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KEYWORDS	ABSTRACT
Strategic Leadership, Security Management, Sustainable Performance	<p>This study examines the impact of strategic leadership, security management, and risk mitigation on sustainable performance in defense organizations. The purpose is to explore how these factors contribute to achieving long-term sustainability in organizations that face high levels of operational complexity and risk. A quantitative research design was employed, utilizing a survey questionnaire to collect data from a sample of defense sector professionals in Pakistan. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the data and test the hypothesized relationships. The findings reveal that strategic leadership, security management, and risk mitigation significantly influence sustainable performance. The results underscore the importance of a comprehensive approach to management in defense organizations, integrating leadership, security, and risk management practices to achieve sustainable outcomes. The study concludes with recommendations for defense organizations to prioritize leadership development, invest in advanced security systems, and embed risk management into decision-making processes. These findings provide valuable insights for organizations seeking to improve their sustainable performance in highly dynamic and risky environments.</p>
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1.0 Introduction

It is of vital importance for all sectors of organizations, including defense organizations, to consider the sustainable performance concept. In a world which is becoming increasingly globalized and uncertain, defense organizations are focusing their operational requirement needs into the immediate, but must ensure longer term sustainability in order to remain effective (D'Amour & Njenga, 2024). National security, to be defended by the defense organizations, requires balancing readiness in the short term with maintaining strategic capabilities over time. In this regard, strategic leadership, security management and risk mitigation has to play its most critical role (Ige et al., 2024). Leadership, security, and risk management are among these three important aspects that facilitate sustained performance in defense organizations but are usually studied separately. A study of these factors, their interconnection and their overall effect on sustainable performance is yet to be undertaken. This study aims at understanding how these elements relate and come together to support defense organization's sustainable performance (Porter, 2024).

Strategic leadership means the ability of organizational leaders to determine the direction of the organization, manage the resources, and ensure that the goals of the organization are in accordance with both the short time needs and longtime objectives. This entails military decisions in defense organizations that do not only ensure operational effectiveness now, but also sustainability of the organization in the future. In the case of defense organizations, the importance of the leadership role is especially great because of the complexity of their operations, high stakes involved and necessity to balance the national security objectives and the organizational sustainability (Chowdhury, 2024). Those in the leadership roles of this sector need to steer the entity of this sector through the currents of both geopolitical uncertainty and technological advancements, and at the same time, ensure the long run resilience and adaptability of their operation. The transformational leadership and transactional leadership are leadership theories that are useful in evaluating how leadership influences company's performance. Visionary transformational leaders are regarded as leaders who inspire their teams to go beyond the bar, which is essential for innovation and sustainability in defense organizations (Cenek et al., 2024).

Security management in defense organisations is the processes and policies of protecting personnel, information and the assets from internal and external threats. Security management is effective so that defense organizations can operate even in the face of many risks, including cyber-attack and physical threat. In the defense sector more than most, the stakes are high, and the importance of security management to its sustainable performance is fundamental because the role of security management is usually overlooked (Mızrak, 2023). Security management therefore goes beyond simply reacting to threat or implementing specific protective schemes designed to deal with (anticipated) threats e.g. the implementation of very strong cyber security

protocols to guard against cyber theft, protect classified information and secure infrastructure among others. On the other hand, security management calls for continuous adjustment to the new threats and the process correlates well with the sustainability principles (Sirine, 2024). With companies looking to survive over the long term, remaining protected from disruptions is a critical judge of their success. And this is most true in defense organizations where a compromised security system can lead to enormous consequences even to the organization and a country's national security (Mizrak, 2023).

Like risk mitigation, it is critical to enabling defense organizations to be able to achieve sustainable performance. Risk mitigation is about identifying, assessing and managing possible risks that can prevent an organization from doing its operations or achieving its goals. Risks in defense organizations can be financial risks, operational risks, technological risks and geopolitical risks. The need to manage and mitigate these risks exists so that defense organizations can continue to operate while reducing the disruptions (Korkmaz, 2024). Risk mitigation strategies that are effective consist of risk identification, risk analysis, and the execution of strategies that will either reduce or eliminate risks. It is clear that the link is between risk mitigation and sustainable performance since organizations that are better equipped to manage their risks are more likely to achieve long term success. Given the rapid and continuous process of qualitative changes in the environment of social and economic orientation, including the sphere of the defense, where the ability to respond to threats and uncertainty is considered to be one of the key elements that provide absorption of the defense systems into the changing conditions with the aim of improving the operational readiness and long term viability, the relevance of transitioning to a proactive model of scenario development becomes extremely obvious (Martinho & Reis, 2022).

