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Article

From Resilience to Sustainability: The Mediating Role of Risk Management during Sri Lanka's 2022/23 Economic Crisis

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ABSTRACT

This study investigates the interdependence among social system resilience, risk management, and sustainability in the context of Sri Lanka's recent economic crisis. It covers 372 individuals from two districts in Sri Lanka. Data collection was done physically. Data was analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Multiple regression analysis shows a significant influence of social system resilience and risk management on sustainability. The findings indicate that risk management mediates the relationship between social system resilience and sustainability. These concepts support filling the knowledge gaps that exist in the current literature related to economic challenges, enhancing social system resilience, and informing policy development. Further, the results guide the policymakers in developing and executing interventions for improved resilience of communities and organizations while providing strength to survive in economic shocks and foster sustainable development. Further, this research highlights the importance of considering these components for the development of sustainability frameworks.

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Introduction

Long-term resilience is highly important for organizations and for countries as whole. SSR and RM can be combined to effectively reduce risks for ensuring resilience (Walker et al., 2002; Welsh, 2014; Marchese et al., 2018). This can facilitate for a sustainable future. Social System Resilience (SSR) approaches support identifying and address the causes of social vulnerabilities such as poverty, inequality, and environmental degradation. (Walker et al., 2002; Brown, 2014; Welsh, 2014; Béné, 2020; Eslamian et al., 2021). Risk Management (RM) measures can reduce the likelihood and impact of specific risks, according to Srinivasa Rao et al., (2019); Jones et al., (2022); Sharifi and Salehi, (2022). According to previous studies, collaboration of SSR, RM and sustainability can to effective sustainable solutions. It can help to address the underlying causes of weaknesses and build resilience.

Moreover, integrated SSR and RM can create synergies between different sectors and stakeholders, leading to more effective and efficient solutions. For instance, by collaboration with communities, risk management institutions may effectively address the fundamental social and economic determinants that contribute to vulnerability. This enables the establishment of targeted risk reduction measures that are specifically designed to meet the unique requirements of the community.

Sri Lanka, home to 22 million people, faces frequent natural and man-made disasters. The 2004 Indian Ocean earthquake and tsunami killed 31,187 and displaced 545,715 (Suppasri et al., 2015). A 30-year civil war ended in 2009, severely affecting social cohesion and economic progress (Korf and Silva, 2003). The 2019 Easter Bombings disrupted a decade of stability (Chandradasa et al., 2020). The COVID-19 pandemic further strained the economy (Roshana et al., 2020). In 2022, Sri Lanka declared bankruptcy amid its worst economic crisis since independence, driven by poor governance and corruption (Abeyagoonasekera, 2023; George et al., 2022). At the same time, Sri Lanka was in the grip of a severe foreign exchange crisis. This meltdown was not a result of a short-term phenomenon. The most recent positive trade balance of the economy was reported in 1977 and for the past five decades, there have been no effective measures to make this gap positive. Even though public debt is inevitable for developing economies, Sri Lanka has excessively relied upon internal and external debt, leading to a weak fiscal position. It is no doubt that it has fallen victim to China's well-acclaimed debt-trap strategy. Public debt as a percentage of gross domestic product (GDP) exceeded 100% in the years 2001 (103.2%), 2002 (105.4%), 2003 (105.8%), 2004 (105.5%), 2021 (100.1%), and 2022 (113.8%) as a vicious cycle. The collapse of the tourism industry due to the Easter Sunday Bombings in 2019 and the COVID-19 pandemic exacerbated the foreign exchange crisis. The governing party's reluctance to seek financial aid from the International Monetary Fund (IMF) and a sequence of imprudent policy choices have resulted in the depletion of the nation's foreign reserves.

The crisis in Sri Lanka has multifaceted impacts, including political instability, protests, and social unrest, which degrade health and quality of life (Thomas et al., 2016; Shoib et al., 2022). Scarcity of essential pharmaceuticals hampers cancer care (Das and Chandra, 2022), and cardiovascular morbidities rise due to stress and poor healthcare (Matthias and Jayasinghe, 2022). Acute malnutrition is projected to increase significantly, affecting children for generations (Devapriya, 2022). Growing utility bills and inadequate preventive measures may lead to more communicable diseases. Economic decline causes anxiety and uncertainty (Jang et al., 2022), and people sacrifice self-care to alleviate poverty (Ranatunga and Dunusinghe, 2021), hindering sustainable development (Weerasooriya et al., 2023).

