operational flexibility, and human capital. One of the key pillars of resilience is financial stability. Businesses that follow good financial practices, such as diversifying their revenue sources and keeping liquidity buffers, are better able to withstand shocks. Furthermore, especially in medium-sized businesses, strategic sensitivity the capacity of SMEs to predict shifts in the market—is essential to developing robust solutions. By incorporating flexibility and responsiveness into their business models, leaders who translate strategic direction into resilience capabilities help their organizations prosper even in times of uncertainty. Firms capable of fiscal discipline, effective resource planning, and the development of realistic contingency plans are more able to maintain operations when faced with external disturbances (Herbane, 2010).

The results show a strong, positive association between technology and digital adoption as proof of digital transformation's effectiveness in supporting Organisational adaptability. The results of the study highlighted how digital maturity can improve long-term viability and flexibility. This research also showed that digital tools greatly increase the organizational learning and innovation ability of SMEs, which in turn increases their resilience. SMEs are better equipped to react to changes in the market, take advantage of new opportunities, and become more flexible by incorporating digital tools into their operations. Furthermore, in important areas like situational awareness, vulnerability management, and adaptive capacity, SMEs that are digitally mature that is, have strong digital capabilities and leadership showed higher levels of resilience. In addition to being more inventive and creative, these businesses also demonstrate more responsive and decentralized decision-making. Crucially, the best results from digital technology adoption come from a sustainable resilience strategy that matches technology expenditures with long-term organizational objectives. Bharadwaj et al. (2013) also proposed that digital capacities drive organisational agility and readiness, as Mikele et al. (2020) demonstrates that effective technology use is important for stable decision-making and operations amid

uncertainty, with special relevance in small and resource-constrained organisations.

The findings from the correlation show that supply chain and environmental adaptability have the most markedly positive connection with organisational resilience. The results of the study on the relationship between SMEs' organizational resilience and supply chain and environmental adaptability highlight the significance of flexibility, sustainability, and strategic alignment in managing disruptions. When it comes to responding to external shocks like natural catastrophes, economic downturns, or geopolitical upheaval, SMEs with flexible and agile supply chains are more prepared. Important elements that are essential to improving supply chain resilience are cost control, information systems, and teamwork. Environmental flexibility, especially through sustainable activities, is another important factor that boosts resilience. In addition to lowering operating expenses, SMEs that save resources, cut waste, and implement eco-friendly practices also enhance their standing with stakeholders. The ability of the organization to handle uncertainty is further strengthened by an adaptable culture that encourages innovation and change.

Human capital and workforce agility exhibit a moderately significant, though weaker, relationship. Lengnick-Hall et al. (2011) observed that the presence of employee adaptability and proactive behaviour strengthen resilience by leveraging dynamic capabilities. According to Boin and van Eeten (2013), resilient organisations with empowered and flexible workers recover and innovate more efficiently during crises. A knowledgeable, flexible, and empowered workforce is essential to maintaining business continuity in times of crisis. SMEs that make investments in human capital development—through leadership training, employee engagement, and training are better equipped to handle change and uncertainty. Resilience is largely influenced by workforce agility, which is the capacity of workers to quickly adjust to changing circumstances. Flexibility, initiative, learning agility, and self-control are some of its characteristics. At the SMEs level, resilience is greatly increased by flexible leadership and a culture that values independence, teamwork, and ongoing education. These factors allow SMEs to overcome obstacles and even "bounce forward" by developing and adapting to new situations.

Factors Affecting Organisational Resilience

Employing organisational resilience for calculating influencing factors, the regression analysis is an effective tool for determining whether a certain factor has an impact on a certain scenario. Using regression analysis, we can unambiguously reveal critical elements, test the possibility of dropping variables, and analyse the relations between the variables. Examples of primary uses of a regression analysis include forecasting, time series modelling, and establishing relationships between variables.

Table 3: Impact of Influencing Factors on Organisational resilience

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.717[a]	.514	.493	.74408	1.465

a. Predictors: (Constant), HCW, LDM, SCE, OKM, TDA, SRF

b. Dependent Variable: ORE

Organisational resilience (ORE) was examined using multiple regression analysis with six key independent key variables namely leadership and decision-making agility (LDM), organisational culture and knowledge management (OKM), strategic resources and financial stability (SRF), technology and digital adoption (TDA), supply chain and environmental adaptability (SCE) and human capital and workforce agility (HCW). R value as indicated in table 3 is 0.717, which is showing a strong correlation between the predictors and level of Organisational resilience. An R-square of 0.514 means the six independent factors used explain 51.4% of the differences found in the Organisational resilience. Adjusting for the predictor count, the Adjusted R-square values of 0.493 show that the model continues to be powerful in explaining a good proportion of variance. An error standard of 0.74408 is indicated indicating average difference between measured and forecasted resilience scores, and a Durbin–Watson value of 1.465 illustrating minimal serial correlation of residuals.

