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Risk management as a strategic resilience lever for organizational performance: Empirical evidence from shipping companies in Kenya

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Abstract
In the face of intensifying maritime regulations and operational volatility, Kenyan shipping firms are embedding risk management into strategic planning as a core element of resilience, driven by rising compliance costs that now account for up to 30% of operational expenses. This study examines the impact of risk management as a strategic lever for resilience on the performance of shipping companies in Kenya's increasingly regulated maritime sector. Using a mixed-methods approach, the research analyses data from 172 respondents from shipping companies in Kenya, revealing a positive association between structured risk practices and key firm performance indicators, including customer service, internal efficiency, and organizational learning. The highest-rated statement was that systematic risk assessment facilitates organizational learning and growth, with a mean score of 4.05 and a standard deviation of 1.05, indicating strong agreement among Kenyan shipping companies that risk management contributes directly to internal development and strategic resilience. While risk management is embedded across operational functions in Kenyan shipping companies, its direct financial benefits are perceived as inconsistent or less easily quantified. The results provide empirical support for Organizational Resilience Theory in an African context and recommends systematic integration of risk management into the strategic processes to bolster resilience in Kenya's highly regulated shipping sector.

Keywords: Risk management, strategic resilience, shipping industry, organizational learning, maritime regulation, shipping performance

Introduction

Background to the study: Over the past decade, Kenya has tightened its maritime regulatory framework, most notably through the enactment of the Merchant Shipping Act (2012) and the more recent Maritime Transport Policy (2024). These instruments aim to bring local operations in line with international best practices, especially in areas like environmental safety, vessel standards, and port management (Haralambides, 2019) [9]. While the intention behind these policies is clear, their implementation has added layers of compliance obligations that have proven financially and operationally demanding for many local shipping firms.

Shipping companies operating in Kenya have faced operational cost increases of up to 15% directly attributable to compliance upgrades, including the adoption of low-sulfur fuel, enhanced port security protocols, and upgraded vessel technologies (Karenga, 2021) [16]. These changes have been further complicated by global mandates like the International Maritime Organization (IMO) 2020 [13] sulfur cap, which required major infrastructure investment and recalibration of supply chains. Smaller shipping operators, in particular, have struggled to absorb these costs, leading to increased freight charges, delayed deliveries, and strained customer relationships (Notteboom *et al.*, 2021) [25].

Within this high-cost, high-regulation context, risk management has emerged as a lifeline. Kenyan shipping companies are now integrating risk mitigation directly into their strategic planning processes, with the aim of not only complying with regulatory requirements but also maintaining performance benchmarks. These strategies often include the use of early

warning systems for policy changes, investment in compliance training, and the development of operational buffers to absorb potential shocks. As such, Kenya presents a rich context for exploring how risk management shapes the performance of shipping firms under regulatory strain. The dual influence of international and domestic regulations makes the Kenyan case particularly compelling, offering valuable lessons for similar markets across Africa and beyond. This is a high-cost, high-regulation setting, and risk management has become a lifeline. Kenyan shipping companies now include risk mitigation as part of their strategic planning processes, with the very purpose of not only fulfilling regulatory requirements but also of maintaining performance levels. Such practices typically include the introduction of early warning systems for policy adjustment, investment in compliance training, and the design of operational buffers to absorb potential shocks.

As a result, Kenya provides a dynamic context in which to examine how risk management shapes the performance of shipping firms under regulatory duress. The dual impact of foreign and domestic regulations makes the Kenyan example particularly interesting, with important lessons to be derived for similar markets in Africa and beyond.