Given these widespread socio-economic and health challenges, building resilience and effectively managing risks are essential for ensuring stability and long-term recovery. SSR enables individuals and communities to recover from economic crises through adaptability. On the other hand, RM provides a structured approach to mitigating the adverse effects of the crisis. Integrating SSR and RM into Sri Lanka’s recovery strategies is crucial to strengthening social and economic resilience and fostering a sustainable future (Sooriyaarachchi and Jayawardena, 2023). SSR is an important requirement to face and recover from challenging events such as economic crisis (Pine, 2012; Berkes and Ross, 2013; Welsh, 2014). RM process helps to mitigate the risks as much as possible (Bocchini *et al.*, 2014; Lounis and McAllister, 2016).

Risk management in Sri Lanka faces challenges due to corruption and poor public resource management (Munasinghe, 2020; Sharifi and Salehi, 2022). The COVID-19 pandemic exacerbated economic crises, job losses, and political instability. Social safety nets, crucial in emergencies, were hampered by reduced incomes (Moffitt, 2013). Social system resilience, defined as the ability to withstand and recover from disruptive events (Pine, 2012; Berkes and Ross, 2013; Welsh, 2014;

Marchese et al., 2018), is broader than risk management and essential for sustainability (Brown, 2014; Ifejika Speranza et al., 2014; Ibn-Mohammed et al., 2021). Transitioning includes investments in sustainability and policy reforms

(Pretty, 2008; Owusu and Asumadu-Sarkodie, 2016; Geissdoerfer et al., 2017; Marchese et al., 2018; Munasinghe, 2020; Eslamian et al., 2021; Ibn-Mohammed et al., 2021).

Several studies have been conducted to investigate the concepts of SSR and RM. According to a study done by Lounis and McAllister, (2016), the findings prove that a risk-based decision-making system is suitable for sustainable and resilient infrastructure systems. The study done by Bocchini *et al.*, (2014) theorized a model for the resilience and sustainability of civil infrastructure. On the other hand, Marchese et al. (2018) critically evaluate the similarities and differences of resilience and sustainability that are relevant to environmental management applications. However, there is not enough empirical evidence to support the integration of these concepts.

The current study aims to identify practical strategies and policies that can promote SSR, RM, and sustainability to build a sustainable future. One of the major significance of this study is that it provides insights into the effectiveness of integrating SSR, RM, and sustainability. As discussed earlier, the combination of these concepts can offer several benefits to the country. It is useful for policymakers and stakeholders in addressing the current crisis and preparing for the prevention of future shocks. When reviewing the literature, it was identified that the current studies have not addressed combining SSR, RM, and sustainability. Therefore, this study contributes to filling the above-mentioned practical and empirical gaps by exploring the integration of SSR and RM in the Sri Lankan context. The mediating role of risk management (RM) in promoting sustainability and SSR during times of economic crisis was analyzed in this study. Further, the current study develops a model to explore the impact of SSR on sustainability and the mediating effect of RM (Marchese et al., 2018; Cradock-Henry, 2021). It can improve the social system. The developed model can be used to understand how these concepts can be integrated to address the challenges posed by economic crises. Hence, it can be argued that the

results of this study ensure the effectiveness of incorporating SSR and RM in promoting a sustainable trajectory for the nation. The findings of this study will provide a valuable contribution to the existing body of academic literature.

Literature Review

Social System Resilience (SSR)

A social system is an interconnected collection of structural and cultural components that function as a single entity. It combines people, groups, and institutions, which builds a society for collective effects (Mackenzie and Bititci, 2023). The social systems continuously change due to social, economic, and cultural influences. The studies done by McNamara et al., 2021; Hariram et al., 2023 highlighted that social systems promote community and individual well-being as well as address social and economic issues. Social trust can be considered as an important component of a social system which can promote subjective well-being and economic growth (Ifejika Speranza, Wiesmann and Rist, 2014).

Social systems should establish resilience to sustain external shocks (Béné, 2020). Not only economic crises but environmental crises, too, can be controlled by social system resilience (Otto *et al.*, 2020). SSR helps to achieve sustainable development goals (Ungar and Theron, 2020).

Resilience is an important requirement in managing crisis situations (Liu *et al.*, 2021; Sooriyaarachchi and Jayawardena, 2023). SSR is a combination of anthropology, political science, and sociology (Roque et al., 2021; Thomas et al., 2019).

The adaptation of social systems in different contexts can be identified with the help of SSR to ensure sustainability (Cinner, 2019; Otto *et al.*, 2020). The factors of diversity, redundancy, connectivity, adaptability, learning, and participation can determine the SSR (González-Quintero & Avila-Foucat, 2019; Pauley et al., 2019; Saja et al., 2021). Researchers reveal that SSR can improve the strength of the society through learning systems (Ifejika Speranza, Wiesmann and Rist, 2014; Folke *et al.*, 2016).