Table 4- Overall impact of Influencing Factors on Organisational resilience

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	83.604	6	13.934	25.167	<.001[b]
	Residual	79.173	143	.554		
	Total	162.777	149			

(Source: Author developed 2025)

a. Dependent Variable: ORE

b. Predictors: (Constant), HCW, LDM, SCE, OKM, TDA, SRF

The Statistical significance of the whole regression model is assessed by the ANOVA table (Table 4.9). The F-statistic of 25.167 (df = 6, 143; The fact that the F-statistic is significant, $p < 0.001$, and df = 6, 143, confirms the fact that the regression model, collectively, indicates a statistically significant impact on Organisational resilience above that which could occur by chance.

Table 5 Factorial Impact

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	.333	.398		.839	.403		
	LDM	-.086	.066	-.089	-1.299	.196	.729	.729
	OKM	.064	.088	.047	.735	.464	.817	.817
	SRF	.077	.073	.076	1.058	.292	.651	.651
	TDA	.350	.075	.330	4.645	<.001	.675	.675
	SCE	.399	.067	.420	5.944	<.001	.682	.682
	HCW	.021	.072	.019	.296	.768	.800	.800

a. Dependent Variable: ORE

Table 5 shows that the only predictors of organisational resilience after all the variables were entered into the model are Technology and Digital Adoption (TDA) ($\beta = 0.330$, $t = 4.645$, $p < 0.001$. SMEs may increase communication, expedite decision-making, and respond more quickly to shifting market conditions by incorporating digital tools into their core activities. Additionally, using digital technology encourages innovation and organizational learning, which fortifies resilience by allowing businesses to investigate different approaches and seize new possibilities (Awad & Martín-Rojas, 2024). According to empirical data, resilient SMEs are more likely to use digital technologies to expand and change during crises as well as to survive them (Őri, Szabó, Kő, & Kovács, 2024). Crucially, the relationship is reciprocal: resilient firms are better able to maintain their digital transformation initiatives under stress, and digital adoption increases resilience. This dynamic interaction emphasizes how crucial it is to include digital initiatives into larger resilience frameworks in order to maintain competitiveness and sustainability over the long run. These results further underpined with Bharadwaj et al. (2013), who suggest that the digital capabilities promote operational agility and crisis responding. Similarly, the role of supply chain flexibility for resilience is also stressed, when environmental volatility is present (Christopher and Peck,2004). The results indicate that a significant-level improvement in digital infrastructure or external adaptability leads to considerable increases in SMEs' resilience in Sri Lanka.

Other factors (Leadership Agility, Organisational Culture and Knowledge Management, Strategic Financial Resources, and Human Capital Agility) were found not to make significant predictions ($p > 0.05$) which indicates that their individual contributions are lost when technological and supply chain competencies are tested. This bodes well with Duchek's (2020) claim that resilience is now more reliant on external responsiveness and digital transformation than on traditional internal architectures.

The findings also revealed that supply chain and environmental adaptation are important factors in improving organizational resilience among small and medium-sized firms (SMEs). In an increasingly turbulent global market, SMEs must devise adaptable and responsive supply chain strategies to survive shocks and ensure continuity. According to research, proactive resilience techniques, such as ambidextrous capabilities and dynamic supply chain topologies, considerably boost the performance and adaptability of SMEs. Environmental adaptability, which includes the ability to adjust to legislative changes, ecological challenges, and changing customer expectations, contributes to resilience by encouraging sustainable and agile practices. SMEs that engage in collaborative supply chain interactions and outsourcing are better able to absorb shocks and recover from disruptions, particularly during stormy times (Manathunge et al., 2021). Incorporating environmental factors into supply chain choices also promotes long-term competitiveness and stakeholder trust in addition to reducing risk. For SME ecosystems to be robust and able to thrive in the face of unpredictability, supply chain agility and environmental responsiveness must work together.