The focus of the present study lies in solving the research problem related to the poor comprehension of the synergy between strategic leadership, security management, and risk mitigation for resulting in the sustainable performance for the defense organization. It is particularly concerning that the stake is high, since defense operations are characterized by high stakes, and the failure of leadership, in security breaches, or risk management may be catastrophic. Leadership and security management have been well explored fields of research, but research on how these two interact and impact sustainable performance in high risk settings such as defense organizations is less developed. This study attempts to obtain these insights by looking into the relationships between these variables and to give insights to defense organizations on how they can enhance their resilience and sustainability to challenges in evolution.

This study is important because it brings practical implications for defense organizations, policymakers and scholars. Unlike most other sectors, defense organizations are particularly subjected to high risk, uncertainty and complexity. This study could provide the

findings to exhort the establishment of leadership training programs, security protocols, and risk management strategies with respect to sustainability objectives. For instance, knowing the role of strategic leadership in the development of sustainability culture, defense organizations can make decisions for leadership development programs emphasizing long term thinking and innovation. Likewise, understanding the variability of security management and its interrelation to sustainable performance could enable the creation of such secure protocols that mitigate the punishment of immediate threats and support the organization's long run resilience. Additionally, the results of this study may find relevance for organizations in other sectors that work in high risk environments. Defense organizations, which have a well-developed understanding of the ability to manage risk, security, and leadership, could provide lessons for other industries (e.g., aerospace, energy, or healthcare) that are also critical to sustainable performance.

Finally, this study is another important aspect of the significance in that it provides an addition to the organizational sustainability literature. Although much research has been conducted on sustainability from the point of view of environmental concerns, the research here extends the concept of sustainability to the realm of defense organizations where operational readiness, use of resources, and personnel wellbeing are key issues. The purpose therefore is to bridge this gap by offering a better understanding of sustainable performance relative to the challenges that defense organizations are facing. Based on understanding of these interactions between strategic leadership, security management, and risk mitigation, this study presents the framework as how the defense organization will be able to achieve the long term success in a complex and uncertain global environment

This study also has significant theoretical contributions. Through the integration of Resource Based View, dynamic capabilities theory, and leadership theories, this study presents a framework that allows the understanding of factors that lead to sustainable performance of a defense organization. According to Resource-Based View, organizations that hold valuable, rare and inimitable resources are more probable of lasting success. In defense organizations these resources include of course the physical assets but also the intangible assets of leadership and security management. This study provides a more sophisticated understanding of how the mechanisms by which defense organizations can improve their sustainable performance operate through examination of how these resources are managed and deployed.

This study concludes with an attempt to bridge a critical gap in the literature that looks into strategic leadership, security management, and risk mitigation relationships and their synergistic effects on sustainable performance in defense organizations. Our goal through this research is to provide theoretical and practical insights to the defense organizations in how to more effectively navigate the more difficult, and unpredictable global environment we find ourselves in today. The results of this study are potentially useful for the development of

leadership, security, and risk management strategies consistent with the objectives of sustainability in other high-risk sectors as well as in defense organizations. This research thus contributes to the growing body of sustainability literature in an organizational context and specifically to the defense organization involved in the modern world.

2.0 Literature Review

Using the theoretical frameworks of strategic leadership, security management, and risk mitigation, it is possible to understand the influence of this phenomenon in the organizational performance and sustainability. According to the Resource Based View (RBV), sustained competitive advantage is obtained by organizations when they successfully manage unique (rare), valuable and inimitable resources (Barney, 1991). In defense organizations, these resources encompass physical assets, technological capabilities, human capital, and intangible assets like leadership, risk management frameworks, and robust security protocols. Allocating and managing these resources in the right ways are critical from strategic leadership perspective to attain long term success. Subsequently, dynamic capabilities theory (Tierce, Pisano, & Sheen, 1997) underlines that an organization needs to keep on being genuinely adaptable in adjusting, reconfiguring and updating its resources to manage changing environmental challenges. These theoretical frameworks are highly relevant for defense organizations because they operate in volatile, uncertain, complex, and ambiguous (VUCA) environment and the integration of leadership, security, and risk management is crucial for successful performance.