According to Schlüter et al., (2019), SSR provides a useful framework for analysing social system dynamics and identifying strategies to enhance resilience. However, researchers argue that it is contested and can lack clarity (Olsson *et al.*, 2015). On the other hand, it is overly deterministic and neglects the intervention of social actors (Otto *et al.*, 2020). Previous studies highlight that resilience interventions can produce unintended consequences that worsen inequalities and injustices (Meerow and Newell., 2019). Therefore, it is essential to integrate equity and justice considerations into SSR research and practice (Kaika, 2017).

Social Resilience Analysis Framework

The Social Resilience Analysis Framework (SRAF) is defined as a structured approach to evaluate and enhance the resistance (Saja et al., 2019). Resilience is a popular concept in psychology, sociology, and public health (Suslovic & Lett, 2024; Denckla et al., 2020). Recent research emphasizes the importance of social and cultural factors in the development and expression of resilience (Berkes and Ross, 2013). Ungar and Theron (2020)'s studies have shown that social support, community engagement, and cultural identity can enhance resilience among individuals and groups facing adversity (Killgore *et al.*, 2020; Ungar and Theron, 2020).

The main types of SSR are psychological resilience, emotional regulation, physical resilience, social support, adaptive coping strategies, flexibility and adaptability,

spiritual or existential resilience (Suslovic & Lett, 2024; Denckla et al., 2020; Killgore *et al.*, 2020). Coping strategies are important for developing abilities to handle stress and challenges. Flexibility and Adaptability are more focused on the individual's ability to adjust to changes and new situations. There are no unique definitions and measurement scales for the term of resilience (Olsson *et al.*, 2015; Marchese *et al.*, 2018). Resilience can have an individualistic and biomedical focus according to researchers. It should be broad enough to cover social, economic, and political contexts (Ungar and Theron, 2020). SSR includes both personal and social factors. Future studies should focus on the balance of these dimensions.

Risk Management

RM is the process that involves identifying, assessing, and mitigating potential risks of an organization or individual (Linton, Klassen and Jayaraman, 2007; Eslamian *et al.*, 2021). RM is important for organizations and individuals to avoid or minimize potential losses. Effective RM can improve decision-making and increase overall resilience in the face of uncertainty and change (Munasinghe, 2020). Effective RM can help organizations and individuals to increase overall resilience in even if the external environment changes (Munasinghe, 2020).

The current study is focused on resilience in an adverse economic condition of the country. RM helps countries to face risks by identifying, assessing, and mitigating potential risks. Risk management helps to reduce future losses (Eslamian *et al.*, 2021). The nature and security of a crisis can determine the effectiveness of RM during a crisis. Crisis situations can sometimes result in severe economic downturns which need more effective RM strategies (Settembre-Blundo et al., 2021). When a nation is prepared well for potential risks, they can minimize the losses. RM highlights the importance of the level of preparedness during a crisis situation. When the risk management process is applied in a crisis situation, it is clear that it involves conducting risk assessments, analyzing data, and monitoring trends to identify emerging risks.

Identification of risks in advance is important for organizations, and individuals can take proactive measures to mitigate or avoid those risks (Munasinghe, 2020). Organizations practice diversifying investments, reducing exposure to certain industries or assets, or implementing contingency plans as risk mitigation methods. RM helps to minimize losses in an economic crisis (Eslamian *et al.*, 2021).The main risk management strategies are risk transfer, risk reduction, or risk avoidance. As an example (Nocco & Stulz, 2022). reveal that organizations can transfer some of the risks to insurance providers or implement cost-cutting measures to reduce the impact of a crisis. The researchers argue that the effectiveness of RM during an economic crisis can be limited due to the severity or speed of the crisis (Walker *et al.*, 2002; Bocken *et al.*, 2016). There should be readily available data to make the RM decisions effectively (Fry, 2018).