Analysis of Hypothesis

The analysis of Pearson correlation coefficients helps exist a quantitative measure of the strength and nature of some associations between suggested variables and Organisational Resilience (OR) among Sri Lankan SMEs. Each hypothesis is then quantified based on the nature of correlation – positive or negative, whether it is statistically significant, and whether it is consistent with pre-existing research evidence. Hypothesis analyses are shown below.

Table 6. Analysis of Hypothesis

Hypothesis	**Test value**		**Conclusion**
There is a significant relationship between Leadership and Decision-Making and the Organisational resilience	r= -.185*	p= .024	Not Supported
There is a significant relationship between Organisational Culture & Knowledge Management and the Organisational resilience	r= .307**	p=<.001	Supported
There is a significant relationship between Strategic Resources and Financial Stability and the Organisational resilience	r=.221**	p=.007	Supported
There is a significant relationship between Technology and digital Adoption and the Organisational resilience	r=.593**	p=<.001	Supported
There is a significant relationship between Supply Chain & Environmental Adaptability and the Organisational resilience	r=.635**	p=*<.001	Supported
There is a significant relationship between Human Capital and Workforce Agility and the Organisational resilience	r=.191	p=.019	Supported

DISCUSSION AND CONCLUSION

The research addressed each of the six specifically described objectives combining theoretical insights and empirical evidence. The research is opposed by exploring organisational resilience theory and assessing its

relevance for small and medium-sized enterprises (SMEs) in critical environment. A wide literature review enabled the use of such theories as Dynamic Capability Theory and Black Swan Theory which underscored their relevance to the formulation of adaptive strategies for Sri Lankan SMEs with crisis-prone environments.

Secondly, the investigation explored theoretical perspectives that explain the processes of SME resilience, explaining focus being mainly on leadership agility, financial stability, and organisational culture. While financial stability and the knowledge management both positively influence resilience, leadership agility had a negative linkage to organisational resilient. This means that, prompt decision-making without powerful support structures can weaken instead of building resilience in SMEs.

The fourth objective aimed to quantify the impact of financial problems and loan stress on SME viability. Although quantitative data on banking requirements was not NC, financial capacity was captured through the variable strategic resources available to SMEs. Quantitative information was obtained from SMEs in both the manufacturing and service sectors, supporting the achievement of this objective. As evident from the data, there was consistent occurrence of issues (lack of technology, supply chain irregularities, and unpredictable regulations) that all collectively demonstrate the systemic risk SMEs face irrespective of the industry.

The fourth goal was to measure the relationship between financial problems of small and medium enterprises. Financial capacity was assessed from the view of indicators of strategic resources and financial stability. Although these variable addresses greater resilience, statistical significance was not achieved, that is, significant financial resources alone are not sufficient for increased resilience when combined with other adaptive capabilities.

Fifth, the research measured the influence of external forces (economic and environmental adaptability) to SME resilience. The goal was mainly accomplished. Supplying chain and environmental adaptability that became the pivotal influence on organisational resilience. Regulatory shocks and countering them, and ensuring operational stability in external shocks, significantly contributed to resilience and recovery of SMEs.

Finally, the research aimed at bringing forward financial, regulatory and managerial approaches that encourage increased resilience. This objective was met by relying on statistically proven insights. Prominent recommendations highlighted the need to enhance digital capabilities, increase operational agility levels, and assist in policy changes that will enhance SME access to funds and their adoption of technology. These strategies are meant to help both practitioners and policymakers to improve SME resilience against uncertainties.

CONCLUSION

The research addressed the issue of elucidating the variety of factors that condition organisational resilience of the Sri Lankan SMEs, with particular focus on such environments where compounded crises dominate. Based on this research analysis, Supply Chain and Environmental Adaptability and Technology and Digital Adoption were identified as the most positively influencing the resilience variable more than any other variables considered. The findings of the study agree and support the current knowledge and show the strategic merits that come from external capabilities as they enhance the resilience of small and medium enterprises (SMEs). This study empirical confirmation of digital adoption and supply chain adaptability as key indicators of resilience under-researched situation of Sri Lankan SMEs particularly during compound crisis situations. By applying a resilience framework to this economic and political backdrop, the research takes extant theoretical models and extrapolates them to emerging markets and complex vulnerabilities.

Findings from this study confirm earlier research that confirms the critical role played by digital tools in strengthening an organizations' resilience during periods of uncertainty. According to Martins et al. (2022), Organisations that are fluent in digital systems, cloud technology, remote workforce flexibility, and digital communication are well equipped to offer response and recovery. Nkomo & Kalisz (2023) found out that digital development aids SMEs in responding to shifts in customer expectations rapidly and maintain critical operations during crises.