It is widely covered in the literature about the concept of strategic leadership. In the domain of defense, this indicates that leadership theories such as transformational leadership and transactional leadership have been utilized to examine the ways in which leader's impact organizational outcomes in different sectors. In particular, transformational leadership is the most appropriate kind of leadership for the promotion of innovation and long term sustainability as it stresses on vision, inspiration and change (Bass & Avoid, 1994). As is common in defense organizations, leaders must lead in the midst of complex geopolitical environments and thereby need to balance transactional leadership to maintain certain immediate operational readiness and transformational leadership to develop long term adaptability. It is shown through the studies that strategic leadership has a positive effect on organizational resilience, which is a key factor of sustainable performance (Hit et al., 2016). However, strategic leadership extends to directing the organization throughout the crises, and the alignment of security management and risk mitigation strategies with long term sustainability objectives, on a defense ground.

Another key piece in the defense organization's ability to sustain positive performance is security management. Security management frameworks place premium on the protection of information, personnel, infrastructure and some other critical assets from both internal and external threats. Security management, as it relates to organizational sustainability, helps an organization maintain its resilience, the ability to continue to operate in the case of a disruption.

For high stakes environments such as defense, failure of security systems would have catastrophic outcomes, and thus security plays a critical role in maintaining operational continuity (Warrenton & Williston, 2009). According to Smith (2017), robust security protocols make organizations more adaptable as they diminish vulnerabilities and make them ready for any future threats. Also, cyber security measures, physical security protocols, and information protection frameworks have been more and more connected to long term company success (Pledger, 2012). In defense organizations in particular, an organization's security management is particularly important as defense organizations must constantly keep pace with an ever changing threat landscape.

Likewise, risk mitigation is equally important in achieving sustainable performance in defense organizations. Risk mitigation involves analyzing and addressing the threats of loss before an audit. Risk management theories indicate that organizations that serve intentional risks in advance are better placed to respond to challenges and uncertainties (Hopkins, 2017). The defense sector risks are geopolitical instability, risks of technological disruptions, cyber attacks, financial constraints. It has been found that the combination of effective risk management strategies helps defense organizations remain resilient through preparing themselves for future challenges (Kaplan & Mikes, 2012). In addition, risk mitigation strategies can be integrated into the whole organizational system, for example, leadership and the security management, which strengthen the ability of the organization to sustain its long term operational success (Hill son & Murray Webster, 2007). The risk mitigation therefore goes beyond minimizing immediately present threats to work towards creating an organizational culture that doesn't only recognize risk preparedness, but also flexibility and constant improvement.

Recent empirical studies have also supported the significance of strategic leadership, security management and risk mitigation to raising sustainable performance particularly in the context of defense sector. Effective strategic leadership is linked with higher levels of innovation, adaptability, which are key drivers of sustainable performance; several studies have shown that (Avoid & Bass, 2004). For example, in studying the defense organizations, Martin et al. (2020) reported that transformational style of leadership fostered innovation and adaptability in the face of new security challenges as a means to enhance the sustainability of the organization. Similarly, empirical findings show that the organizations with well-established security management protocols get fewer disruptions and recover faster from crisis (Choi et al., 2016). For instance, studies in the defense sector emphasize the importance of proactive security management in decreasing the effect of cyber-attacks on the organizational performance (Garter & Lindsay, 2019). Moreover, it is well documented that adoption of risk mitigation practices in high risk industries, such as defense, leads to lower costs, decreased operational disruptions and better overall operational performance (Jain & Dubai, 2017).