According to the literature, resilience and RM are closely related concepts (Bocchini *et al.*, 2014; Marchese *et al.*, 2018). RM is highly important for building a resilient environment. In the context of RM, resilience refers to an organization’s or individual's ability to effectively respond to and recover from potential risks and crises. According to (Marchese *et al.*, 2018), resilience can be built through a range of RM strategies. Risk reduction can be achieved through

diversifying investments, reducing exposure to certain industries or assets, or implementing contingency plans. This helps to build resilience. On the other hand, the study by Holling (2001); Pine (2012) reveals that resilience can also be built through effective communication, collaboration, and stakeholder engagement. Stakeholders in a system are important in building a resilient environment. Researchers argue that countries or organizations should build strong relationships with key stakeholders, individuals, and organizations to successfully face to a crisis situation. There are environmental risks which can negatively impact on a country’s economy and social well-being. On the other hand, social risks such as human rights abuses can impact social and economic well-being. The studies Dahlmann & Roehrich, (2019); Dhanda et al., (2022); McLaren et al. (2023) highlighted that reducing greenhouse gas emissions and implementing stakeholder engagement strategies and supply chain management strategies can identify and mitigate these risks.

The current economic crisis in Sri Lanka has resulted in a decline in tourism and rising debt levels (Munasinghe, 2020). It is important to establish a stable economy to benefit all the sectors in the country and society. effective RM is crucial to mitigate potential losses. The authorities must focus on rebuilding the economic and social well-being of the country. One of the key risks in the current Sri Lankan economic crisis is currency fluctuations (Murtza *et al.*, 2022). The RM strategy must be based on a thorough analysis of the current status of the country. RM strategy should incorporate various models and tools to manage these risks. The Sri Lankan government needs to identify the key risks facing the country and develop a comprehensive RM strategy. Researchers have introduced enterprise RM, value-at-risk, Monte Carlo simulation, crisis management frameworks, etc., as tools for RM (Bocchini *et al.*, 2014; Lounis and McAllister, 2016; Munasinghe, 2020). The general population of the country should have an understanding about the national RM framework. Therefore, the government of Sri Lanka should build attitudes and perceptions towards the RM framework to face future risks successfully (Koundouri *et al.*, 2014).

Sustainability

In the context of economic and environmental crises, community attention to the sustainability concept has increased significantly. According to Köhler *et al.*, (2019), the essentiality of the usage of sustainability practices is identified as a more crucial phenomenon during the current economic crisis looming over the island of Sri Lanka. Sustainability consists of three main constructs, economic, social, and environmental, and directs long-term social well-being (Rai et al., 2021). Different environmental, economic, and social challenges have made a critical impact on addressing sustainability while gaining increasing importance over the years. As an example, the Intergovernmental Panel on Climate Change (IPCC) has announced via its latest report the requirement to reduce greenhouse gas emissions to mitigate the impacts of climate change by ensuring sustainability practices (Owusu and Asumadu-Sarkodie, 2016). Meanwhile, Kleindorfer, P., Singhal (2005) define the concept of sustainability is based on the idea of "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs". In recent studies, sustainability is evaluated by integrating various frameworks, such as the Triple Bottom Line, which is established on the three constructs called economic, social, and environmental (Wolch et al., 2014). The concept aims to optimize ecological limitations more just and equitable manner.

Sustainable goals can be easily achieved through one of its key factors, SSR. According to the literature, resilient communities achieve greater sustainability outcomes during crises due to their adaptive capabilities. For example, according to (Burton, 2015) community resilience dimension, social support networks played a vital role during Hurricane Katrina. Meanwhile, community cohesion is identified as another factor that promotes SSR in the aftermath of disasters (Eslamian *et al.*, 2021). The study done by Xu et al., (2015) reveals the positively correlated nature of SSR and sustainability that is reinforced by the community's collective action and resource-sharing behaviour. Thus, evaluating the causal relationship between SSR on sustainability has become a critical activity that aligns the social systems to ensure long-term sustainable outcomes. Meanwhile, another study by Marchese *et al.*, (2018) provides insights to optimize the policies and strategies relevant to strengthening SSR to reach sustainable goals on a balanced platform of communities and the environment. On the other hand, RM is identified as another crucial construct that affects sustainability (Linton, Klassen and Jayaraman, 2007; Welsh, 2014; Marchese *et al.*, 2018). Mitigating the negative effects of disasters or crises through effective RM strategies is essential to enriching sustainability outcomes.

Key SSR characteristics contribute directly to sustainability outcomes (Zeng et al., 2022). Adaptability allows communities to adjust to economic shocks, which ensures long-term stability (Rai et al., 2021). Similarly, learning, another factor under SSR, fosters continuous improvement in crisis management which leads to better resource allocation and policy decisions. Participation under SSR strengthens collective action, which can help promote sustainable initiatives through inclusive decision-making (Mahajan et al., 2022). These factors enhance a system's ability to withstand disruptions while fostering sustainable development. Thus, SSR significantly impacts sustainability, supporting the hypothesis that resilient social systems drive long-term sustainability goals;

H1: There is a significant impact of Social System Resilience on Sustainability.