Statement of the Problem

Kenya's shipping industry operates at a critical nexus of global commerce and supervisory regulation, but is faced with an unfolding crisis of strategic misalignment in the face of increasing compliance pressures. While it is the primary logistics hub of East Africa through the Port of Mombasa, shipping lines operating in Kenya have been confronted with increased regulatory demands under domestic and foreign legislation, primarily the Merchant Shipping Act (2012), Maritime Transport Policy (2024), and IMO environmental regimes. These policies, while well-intentioned, have resulted in a 15% rise in the cost of operations (Karenga, 2021) [16], a 20% loss in port effectiveness (KMA, 2020), and widespread disruptions to regional trade streams through re-routing and long transit times (Hillebrand Gori, 2025) [11]. Compliance expenses have skyrocketed to cover nearly 30% of total operating expenses, also burdened by geopolitical strains such as the Red Sea disruptions that forced costly detours (Madsen, 2024) [20]. Such collective burdens have eroded profitability, triggered cost pass-through to end-users, and pushed infrastructure capacity to the limits, effects most adversely experienced in emerging economies whose strategic buffers are slender (Sesele, 2024; Burgstahler, 2023) [3, 31]. Thus, the consistent performance disparity within the industry serves to underscore the necessity for shipping firms to implement structurally revolutionary strategic resilience mechanisms that are proactive rather than reactive.

In spite of the relative focus on the importance of strategic resilience, including risk management, resource diversification, and responsiveness, in international literature, in actual practice, the use of such frameworks in African maritime environments is limited. Kenyan shipping firms, in particular, continue to suffer from the dual curse of regulatory vulnerability and infrastructure deficits, and qualitative data describing local coping strategies are scarce (Holgado & Niess, 2023) [12]. As new measures of resilience, such as developing cooperative alliances and investing in cleaner technology, gain acceptance, their effects are unevenly reported and variably implemented (Wang *et al.*, 2024) [38]. Some companies have come a great distance by embracing risk identification tools and scenario planning, but others continue to miss the potential of executing these measures holistically, causing sporadic strategic responses (Um & Han, 2021) [35]. The disparity in adoption creates uneven performance outcomes, especially among smaller shipping operators without economies of scale. The strategic management of the sector is also hampered by the fact that there is no benchmarked data on how specific resilience levers translate into tangible performance gains under strict regulatory environments. Hence, in the absence of empirical evidence of a Kenyan context, global best practices are difficult to tailor. This study bridges that important gap by evaluating the impact of risk management as a central component of strategic resilience on customer service, internal process performance, and organizational learning in Kenyan shipping firms that are under the pressure of regulation (Busolo, 2025) [4].

Research objective

The study objective was to examine the influence of risk management on the performance of shipping companies in Kenya.

Research Hypothesis

The study tested the following null hypothesis

- **H_{01}:** Risk management has no statistical significant influence on the performance of shipping companies in Kenya

Literature Review

Theoretical Review

Shipping companies, indeed, are employed in one of the world's most compliance-oriented industries. Compliance with international safety standards, international environmental regulations, and regional maritime laws is crucial to be able to have access to ports across the globe and supply chain paths. Adherence to policy tools such as the Merchant Shipping Act (2012) and the Maritime Transport Policy (2024) by Kenyan shipping companies is essential for regulatory licensure and authenticity within the sector (Karenga, 2021) [16]. Institutional theory thus explains why such firms will invest substantial amounts in compliance programs even when such an outlay does not yield immediate financial gains.

Institutional theory gives us a perceptive framework for seeing how organizations learn to adjust their behaviors in alignment with societal expectations. Developed from Meyer and Rowan's (1977) [21] research, institutional theory makes the case that, beyond economic or instrumental motivations, organizations wish to conform to societal norms, cultural norms, and regulatory institutions in order to gain legitimacy. In industries subject to massive regulation, such as maritime logistics, legitimacy becomes non-symbolic; obtaining legitimacy is a prerequisite for marketplace access, resources, and survival.

In addition, the Organizational Resilience Theory (ORT) enriches our understanding of how businesses respond to disruptions in terms of their ability to envision, absorb, and transform anticipated as well as unexpected shocks. Originally developed from ecological systems thinking, the theory has been further evolved to address business continuity and performance under the context of complex, uncertain settings (Duchek, 2020) [7]. In shipping, ORT

provides an insightful perspective on how shipping companies respond to regulatory storms. Complying with environmental, safety, and trade regulations has the tendency to create operational dislocations such as retrofitting vessels, rerouting shipments, or revising safety protocols. Such dislocations tend to stress already stretched systems. From a resilience perspective, firms that best weather these shocks do so because they have established practices for tracking risks, scenario planning, and cross-functional coordination (Pettit *et al.*, 2019) [28].