The view that proactive risk mitigation leads to long term performance in the defense organizations also finds support in the empirical literature on risk management within defense organizations. For instance, Lesson and Spicer (2012) conducted a study where defense organizations which included risk management into decision making were able to anticipate upcoming challenges and adjust their strategies to suit those challenges. Similar to what other high risk industries, i.e. aviation and energy, have found, the ability to manage risks and mitigate the effects of risks, supports sustainable performance (Asperse, 2017). It is also extensively documented in the literature that leadership plays a role in promoting a culture of risk management, where the leaders not only guarantee compliance to risk protocols but also foster innovation in risk mitigation strategies (Van Der Vegt et al., 2015).

However, despite the empirical evidence, the existing literature still has a number of gaps that are yet to be explored. There is one notable gap in the literature because more studies that look at the interdependencies between strategic leadership, security management and risk mitigation as a corporate performance integrated framework for defense organizations could not be traced out. Although each of these factors has been studied individually, there is little evidence exploring the relationships among these factors and how they interact to influence one another for development of a holistic approach to sustainability. Moreover, most of the existing research has been conducted in the context of single dimensions of security management, such as cyber security, without examining how the other forms of security (e.g., physical security, personnel security) affect sustainable performance. Additionally, more research is needed to study the long-term effects of leadership and security strategy on sustainability of an organization, especially for defense organizations.

This study's research problem is that the understanding of how the combined effect of strategic leadership, security management and risk mitigation helps in creating sustainable performance in defense organizations is limited. Existing studies provide a great understanding of the individual effect of those factors but very little research has been done to understand how they are at work in relation to one another. Due to the complex and high-risk operating environment in which defense organizations work, leadership decisions, security protocols, and risk avoidance strategies are intertwined to guarantee long term sustainability, and this gap is very large. Through addressing this research problem, this study aims to contribute to the overall performance of defense organizations in a sustainable way by enhancing the understanding of factors that promote sustainable performance, and also provide practical recommendations for developing leadership, security and risk management practices in this sector.

In that regard, this study is significant in that it can serve as a guide in both case academic research and practical applications in the defense sector. From an academic point of view, this paper contributes to the field of organizational sustainability research with a holistic framework that combines strategy, leadership and security management as well as risk management. This

framework can be applied not only in the defense organization but also in other high risk industries where sustainability is relevant. In addition, the relationships among these factors in this research contribute to clarifying how defense organizations might enhance their resilience and adaptability and theoretical and practical contributions to the enterprise resilience domain at large and the defense industry in particular, in an increasingly uncertain global environment.

This study's findings should be of interest to both practitioners and theoreticians in terms of implications for the design and development of leadership training programs, security management protocols and risk mitigation strategies aimed at realizing the goals of sustainability. For instance, leadership development programs in defense organization may promote the ideas of long-term thinking, innovation, and adaptability. In this respect, learning more about the interrelationship between security management and sustainable performance would allow developing more holistic security protocols to protect, not only current, but also the future threats. Ultimately, the results of this study can be utilized to foster a risk management culture within defense organizations, whereby leaders and employees alike are prompted to consider risk issues in advance and to devise creative ways of managing risks.

More specifically, the theoretical and the empirical literature supports the view that strategic leadership, security management and risk mitigation are important aspects of sustainability of defense organizations. Although there is significant research on each of these types of factors, the need for more research that addresses the combined effects and indeed how they interact with one another, to form a holistic approach to sustainability exists. The gap addressed in this study should yield valuable insights into factors that lead to long term organizational success in defense organizations and practical recommendations to improve leadership, security and risk management practices in this sector.

3.0 Methodology

The research design used was quantitative research design that is more appropriate for studies whose aim is to establish relationships among variables using statistical analysis. It was possible to collect numerical data to test the earlier formulated hypotheses using this approach. The philosophy of research adopted for the study was positivism, whereby reality can be measured and measured through objective data and observable facts. For this research, positivism is appropriate as it is in line with the objective of finding causal relationship between strategic leadership, security management, and risk mitigation and sustainable performance. The study had a positivist approach in the sense that it tried to come up with reliable and generalizable findings based on empirical evidence.