RM strategies help to improve the quality of social and ecological systems according to previous studies. Integrated RM and sustainability planning contribute to addressing the potential threats to sustainability by prior identification (Marchese *et al.*, 2018). According to a study done by Eslamian *et al.*, (2021), RM helps to achieve sustainable development by mitigating the negative influences of disasters. These findings demonstrate the importance of the positive impact of RM on sustainability. While existing studies recognize the individual contributions of SSR and RM to sustainability, limited empirical research explicitly examines RM as a mediator in this relationship. This study addresses this gap by empirically demonstrating that RM acts as a bridging mechanism, translating SSR into sustainable outcomes. The mediator effect of RM on the connection between the independent and dependent variables is the focus of hypothesis H2, which follows.

H2: Risk Management significantly mediates the impact of Social System Resilience on Sustainability

Sustainability is focusing on addressing social, economic, and environmental issues in a country (Bocken *et al.*, 2016). One of the major advantages of sustainability is to enhance the company's reputation and competitiveness according to Hart, Stuart L., Milstein (2003) and Kleindorfer, P., Singhal, (2005). Not only that, sustainability is addressing the social issues, as identified earlier, and therefore, it is important for the survival of humanity (Jones *et al.*, 2022). Countries should deviate from current traditional economic paradigms when establishing sustainable development (Korhonen, Honkasalo and Seppälä, 2018). Equity and justice are also important when ensuring sustainability in a country (Köhler *et al.*, 2019)

The co-designed resilience hub in Kirpalani, (2024) exemplifies how modular, technology-driven solutions enhance disaster preparedness while addressing social vulnerabilities. Similarly, Amegavi et al. (2025) highlight

the challenges of advancing social equity in urban resilience planning, stressing the importance of inclusive participation and recognition of marginalized voices. Amorim-Maia et al. (2022) further advance this discourse by proposing intersectional climate justice as a framework for addressing interconnected social-environmental inequities in adaptation planning. Aligning RM with such emerging perspectives enhances sustainability by ensuring holistic, inclusive, and technology-supported climate adaptation strategies.

In the context of the economic crisis in Sri Lanka, understanding the sustainability of social systems is crucial for ensuring long-term resilience and development. Therefore, this research makes a significant scholarly contribution by examining the relationship between SSR and sustainability, providing insights that can inform policies and strategies for sustainable development in Sri Lanka. Based on the above discussed literature, following conceptual framework was developed.

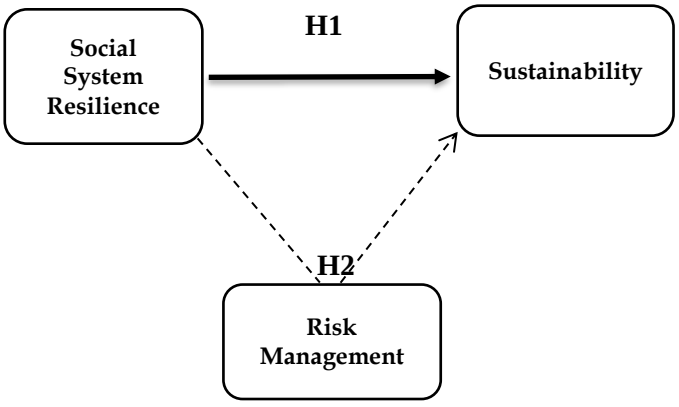

Figure 01: Conceptual Framework

Materials and Methods

The findings of this study are based on the theoretical relationships found in previous studies, which were used to develop hypotheses. General to specific literature was discussed in this study, and therefore, the deductive approach was used. The study maintained a high level of objectivity and scientific method of reasoning was used. This aligned with positivism philosophy (Mkansi and Acheampong, 2012). The survey method was the main research strategy in this study. This survey was designed based on a 5-point Likert scale (1= strongly disagree, 5 = strongly agree).

Population and Sample

The population considered in this study is the adult general public living in Sri Lanka. Effective 372 responses have been received from the distributed 385 questionnaires, which were collected in person. Given practical constraints, this sample size is sufficient for identifying trends and patterns across different socioeconomic groups while maintaining a reasonable confidence level. The choice of the Rathnapura and Colombo districts (Population 3,619,000) for this research was made employing a purposeful sampling approach driven by several factors. These districts have distinct economic characteristics. This is statistically robust and provides a strong basis for analysis. Further prior research in resilience studies has demonstrated that sample sizes above 300 can offer reliable insights (Kumar & Anbanandam, 2020)

Income level of the population is a great determinant in measuring the economic stability of a country. Colombo district mostly has income earning population. On the other hand, population in Ratnapura district is in the lower income level category compared to Colombo District. These two districts have different social environments. Although other regions might have unique characteristics, the inclusion of these two districts captures the key urban-rural divide and economic stratification that are crucial for understanding social system resilience in times of crisis. Beyond economic differences, the resilience strategies in these districts are shaped by social structures, cultural norms, and community networks.