Empirical Review

Risk Management

The importance of risk management in promoting operational stability has grown as the maritime sector struggles with more complicated regulatory requirements. Today's shipping industry is characterized by constantly changing international compliance requirements as well as outside shocks that impair logistics, raise operating expenses, and jeopardize overall performance. Effective risk management is no longer discretionary in such a setting; it is essential to existence. Risk management plays a central role in the general framework of strategic resilience in shipping, exerting a direct influence on shipping firms' operational, customer service, and financial performance. The ability to predict, evaluate, and reduce risks is essential to maintaining service continuity in Kenya's maritime industry, where the Port of Mombasa is a major entry point for regional trade, even in the face of shifting trade volumes, changing international regulations, and unanticipated crises (Muhia, 2023; Rodrigue *et al.*, 2020) [22, 30].

Essentially, risk management is all about foreseeing, anticipating possible issues before they arise, evaluating the likelihood of their occurrence and the impact they will have, and putting measures in place to limit their effect or avoid their occurrence. In the shipping industry, it is not only helpful but also necessary, particularly with regulations imposed by international bodies like the International Maritime Organization (IMO) [13] becoming more and more stringent (Pettit *et al.*, 2019) [28]. From restricting emissions to modifying port security processes and cargo carriage regulations, shipping lines are constantly facing a complex and often changing regime of regulation. Failure to maintain such standards can significantly affect their operations and threaten long-term viability.

After the COVID-19 pandemic, this necessity for forward thinking was once again strengthened. The global crisis exposed the vulnerability of global supply chains, demonstrating how even minor regulatory holdups or a deficiency of emergency planning might result in severe disruption. The majority of businesses have responded by prioritizing the development of resilience, which goes beyond legal compliance but entails being ready to act quickly and evolve when circumstances shift (Vilko *et al.*, 2019; Queiroz *et al.*, 2022) [29, 37]. Risk management under this is a pillar of strategic resilience, giving businesses the agility to take in shocks and come out robust, placing it above a compliance tool.

Strategic Resilience and Risk Management

Strategic resilience is currently a central concept in organizational studies, particularly in highly regulated sectors such as global shipping. Resilience simply refers to the capacity of an organization to anticipate, respond to, and recover from crises in order to regain stability as well as build competitiveness (Lengnick-Hall *et al.*, 2020) [19]. In transport, this involves the application of supply chain versatility, resource spreading, formation of collaborative partnerships, and efficient risk management procedures. These, collectively, enable firms to react to regulatory variations and interruptions and thus ensure long-term performance and success (Pettit *et al.*, 2019; Ivanov & Dolgui, 2019) [14, 28].

Empirical evidence has proven this to be the case. For instance, Chowdhury *et al.* (2019) [5] confirmed in a quantitative survey among 274 supply chain professionals that relational practices ($\beta = 0.41$, $p<0.01$) as well as network complexity ($\beta = 0.38$, $p<0.01$) significantly both advance resilience, which in turn motivates organizational performance. Their structural equation model explained 62% of the variance ($R^2 = 0.62$), emphasizing resilience as a strategic value. But the research's total cross-sectoral approach resulted in a contextual lack by not focusing on shipping firms specifically.

On the international industry level, the United Nations Conference on Trade and Development (UNCTAD) Review of Maritime Transport 2019 posed how seaborne shipping companies react to pressures of regulation and outside shocks. In accordance with global data on trade volumes, port efficiency, and environmental regulation compliance, the report showed how the regulations such as the International Maritime Organization's (IMO) [13] 2020 sulfur cap raised costs of operation while simultaneously evoking a 15% improvement in efficiency. Businesses that had dynamic supply chains were much better positioned to manage disruption. Yet, it primarily focused on the major operators, thereby underrepresenting the local small and medium-sized firms and indicating an enduring research gap (UNCTAD, 2019) [36].