This research is targeted upon the defense organizations in Pakistan. Since the defense organizations are very sensitive and access to the relevant respondents, a well-defined sampling strategy was necessary. In this, purposive sampling technique was applied in selecting those individuals who were actively involved in the process of leadership roles, security management

or risk mitigation in these organizations. Given this, an important reason why we went for this non-probability sampling method was to ensure that the participants who participated in the research had the experience and expertise that will enable them to provide relevant and insightful data. It was deemed feasible to have a total sample size of 300 respondents in order to obtain a sufficient statistical power for structural equation modeling (PLS-SEM). The senior leaders, managers, and professionals in the security and risk management roles in those defense organizations formed the sample.

The data was collected through structured survey questionnaire to get perceptions and experience of respondents relating to the study variables. Thus, the questionnaire was made up of sections that included strategic leadership, security management, risk mitigation, and sustainable performance. The measurement instruments were then validated and reliable using the established scales from the previous literature. Respondents were asked to respond to a Likert scale of statements (strongly disagree to strongly agree). The questionnaire was pre tested with a small group of respondents to ensure clarity and understandability and necessary changes were made based on their inputs.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used for the purposes of data analysis. It is the case, however, that PLSSEM is particularly useful for analyzing complex models that have more than one variable and relationship. In addition, the survey is well-suited to test the theoretical model proposed in this study since it allows one to examine both direct and indirect effects amongst the variables. PLS-SEM, the researcher was able to examine the reliability and validity of the measurement model through confirmatory factor analysis (CFA) as well as to test the structural relationships between strategic leadership, security management, risk mitigation and sustainable performance. The analysis also consisted of assessing Multicollinearity by checking the Variance Inflation Factor (VIF) values to confirm independence of the predictor variables.

Ethical concerns were taken carefully throughout the research process. Before data collection, formal approval was acquired from the relevant bodies of the defense organizations to guarantee compliance with organizational protocols and privacy standards. The survey was voluntary and respondents were given an informed consent form describing the purpose of the study, the rights of the participants as well as guarantees of confidentiality. To ensure anonymity of the participants, each response was assigned with unique identification numbers and data stored with proper safeguards to keep it away from unauthorized access. Along with this, participants were also told that they could withdraw from the study at any time without penalty. These measures guaranteed that the research for ethical standards and confidentiality of the participants rights.

4.0 Findings and Results

4.1 Reliability Analysis

Construct	Cornbrash's Alpha	Composite Reliability (CR)
Strategic Leadership	0.85	0.90
Security Management	0.83	0.88
Risk Mitigation	0.80	0.86
Sustainable Performance	0.87	0.91

Cornbrash's alpha values for all constructs exceed the recommended threshold of 0.70, indicating high internal consistency and reliability of the measurement instruments. Similarly, the composite reliability (CR) values are above 0.70, further confirming the reliability of the constructs in the model.

4.2 Validity Analysis (HTMT)

Constructs	Strategic Leadership	Security Management	Risk Mitigation	Sustainable Performance
Strategic Leadership				
Security Management	0.65			
Risk Mitigation	0.61	0.68		
Sustainable Performance	0.58	0.62	0.64	-

The Heterotrait-Monotrait Ratio of Correlations (HTMT) values for all construct pairs are below the threshold of 0.90, which indicates that the discriminant validity has been established, meaning that each construct is distinct and measures different concepts.

4.3 Multicollinearity (VIF)

Construct	VIF
Strategic Leadership	1.28
Security Management	1.32
Risk Mitigation	1.30

The Variance Inflation Factor (VIF) values for all constructs are well below the cutoff value of 5, suggesting that Multicollinearity is not a concern. This means the predictor variables are independent and not highly correlated.

4.4 Model Fitness

Fitness Indicator	Value	Recommended Value
SRMR	0.045	< 0.08
NFI	0.91	> 0.90
RMS_theta	0.068	< 0.10

The model fitness indicators, including the Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), and Root Mean Square Theta (RMS_theta), all meet the recommended thresholds, indicating that the model has a good fit with the data and is statistically sound.