The current study considered these two districts in data collection to analyse how different socioeconomic conditions influence social system resilience during economic crises. The consideration of the population living in a lower economic level area helped the researcher to understand how it acts to an economic crisis. The Colombo District has a large urban population, whereas Ratnapura has a higher rural population. These settings can provide important insights on how different settings influence resilience strategies. The use of data from the Colombo and Ratnapura districts provides valuable insights into how both economic and cultural contexts shape responses to crises, reinforcing the relevance of selecting these two districts. These differences can represent the cultural and economic differences in Sri Lanka. Hence, purposive sampling is the best strategy to cover all the demographic and economic conditions in the country. Generalisation of the study outcomes to the entire country is important. The use of purposive sampling helped the researchers to understand the impact of diverse socioeconomic factors on social system resilience during an economic crisis.

Operationalization

Table 01: Operationalization

Variable	*Indicator*	*References*
Social System Resilience	1. Psychological Resilience	(Killgore *et al.*, 2020; Ungar and

	2. Emotional Regulation 3. Physical Resilience 4. Social Support 5. Adaptive Coping Strategies 6. Flexibility and Adaptability 7. Spiritual or Existential Resilience	Theron, 2020)
Risk Management	1. Identifying risks 2. Assessing risks 3. Mitigating risks 4. Monitoring risks	(Lounis and McAllister, 2016; Munasinghe, 2020; Eslamian *et al.*, 2021)
Sustainability	1. Economic Sustainability 2. Environmental Sustainability 3. Social Sustainability	(Köhler *et al.*, 2019)

This selection enables a comprehensive review of the research framework's essence. Each indicator listed under a variable represents the particular concept or construct that is relevant to the study. Meanwhile, these indicators provide a basis for defining, observing, and measuring the relevant variable. Based on the indicators derived from the literature review, a set of 5-point Likert scale questions was developed for the questionnaire. Multiple questions, SSR- 21 | RM – 13 | Sustainability – 15, were created for each indicator to ensure comprehensive coverage of the concept or the variable being measured. Importantly, the selection of indicators and questions was carried out with a specific focus on the economic crisis that is anticipated to occur in Sri Lanka during 2022/23. As identified in the literature, resilience is important to face challenges successfully. The use of multiple factors as indicators for each variable ensures that the model can be used to face challenges that can arise in Sri Lanka in the future. A pilot survey was conducted using a smaller-scale survey. A smaller number of respondents were used in this survey to identify the reliability of the model and identify any potential issues or improvements needed. The pilot survey helped to ensure the effectiveness and validity of the survey design before proceeding with the main data collection phase.

Results

Reliability And Validity

Table 02: Reliability Statistics And Validity

Reliability Statistics		
	Cronbach's Alpha	N of Items
Social System Resilience	.940	21
Risk Management	.812	13
Sustainability	.902	15
Validity		
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy.	> .5	.688
Bartlett's Test of Sphericity	Approx. Chi-Square	345.482
	df	3
	Sig. < .05	.000
Average Variance Explained (AVE)	> .5	70.755

The reliability statistics, Cronbach's Alpha coefficients, shed light on the internal consistency and reliability of the measurement scales used in the fields of SSR, RM, and Sustainability. SSR, RM, and Sustainability demonstrate impressive Cronbach's Alpha coefficients of 0.940, 0.812, and 0.902, indicating strong internal consistency for its 21-item, 13-item, and 15-item scales, respectively.

The KMO value of 0.688 suggests that the sample used in the analysis is adequate for factor analysis, indicating that the variables are likely to have a strong relationship with each other. Bartlett's Test of Sphericity assesses whether the correlation matrix among variables is significantly different from an identity matrix. The test statistic of approximately 345.482, with 3 degrees of freedom, implies that there is a significant relationship among the variables. The p-value of .000 further supports this, suggesting that the correlation matrix is not an identity matrix. The AVE value is 70.755, which exceeds the recommended threshold of 0.5. A high AVE indicates good convergent validity, as it demonstrates that it is acceptable. This supports the accuracy of the factor analysis results.