Building on this, Notteboom *et al.* (2021) [25] compared how the shipping industry managed the 2008-2009 financial crisis and the COVID-19 pandemic. By examining 50 international container shipping carriers, they found that regulatory bodies particularly those for health and safety had a significant impact on resilience and crisis performance. The study illustrates how industry policies can constrain and enable firms, depending on strategic adjustment.

Other sector-level studies also identify risk management as a driver of resilience. Singh and Hong (2023), surveying 320 firms across various sectors, found that the integration of corporate social responsibility (CSR) with risk management practices reduced the adverse effects of external shocks and enhanced strategic performance. But they also observed discrepancies: larger firms were able to incorporate CSR into business strategies, whereas small firms were not able to meet the financial and operational demands. Similarly, Enzokuhle (2024) observed that firms utilizing proactive approaches to risk management, such as risk-sharing agreements and contingency planning, experienced less disruption. Surprisingly, 65% of firms with real-time risk tracking reduced supply chain disruption by over 20%. Yet, the smaller entities were discovered to apply reactive, manual approaches, so more research needs to be conducted on how they can adopt technology-based tools for managing risk.

With a glance at the Kenyan context, risk management and resilience are increasingly being regarded as principal drivers of maritime performance. Mwasinago (2022) [24], in

Economic Analysis of Maritime Sector Performance in Kenya, evaluated the contribution of the Kenya Maritime Authority (KMA) and the Merchant Shipping Act (2012) to the sector's growth. Amassing information from 60 stakeholders through a descriptive study and utilizing regression alongside the Generalized Method of Moments (GMM) model, the study confirmed that an increase in labor productivity by 1% increased output by 1.2723%, while foreign exchange rate changes significantly affected output by 3.2744%. The results confirmed that the maritime sector made a significant contribution to Kenya's economic growth at the 10% level ($p = 0.084$). But secondary data shortages narrowed knowledge of how KMA functions to enhance labor productivity, leaving a timely empirical gap.

Finally, Kenyan institutions themselves have been resilience-practice. Kenya National Commission for UNESCO (KNATCOM) during 2019-2023 mid-term review re-aligned strategic goals to address climate change and the COVID-19 pandemic a situation of forward-thinking adaptation to external shocks (Kenya National Commission for UNESCO, 2019). In the same spirit, the Kenya Maritime Authority (2023) has prioritized resilience in its strategic plan through investments in regulatory and institutional capacity to improve maritime governance. These local initiatives find synergy with international calls for resilience, emphasizing the need for Kenyan shipping lines not only to comply with robust global benchmarks such as the Safety of Life at Sea (SOLAS) Convention but also to develop resilience capacity that guarantees sustained performance and competitiveness (Shin & Park, 2021; Mwangi & Ragui, 2021) [23, 32, 38].

Performance of Shipping Companies

Shipping company performance is heavily correlated with the regulatory environment within which they are conducting business, particularly in emerging maritime regions. Begealawuh (2019) [1], in a study paper titled Challenges of Maritime Security and Policy Development in the East Africa Community, analyzed the effects of shipping legislation such as the Maritime Transport Policy (2024) and the Merchant Shipping Act (2012) on maritime security and the business activities of shipping operators in Kenya and Tanzania. Using a mixed-methods research design that combined quantitative data from 30 shipping companies with qualitative interviews of 50 maritime policymakers and experts, the study made use of regression analysis to determine the impact of policy rules. The findings indicated that greater compliance across the industry was ensured by the Merchant Shipping Act, while, at the same time, it created operational issues, namely for small firms that lacked sufficient resources to afford compliance with the rules of the regulations. The research identified a context gap in the longitudinal analysis of how these regulations impact the sustained performance of small shipping companies.