4.5 Structural Equation Modeling Results

Path	Coefficient (β)	t-value	p-value	Significance
Strategic Leadership -> Sustainable Performance	0.42	5.62	<0.001	Significant
Security Management -> Sustainable Performance	0.38	4.89	<0.001	Significant
Risk Mitigation -> Sustainable Performance	0.36	4.45	<0.001	Significant

All the direct paths between the independent variables (strategic leadership, security management, and risk mitigation) and the dependent variable (sustainable performance) are significant, with p-values less than 0.001. The coefficients (β) show the strength of the relationships, indicating that strategic leadership has the strongest influence on sustainable

performance, followed by security management and risk mitigation. The t-values are all well above the critical value of 1.96, further supporting the significance of these relationships.

5.0 Discussion and Conclusion

From this study's results, strategic leadership, security management, risk mitigation, and sustainable performance in the defense organizations have a positive relationship. The results show first that strategic leadership is positively and significantly related to sustainable performance. Therefore, the idea of leaders with a vision for where the organization is going and an ability to connect that vision with operational realities in order to deliver sustainable outcomes is supported. A very important role of strategic leadership is to activate the innovative spirit in the organization, to allocate resources in a very smart and efficient way and to direct the organization towards the long term goals. Such a finding is in line with previous research which found leadership to be a key driver of organizational sustainability (Avolio & Bass, 2004).

The study further confirms that security management plays a more significant role in the performance of sustainable building. Security management entails ensuring safety of assets, information, as well as individuals and helps to ensure operational stability and continuity. In defense organizations, where security trumps all, effective security management gives us operational disruptions at its minimum, thus improving organizational performance. The validity of this finding is congruent with the growing body of literature which promulgates the significance of regarding security protocols as one means of nurturing and sustaining organizational resilience and performance (Boin et al., 2010). The sustainability of an organization is positively affected by external threats, as organizations that invest in robust security framework are better placed to face them.

Significant predictors of sustainable performance included risk mitigation. Risk mitigation strategies consisting of effective risk mitigation techniques allow organizations to recognize potential threats and take proactive steps in order to resolve them and stop the trouble from aggravating to larger trouble. Extremely important in the context of defense organizations where the stakes are high, risk management is critical for the operational efficiency and long term success of such organizations. This is in line with other studies that have emphasized the importance of risk management to improve organizational performance (Hopkin, 2017). Adding risk management into their strategic planning processes can make the companies less vulnerable and enhance their chances of sustainable performance.

This study also finds that managing defense organizations should be a holistic endeavor. Simultaneous focus on strategic leadership, security management and risk mitigation have resulted in a complete framework of enhancing sustainable performance. Significant relationships between these variables increase the significance of integration of other functions

in defense organizations in addition to one aspect of management and that the optimal performance of an organization is based on the integration of the above variables.

Consequently, the study provides evidences that confirm the positive effects of strategic leadership, security management and risk mitigation on sustainable performance of defense organizations. This is consistent with existing theory on organizational sustainability and adds to the body of scholarship on defense sector management practice. The results of the study show that organizations that choose a strategic approach to leadership, and security management through investing and proactive risks management stand higher chances of enjoying sustainable performance outcomes.

Several recommendations can be made based on these findings. The leadership development programs should be employed by defense organizations as a priority in order to develop leaders who can align strategic objectives with operational activities. Organizations should also allocate resources to purchase an advanced level of security management systems capable of real-time monitoring and responding. Decision making should integrate risk management across all levels, to identify and manage potential threat early. Adoption of these strategies helps the defense organization become more resilient and support its long term sustainability.

Consequently, this study has implications beyond the defense related issues. The results indicate that similar management practices can also help other organizations in other industries that are exposed to significant risk and operational complexity. In addition, apart from defense organizations, strategic leadership, security management and risk mitigation are important for organizations that have to survive in turbulent and unpredictable environments. The results of this study are therefore useful for a broad range of organizations trying to achieve greater sustainable performance through the use of effective management practices. In future research, the results should be examined with additional moderating variables (such as organizational culture or the external environment) on the relationships present in this study. Further, longitudinal studies may give other insights into how these relationships may change over time, with regard to exposure to fluctuations in the external environment.

Contributions

Qasim Bajwa: Problem Identification, Literature search

Khuram Zubair: Drafting and data analysis, proofreading and editing

Muhammad Hasnain Ali: Methodology, Data Collection

Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t this article's research, authorship, and/or publication.

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