In this regard, Supply Chain and Environmental Adaptability were found to have the greatest positive effect on resilience. This result aligns with the conceptualities of Pettit, Fiksel, and Croxton's (2010) model, wherein these supply-chain flexibilities include flexibility, redundancy, and adaptability. In the wake of COVID-19, the empirical evidence of Ivanov and Das (2020) showed that companies that were dynamic in sourcing and agile in logistics were more successful in retaining operational stability. The work is reflective that SMEs bragging about robust supply chains and flexibility to adapt to changing environmental standards are particularly robust to external change. Because of the recurring shenanigans triggered by the volatility of Sri Lanka's economy and politics, adaptability is not only desirable but essential to guaranteeing a balanced supply network.

Although leadership agility, financial stability and organisational culture are theoretically important none of these contributed significantly to the predictive ability of the regression equation. This contrast suggests that although internal resilience is important, SMEs should strengthen their structural and systemic cells, as they are constrained in their resources.

From the research, technological integration and supply chain flexibility are critical SME resilience drivers. Such capabilities enable firms to endure immediate disruption, and furthermore, strategically readjust to, and grow for such evolving external circumstances. Conclusively, SMEs which would want to develop resilience should focus on developing digital infrastructure as well as agile logistics, coupled by regulatory and infrastructural support.

RECOMMENDATIONS

Since Technology and Digital Adoption and Supply Chain & Environmental Adaptability was the only statistically significant predictor of Organisational resilience, focused change on these two areas is required to enhance resilience in Sri Lankan SMEs.To begin with, digital readiness should be made a high priority strategic agenda. The results reveal a wide digital gap since the lowest mean scores achieved represent technology adoption. SMEs need to purchase scalable and affordable digital tools including cloud computing, digital inventory systems and remote collaboration platforms. These technologies not only provide continuous business during disruptions but also ensure efficiency and competitiveness. It is very necessary that the government gets involved in this process. By funding through digitalization grants, subsidised training and public-private digital incubation hubs, the state can address the gap of the digital divide and help smaller firms to gain access to and implement relevant technologies.

Secondly, the adaptability of supply chain as well as an environment needs to be enhanced through strategic diversification and agility. SMEs must examine their supply chains as to key dependencies and plan for the sourcing and delivery in a crisis. Diversification of suppliers particularly local alternatives and digitization of the logistics, using devices such as ERP systems and real-time tracking systems can drastically reduce response times to disruptions. In addition, scope for environmental adaptability should be facilitated by integrating operational practices with sustainability standards, regulatory requirements as well as climate-related risk controls. This includes such green logistics as well as sustainable procurement and risk assessment tools that enable firms to be flexible in response to ecological and market changes.

In general, resilience in SMEs can be significantly achieved by enhancing digital infrastructure and developing flexible, adaptive supply chains. These two areas should be the area of primary interest of firm-level strategy and national SME development policies in Sri Lanka.

Future Research

Based on the existing findings and limitations of the present research, there are several directions for future research proposed. First, future research should use a longitudinal research design to study the evolution of Organisational resilience across time. This would allow researchers to evaluate the long run effect of changes in digital capabilities or supply chain strategies on resilience and deliver more robust causal inferences. Secondly, mixed methodologies, such as qualitative interviews, secondary financial data, observational case studies should be used to reduce biases present in the self-reported data in future research. This would enable us to understand deeper the practice implementation of SMEs in resilience strategies and add richer contextual

interpretation. Third, extending this study in terms of its geographical and industry breadth (i.e., SMEs from varying economic industry sectors or in rural and urban areas) would improve generalisation of the findings. Cross country comparisons within the regions of South Asia or lesser developed countries may identify cross-cultural or structural disparities of resilience drivers.

In addition, future models may incorporate other variables; for example, innovation capacity, external funding acquisition, government regulatory support, customers acquisition. Such factors may buffer or condition the relationship between digital readiness, flexibility of the supply chain, and resilience. Finally, when approaching more complex interrelationships and mediation effects as well as nested data structure such as firm size or sectorial effect in future studies, more advanced statistical tools may be used, i.e., structural equation modelling (SEM) or multilevel modelling, to boost the analytical depth. These findings underscore the significant importance of external capabilities in assuring SMEs survive disruptions and continue operations in unstable environments

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