Banking on this local emphasis, Mwasinago (2022) [24] conducted the analysis of Kenya's economic contribution from the maritime industry based on the research Economic Analysis of Maritime Sector Performance in Kenya. The research was keen on the influence of the Kenya Maritime Authority (KMA) and the Merchant Shipping Act (2012) to industry outcomes. Using a descriptive research design, data were obtained from 60 shipping stakeholders, government officials, and shipping companies using standardized questionnaires, while secondary data were analyzed by using regression techniques and Generalized Method of Moments (GMM) model. The results showed that labor productivity also contributed positively, whereby a 1% increase in productivity was associated with a 1.2723% increase in maritime output, with foreign exchange rate fluctuation having an even higher effect of 3.2744%. The study further established that the maritime sector significantly contributed to the economic growth of Kenya at 10% significance ($p = 0.084$). But secondary data limited the ability to comprehensively assess KMA's effectiveness in boosting productivity, and there existed a gap in empirical research.

At the firm level, Njeri *et al.* (2023) researched the moderating role of international regulation on performance within The Moderating Effect of International Maritime Regulations on the Relationship between Localization Technology and Shipping Line Performance in Kenya. Using a descriptive research design and stratified random sampling, 40 Kenyan shipping companies were surveyed with structured questionnaires, and multiple regression analysis to test relationships. The findings showed that international maritime regulations, primarily localization technology, significantly affected efficiency in operations ($\beta = 0.41$, $p<0.05$) by mediating the relationship between strategic resilience and firm performance. Nevertheless, the research's exclusive focus on localization technology overlooked other facets of strategic resilience and pinpointed a methodological research gap in capturing performance's determinants as a whole.

The performance of shipping companies is closely tied to the regulatory environment in which they operate, particularly in emerging maritime regions. Begealawuh (2019) [1], in a study titled Challenges of Maritime Security and Policy Development in the East Africa Community, investigated the effects of shipping laws such as the Maritime Transport Policy (2024) and the Merchant Shipping Act (2012) on both maritime security and the business performance of shipping companies in Kenya and Tanzania. Using a mixed-methods approach that combined quantitative data from 30 shipping companies with qualitative interviews involving 50 maritime specialists and policymakers, the study employed regression analysis to evaluate the impact of policy regulations. Findings indicated that while the Merchant Shipping Act strengthened compliance across the sector, it also created operational challenges, particularly for smaller firms that lacked sufficient resources to meet the regulatory demands. The research identified a contextual gap in the long-term analysis of how such regulations affect the sustained performance of smaller shipping companies.

Performance measurement in the shipping industry plays a pivotal role in determining the medium and long-term competitiveness, profitability, and viability of a firm, particularly in the context of an increasingly globalized and dynamic world with shifting regulatory and operating forces (Rodrigue *et al.*, 2020) [30]. The performance of the shipping companies in Kenya depends on the number of active companies, routes of operation, fleet size, and global market positioning. Strategically important shipping routes, such as the Asia-Africa, East Africa-Europe, and Middle East-East Africa routes, facilitate high-value products like petroleum products and manufactured products, and produce like coffee and tea to be traded (Okoth *et al.*, 2022) [26]. In this

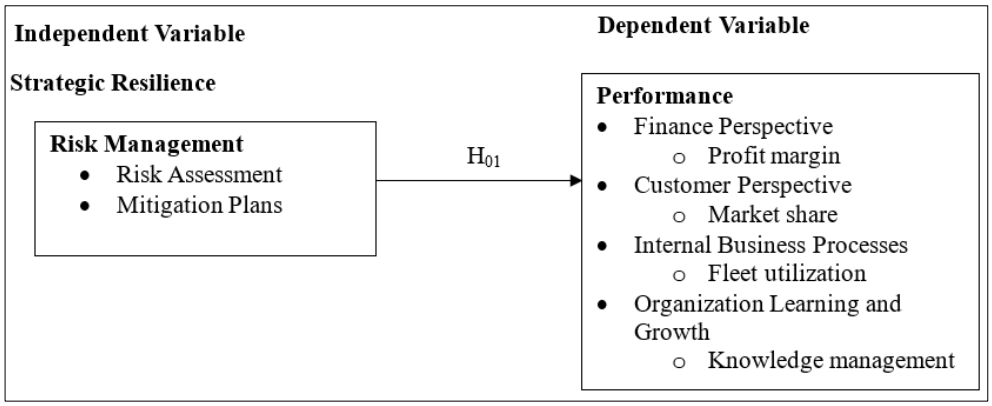
regard, maintaining high performance levels is a matter of direct association with a firm's responsiveness to evolving patterns of trade, port capacity constraints, and evolving regulatory regimes.