Correlation Analysis

Table 03: Correlation

Correlation		
		Sustainability
Social System Resilience	Pearson Correlation	.485**
	Sig. (2-tailed)	.000

	N	372
Risk Management	Pearson Correlation	.637**
	Sig. (2-tailed)	.000
	N	372
Sustainability	Pearson Correlation	1
	Sig. (2-tailed)	
	N	372

According to the analysis both variables, SSR and RM, represent moderately positive correlations, 0.485 and 0.637, respectively, with Sustainability. Meanwhile, as the correlations between these variables are significant ($p < 0.001$) the authors can conclude that the selected variables are mutually connected in the given context. This indicate that while both factors contribute to sustainability efforts, RM has a relatively stronger influence. This suggests that enhancing risk management practices may have a more pronounced impact on sustainability outcomes, while SSR also plays a significant but slightly lesser role in fostering sustainable development.

Table 04: Mediator Analysis – Total / Direct Effect

Mediator Analysis						
		Standardized Beta	Std. Dev	T Statistics	95 % LLCI	95 % ULCI
Total Effect	SSR -> Sustainability	.4403	.0413	10.6749	.3592	.5214
Direct Effect	SSR -> Sustainability	.1709	.0430	3.9745	.0863	.2554

The mediator analysis examines the impact of SSR on Sustainability with the total effect and direct effect considering the mediating effect of the other factor called RM. The findings indicate that there is a total effect of SSR on Sustainability, with a standardized beta coefficient of 0.4403. This suggests a significant positive impact, indicating that as SSR improves with a proper RM approach, there is a corresponding improvement in the Sustainability construct. Additionally, the direct effect of SSR on Sustainability is found to be 0.1709, indicating that SSR has a significant direct impact on Sustainability as well. Meanwhile, both impacts, total and direct, have been measured with the bootstrap 95% consisting of the lower level and its upper level; 0.3592 - 0.5214 and 0.0863 - 0.2554 respectively. This highlights that effective RM amplifies the positive impact of social system resilience on sustainable outcomes, making it a crucial factor in policy and decision-making.

Table 05: Mediator Analysis – Indirect Effects

Mediator Analysis					
		Stand. Beta	Std	95 % LLCI	95 % ULCI
Indirect Effect	SSR -> RM -> Sustainability	.2694	.0376	.1985	.3470
Partially standardized indirect effect	SSR -> RM -> Sustainability	.4660	.0589	.3554	.5866
Completely standardized indirect effect	SSR -> RM -> Sustainability	.2969	.0380	.2232	.3725

According to the above table, the mediator analysis examines the indirect effects of SSR on Sustainability through the mediating variable of RM. The findings reveal that there is a significant indirect effect of SSR on Sustainability through the pathway of RM. The indirect effect is shown by the standardized beta coefficient of .2694 and this indicates that the impact of SSR on Sustainability is mediated by RM. Meanwhile, the partially standardized indirect effect is .4660, and this indicates a stronger mediation effect. On the other hand, the completely standardized indirect effect is .2969, and this figure strongly explains that RM plays a significant role in mediating the impact of SSR on Sustainability. Further, all these three indirect impacts are significantly mediated by the variable; RM as the lower limits and upper limits ranges don't cross the value zero. The results prove that both alternative hypotheses are accepted.

Discussion

The present study aimed to investigate the relationships among SSR, RM, and Sustainability in the context of the economic crisis experienced in Sri Lanka during 2022/23. The current study identified different perceptions in the social system in Sri Lanka. It is important for policymakers and stakeholders seeking to promote sustainable practices. According to the demographic analysis, it is clear that there is a higher representation of female respondents. Therefore, the gender is representing both male and female participants, which is important for sustainable development (Murray, Skene and Haynes, 2017). The current study used different age groups for the analysis. Therefore, it can provide a deep understanding of the perceptions in different generations. Descriptive statistics indicated moderate levels of agreement or positive perceptions among respondents regarding various aspects of SSR, RM, and Sustainability. The

findings of this study highlighted the different perceptions of SSR, RM and sustainability in Sri Lanka. These findings aligned with the findings of previous researchers (Walker *et al.*, 2002; Brown, 2014; Ifejika Speranza, Wiesmann and Rist, 2014; Welsh, 2014; Marchese *et al.*, 2018; Ungar and Theron, 2020; Sharifi and Salehi, 2022). There are several challenges faced during the economic crisis in Sri Lanka.