In another study on the Application of a Fuzzy Multi-Criteria Decision Framework for Safety Performance Evaluation in the Nigerian Maritime Industry assessed how risk and safety management frameworks are applied within Nigerian shipping companies. Using a qualitative research design, it gathered safety data and expert perspectives from managers and safety specialists in container shipping firms through structured interviews and safety audit reports. A fuzzy multi-criteria decision analysis framework was employed to evaluate safety compliance and risk management practices, with statistical tools applied to strengthen qualitative findings. The results underscore that Nigerian shipping companies are actively embedding safety frameworks, though regulatory systems remain less mature compared to developed maritime industries. The study contributes important insights for emerging economies by showing how structured safety evaluation can strengthen resilience and performance in maritime operations.

An effective method to measure shipping performance within Kenya's shipping sector is the Balanced Scorecard (BSC), which integrates customer-facing measures such as market share and on-time delivery rates alongside internal process measures such as turnaround time and fleet utilization (Suprihati, 2019) [34]. BSC aligns operational performance with customer satisfaction, providing a multi-perspective performance evaluation that situates daily work within the larger context of long-term objectives (Panayides, 2023) [27]. Performance measurement, in the case of this approach, extends beyond numerical outcomes to include the institutionalized enhancement of internal operations that facilitate service quality and international compliance with regulation (Slack & Lewis, 2019) [33].

The strategic resilience and risk management interdependence is strongest when long-term profitability and sustainability in shipping are assessed. Performance, in this case, is not simply a measure of efficiency or market share but the ability to absorb shocks and adapt based on evolving circumstances without compromising service delivery or compliance (Shin & Park, 2021; Chunsheng *et al.*, 2020) [6, 32]. This recognition has led large maritime firms to invest in supply chain diversification, advanced tracking systems, and collaborative alliances that enhance resilience along with risk-mitigation abilities (Herold, 2021) [10]. In Kenya's shipping industry, a vital trade artery for landlocked neighbors this integration ensures that a hedging against exogenous disruptions, be they environmental policy, geopolitical risk, or market volatility, from undermining performance benchmarks (Gichuri, 2022; Okoth *et al.*, 2022) [8, 26]. Through the incorporation of risk management in the strategic resilience model, shipping companies not only defend profitability but also strengthen their capacity to deliver stable services in a highly regulated and intensely competitive global maritime sector (Kenya Maritime Authority, 2023; Mwangi & Ragui, 2021) [23, 38].

Conceptual Framework



Note: Conceptual Framework with Independent Variable and Dependent Variable

Fig 1: Conceptual Framework

Methodology: A quantitative-dominant mixed-method approach was used in this study to examine how risk management affects Kenyan shipping businesses' performance. The strategy was motivated by the necessity to document the quantifiable effects of risk management procedures as well as the contextual factors influencing how organizations react to regulatory demands. The study sought to offer a comprehensive understanding of how risk-oriented tactics impact company performance in a regulated marine environment by combining contextual interpretation with structured data analysis.

The study used an explanatory sequential design, collecting and analyzing quantitative data first, then moving on to a qualitative phase to provide more context for the statistical results. This choice was impacted by the study's primary objective, which was to identify the kind and strength of the relationship between risk management and performance results. The sample consisted of 172 respondents from 43 registered shipping companies with the Kenya Ships Agents Association (KSAA), which formed the basis of the quantitative investigation. Of these, a purposeful sample of key informants from 15 selected shipping companies was then interviewed for more detailed qualitative follow-up and clarification of the initial findings.

Discussion and Findings

The study began by assessing the degree to which risk management practices are linked to the performance of shipping companies operating within Kenya's regulated maritime sector. Using feedback from 172 respondents, the quantitative analysis revealed that risk management is both widely implemented and positively associated with performance outcomes. Descriptive statistics showed that the majority of respondents agreed or strongly agreed with

statements relating to the presence of structured risk identification, mitigation strategies, and regulatory monitoring mechanisms within their organizations.

Descriptive Analysis

The descriptive measurement of risk management practices in Kenyan shipping companies, as presented in Table 1, shows a generally positive orientation towards risk-mitigating measures. Respondents were asked to state their level of agreement with the principal statements regarding risk management using a 5-point Likert scale. The aggregate average of the four statements stood at 3.92, indicating that there was broad acceptance that risk management was viewed as being of value and practiced in the industry.

Table 1: Risk Management

Statements	Min	Max	Mean	Std. Deviation
Effective risk management strengthens internal business processes through improved fleet utilization	1	5	3.93	1.08
A dedicated risk management team enhances on-time deliveries by mitigating disruptions that customer service faces	1	5	3.98	1.04
The financial stability of shipping companies is enhanced by proactive risk mitigation plans	1	5	3.73	1.48
Systematic risk assessment supports organizational learning and growth	1	5	4.05	1.05
Average			3.92	1.16

Source: Busolo, (2025) **Key:** Variables are measured on a 5-point Likert scale where 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), and 5 = strongly Agree [4].

The statement that systematic risk assessment facilitates organizational learning and growth recorded the highest mean value of 4.05, with a standard deviation of 1.05 out of the four aspects that were examined. This indicates that most businesses view risk management as a tool to facilitate internal development as well as a defense mechanism, indicating a more strategic, learning-oriented approach. With a high mean of 3.98 and a comparatively low standard deviation of 1.04, the statement that a dedicated risk management team enhances on-time deliveries by minimizing disruptions to customer service followed suit. This demonstrates that businesses agree that risk teams improve customer happiness and operational reliability, especially by reducing service interruptions.

Of the four dimensions that were subjected to testing, the assertion that systematic risk assessment enables organizational learning and development reveals that a majority of companies perceive risk management as not only a protection mechanism but also as a tool to help achieve in-house development, reflecting a more strategic, learning-oriented approach. Similarly, the statement that a dedicated risk management team enhances on-time deliveries by minimizing customer service disruption reveals the agreement among firms that risk management teams enhance the reliability of operations and customer satisfaction, in this case, by minimizing disruption to service.

The statement that effective risk management strengthens internal business processes through improved fleet utilization reported a mean of 3.93, which suggests that shipping companies also associate risk planning with greater internal efficiency. Better fleet utilization, in this case, most likely refers to better scheduling, maintenance planning, and route optimization driven by proactive risk assessment.

The lowest-rated of the statements was that the financial well-being of shipping companies is strengthened by forward-looking risk-reducing strategies, which recorded a mean score of 3.73 and a higher standard deviation of 1.48. While still weakly positive, inconsistency in scores may be an indicator of differential levels of financial robustness or ability to absorb resources within these shipping companies. It may also be an indicator that while the effects of risk management within operations are widely proven, its quantifiable financial returns are less widely felt or harder to quantify.

Overall, the relatively high mean scores and low standard deviations (except for financial security) affirm the argument that risk management is not just practiced but embedded within several business functions in Kenyan shipping.

Thematic Analysis

Thirteen (13) senior operations managers and leaders of leading shipping firms and Kenya's regulatory agencies were interviewed with purposively chosen semi-structured interviews depending on their shipping operations and compliance knowledge. The interviews were conducted over four weeks. By the thirteenth interview, saturation was attained, and no new themes came up; this illustrated that saturation of data had been reached. The process thus provided for thorough engagement with industry perspectives, giving a good foundation for the subsequent thematic analysis (Braun & Clarke, 2019) [2].

The research considered the impact of the risk management practice on the performance of shipping companies in Kenya. The thematic outcomes of the qualitative interviews identified three overall strategies: regulatory compliance, proactive risk assessment, and crisis response planning.