According to the multiple regression analysis, SSR and RM significantly contribute to the prediction of Sustainability. The coefficients are positive, which indicates that when the SSR and RM are at a higher level, the sustainability of the country increases. SSR independently enhances sustainability by fostering economic and social stability through improved adaptability, resource efficiency, and community cohesion during crises. Similarly, RM strengthens sustainability by mitigating uncertainties and ensuring proactive strategies that safeguard long-term development and resilience. The findings of Welsh, (2014); Marchese *et al.*, (2018) and Cradock-Henry, (2021) too highlight that it is important to establish social system resilience and risk management for sustainable practices. According to the mediator analysis, RM partially mediates the relationship between SSR and Sustainability. This suggests that while SSR directly enhances sustainability, effective RM further strengthens this relationship by providing structured approaches to mitigate uncertainties and enhance adaptive capacity. This aligns with resilience and risk management literature, which emphasizes that proactive risk mitigation strategies amplify the benefits of social system resilience in achieving sustainable outcomes (Murray, Skene and Haynes, 2017). The studies have shown that RM can act as a mediator between SSR and sustainability. Organizations can adapt resilient measures to manage risks and achieve sustainable performance. Integrating SSR and risk management is highly important in establishing sustainability.

According to Burton, (2015) SSR helps to achieve sustainability through a greater ability to resist in challenges in the environment. Eslamian et al., (2021) highlighted that RM can prepare societies to be stronger and more resilient. Further, this demonstrates that they countries can sustain themselves economically and socially. Therefore, these findings prove a positive impact of RM and SSR on sustainability. The current study outcomes align with these findings. When considering organizational perspectives, countries can implement strategies which incorporate RM and SSR into their sustainability frameworks. Research in other nations (e.g., Marchese et al., 2018) highlights that strong institutional frameworks and proactive risk management contribute to enhanced resilience and sustainability. Similarly, studies in other economies (e.g., Ifejika Speranza et al., 2014) emphasize the role of community-driven resilience strategies. Sri Lanka's findings align with these patterns, demonstrating that both structured policies and grassroots initiatives are crucial. Understanding these global parallels can help policymakers tailor strategies that integrate international best practices with local socioeconomic contexts.

Conclusion

The main objective of this study was to analyse the relationship among SSR, RM, and sustainability. A new framework was built to analyse the integration among these factors. The findings revealed that it is important to combine SSR and RM to establish sustainability. The literature also supported the positive relationship among SSR, RM, and sustainability. The outcomes of this study are important for Policymakers, organisations, and stakeholders to better handle economic crises.

In the previous sections of this study, it was revealed that there is a significant theoretical and knowledge gap in a framework that combines SSR, RM, and sustainability in the Sri Lankan context. Therefore, the findings of this study can help in filling these gaps. Researchers were able to build a conceptual framework to analyse the relationships among SSR, RM and sustainability. The data analysis results indicate that there is a lower level of sustainability in Sri Lanka. People in Sri Lanka believe that the current society has a moderate level of SSR. On the other hand, the current risk management strategies in Sri Lanka is averagely satisfactory according to the respondents. Therefore, the average levels of RM and SSR have positively contributed to a lower level of sustainability of the country.

The main conclusion of this study is that when the SSR and RM are collaboratively practiced, countries can achieve sustainability. It can be recommended that policymakers develop targeted policies and initiatives to enhance social system resilience and implement effective risk management strategies. The main finding of this study is that RM and SSR collaboratively build a sustained country or an organization. RM can be used as a mediator for the use of SSR to promote sustainability. Organizations and communities can help to create a more sustainable future by promoting SSR and properly managing risks. The policymakers in the country can develop their strategies by incorporating SSR and RM for a sustained country that can face potential challenging situations successfully. Policymakers can strengthen community resilience by funding disaster preparedness programs, enhancing social safety nets, and supporting community-based resilience initiatives. Additionally, integrating risk management education into national curricula and professional training programs can improve organizational and societal preparedness. Establishing public-private partnerships can further enhance risk mitigation efforts by leveraging resources and expertise from multiple sectors. Organizations can incorporate SSR

and RM into corporate sustainability frameworks, ensuring long-term resilience.

One of the major limitations of this study is that it has focused on particular Colombo and Ratnapura districts in Sri Lanka. This limitation has restricted the findings' applicability to a larger population. A cross-sectional design and the use of self-reported data can hinder the reliability of the collected data. Future researchers can include a more varied sample from various geographic situations for a broader perspective of resilience and sustainability. A longitudinal study can be carried out to analyze long-term variations in resilience, RM, and sustainability in Sri Lanka.

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