Table 2: Summary Table: Risk Management

Sub-theme	Description	Frequency	Illustrative Quote
Regulatory Compliance	Adhering to safety and security requirements	10	"Compliance is not optional; it's a matter of business survival."
Proactive Risk Assessment	Early identification of risks	7	"We conduct regular risk audits to stay ahead of potential disruptions."
Crisis Response Planning	Developing contingency plans	7	"Our crisis response plans are now mandatory for all operations."
Route Avoidance and Rerouting	Avoiding high-risk shipping lanes	6	“We had to completely suspend the Russia operations.”

Source: Busolo (2025) [4]

Of the three, regulatory compliance was the most frequently mentioned, with 10 (ten) out of the interviewees mentioning its significance. Compliance was not merely defined by the respondents in terms of legal enforcement but as a survival imperative of everyday practice, given the strict enforcement environment in the shipping industry.

Further, 7 (seven) of the respondents emphasized the significance of the identification of risk at the initial stages through scheduled audits and systematic evaluation. Such a proactive measure enables the companies to identify vulnerabilities prior to their heightened phase and minimize disruption in operations. The interviews indicated that companies undertake periodic risk audits at regular intervals to foresee possible threats and improve organizational preparedness. This facilitates smoother business process execution, even during dynamic external environments.

Crisis response planning, as in the discussion of 7 (seven) of the interviewees, proved to be essential in anticipation of unforeseen disruptions. The study showed that contingency planning has become institutionalized as an SO requirement by most shipping companies. Such plans entail clearly spelt-out procedures for the management of crises, creating service continuity even at times of high stress levels.

The respondents emphasized the proactive suspension of operations in conflict-prone regions. As one remarked, "Our shipping line can halt activities to steer clear of high-risk waters." These spatial risk mitigation measures not only reduce exposure to geopolitical disruptions but also strengthen schedule reliability and cargo safety, key determinants of organizational performance.

Together, the findings suggest that these risk management practices have a greater impact on organizational resilience and internal efficiency than for short-term financial return. While financial security is a positive outcome, direct financial gain from risk management interventions was characterized as small or difficult to measure. For instance, while some firms buy insurance as part of their mitigation practice, such an expenditure was viewed as defending operations and not necessarily adding revenue directly.

In summary, thematic analysis confirms the key function of risk management in enhancing non-financial aspects of performance, particularly learning, adaptability, and operational resilience. The findings reveal that Kenyan shipping firms should continue to embed risk prevention practices while seeking opportunities for integrating the measures into broader business models that can provide material economic return on investment. The study proposes the incorporation of risk management into key operational and strategic processes to sustain high performance in spite of rising regulatory and environmental. `

Conclusion

The findings confirm that risk management practices, specifically systematic risk analysis, specialized teams, and effective mitigation, are widely applied and positively related to operational outcomes such as timely delivery, procedural efficiency within the firm, and organizational learning. Risk management was described as a proactive and systematic process of anticipating, analysing, and mitigating potential disruptions, in line with Organizational Resilience Theory's emphasis on anticipatory adaptation (Pettit *et al.*, 2019) [28]. Descriptive findings revealed that the majority of shipping companies surveyed had institutionalized risk identification processes and invested in risk avoidance techniques, resulting in improved performance. Interestingly, those who described their risk mitigation strategies as strong also reported greater levels of creativity and service reliability. Some shipping firms may struggle to translate risk management activities into direct financial outcomes due to limited resources, inconsistent enforcement of regulations, or an underdeveloped return-on-investment framework. This aligns with institutional theory, which suggests that while firms may conform to regulatory expectations to maintain legitimacy, they may not always experience proportional financial returns, particularly in resource-constrained settings (Meyer & Rowan, 1977; Haralambides, 2019) [9, 21].

Recommendation

Shipping companies need to integrate risk management into core strategic and operational roles to ensure resiliency across regulatory and environmental challenges. Organizations are urged to embed formalized risk analysis, proactive mitigation policies, and specialist risk personnel that combine resiliency activity with performance targets beyond the boundary of compliance. In order to close the gap of financial yields, the companies ought to initiate frameworks that tie compliance spending to long-term profitability and initiate innovations such as scenario planning, cross-functional coordination, and data-driven decision-making. Capacity building and training will also enhance organizational preparedness.

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