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Risk Mitigation Strategies and Performance of Floriculture Firms in Laikipia County, Kenya

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Abstract

Floriculture firms operate within export-oriented and quality-sensitive value chains where performance depends on profitability, productivity, product quality, export volume, buyer retention, and sustainability compliance. Despite the contribution of Kenya's flower industry to foreign exchange earnings, employment creation, rural livelihoods, and agricultural commercialization, firms in Laikipia County continued to face risks linked to climate variability, pest and disease pressure, water scarcity, logistics disruptions, rising production costs, exchange rate exposure, certification requirements, and export compliance demands. This study examined the effect of risk mitigation strategies on the performance of floriculture firms in Laikipia County, Kenya. The study was anchored on Enterprise Risk Management Theory and adopted a positivist research philosophy, quantitative approach, and descriptive-correlational research design. The target population comprised 116 managerial and supervisory personnel drawn from 10 floriculture firms in Laikipia County, and a census approach was used. Primary data were collected using a structured questionnaire. Validity was assessed through expert review, Kaiser-Meyer-Olkin measure, and Bartlett's Test of Sphericity, while reliability was tested using Cronbach's Alpha. Data were analyzed using descriptive statistics, Pearson Product-Moment Correlation analysis, and simple linear regression with the aid of SPSS Version 27. The findings showed that respondents generally agreed that floriculture firms used risk mitigation strategies such as standard operating procedures, process redesign, policy and behavioural controls, diversification, insurance arrangements, and contingency planning. Correlation analysis revealed a strong, positive, and statistically significant relationship between risk mitigation strategies and firm performance. Regression results showed that risk mitigation strategies explained 41.2% of the variation in firm performance and had a positive and statistically significant effect ($\beta = 0.642$, $p < 0.001$). The study concluded that risk mitigation strategies enhanced operational continuity, reduced losses, protected product quality, supported export compliance, strengthened buyer confidence, and improved sustainability performance. The study recommended stronger internal controls, process redesign, insurance, diversification, irrigation investment, pest and disease control, staff training, financial controls, export compliance systems, and contingency planning.

Keywords: *Risk mitigation strategies, enterprise risk management, floriculture firms, firm performance, export compliance, Laikipia County.*

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1. Introduction

Floriculture firms play a critical role in export-oriented agribusiness by contributing to employment creation, foreign exchange earnings, value-chain development, private investment, rural livelihoods, and agricultural commercialization. Their contribution has attracted increasing attention because the sector operates within competitive, perishable, quality-sensitive, and risk-prone global value chains. Performance in floriculture is reflected through profitability, productivity, product quality, export reliability, buyer retention, market stability, operational continuity, and sustainability compliance. Export-oriented agribusiness firms are increasingly required to maintain cost efficiency, quality consistency, timely delivery, and sustainability standards in order to remain competitive (Kumar & Singh, 2021; Mwangi & Kariuki, 2022). Despite this importance, floriculture firms remain exposed to risks that may weaken profitability, product quality, market access, and long-term sustainability.

Globally, floriculture has developed into an important commercial agricultural activity because cut flowers and ornamental plants are traded through integrated international supply chains. The global flower industry is driven by consumer demand, export competitiveness, product differentiation, and efficient logistics systems (Wainaina & Bett, 2021). However, the industry faces risks arising from perishability, climate variability, pest and disease outbreaks, energy costs, market fluctuations, changing buyer requirements, exchange rate movements, and strict phytosanitary standards. Floriculture firms must therefore align production, quality control, cold-chain handling, and export logistics because delays or quality failures can reduce profitability and weaken buyer confidence (Gitau & Karanja, 2022). Consequently, performance depends not only on production capacity but also on the ability to manage value-chain risks.

Enterprise risk management has become an important managerial approach for strengthening resilience, competitiveness, and continuity among firms operating in uncertain environments. Enterprise risk management enables firms to identify strategic, operational, financial, and compliance risks before they negatively affect organizational objectives (Mikes & Kaplan, 2021). Integrated risk management further improves decision-making by linking risk information to strategic planning, resource allocation, internal controls, and performance monitoring (Fraser & Simkins, 2022). Within export-oriented agribusiness, effective risk management is important because firms face uncertainties related to international prices, quality standards, transport systems, input supply, exchange rates, and regulatory requirements (Okello & Njeru, 2023). Among its dimensions, risk mitigation strategies are particularly important because they translate risk awareness into practical actions that reduce losses and protect firm performance.

The Kenyan floriculture context reflects these global and regional realities. Floriculture is one of Kenya's most important export-oriented agricultural subsectors because it contributes to foreign exchange earnings, employment creation, value-chain development, and rural livelihoods. Kenya's floriculture industry has grown due to favourable climatic conditions, private investment, international market linkages, and a reputation for quality cut flowers (Mwangi & Wanjiru, 2021). Nevertheless, Kenyan flower firms continue to face high production costs, freight charges, exchange rate fluctuations, phytosanitary requirements, pesticide residue controls, water constraints, and changing buyer standards (Njuguna & Ombui, 2022; Kiptoo & Langat, 2024). In Laikipia County, floriculture firms operate within an environment shaped by agro-ecological diversity, commercial agriculture opportunities, water access concerns, market uncertainty, and logistical dependence on export supply chains.

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1.1 Problem Statement

Floriculture firms contribute significantly to employment creation, foreign exchange earnings, rural livelihoods, value-chain development, and agricultural commercialization. Sustainable performance in the sector depends largely on firms' ability to manage production, market, financial, logistical, compliance, and environmental risks through structured enterprise risk management systems. Risk mitigation strategies are particularly important because they enable firms to reduce exposure to adverse events, protect product quality, maintain delivery reliability, reduce wastage, support export compliance, and strengthen buyer confidence (Beasley & Branson, 2022). Structured risk systems also improve organizational resilience by linking risk responses to strategy, resource allocation, internal controls, and performance monitoring (Fraser & Simkins, 2022).

Despite this expectation, floriculture firms in Kenya, including those operating in Laikipia County, continued to face performance-related challenges. Kenya's flower industry generated about KES 108 billion, equivalent to approximately USD 835 million, in export earnings in 2024, yet firms remained exposed to rising production costs, pest-related restrictions, airfreight disruptions, market volatility, water scarcity, and stringent export requirements (Kenya Flower Council, 2025). The sector employed more than 500,000 people directly and affected about two million people indirectly, meaning that performance instability threatened livelihoods, rural incomes, and foreign exchange earnings (Bermudez, 2024). Further, the European Union accounted for about 70% of the sector's foreign exchange revenue, exposing firms to market concentration and strict compliance risks (Njuguna & Ombui, 2022).

Evidence showed that these risks had already affected firm performance. Stricter European Union controls on false codling moth and pesticide compliance increased sampling of Kenyan roses from 5% to 25% since 2020 and caused delays, rejected consignments, and revenue losses of up to 30% among some exporters (AP News, 2025). These challenges reduced productivity, weakened product quality, increased wastage, lowered profitability, and threatened buyer confidence (Mutua & Kibet, 2022). Previous studies had examined enterprise risk management broadly, but limited evidence had isolated risk mitigation strategies as a predictor of floriculture firm performance in Laikipia County. This study therefore examined the effect of risk mitigation strategies on performance of floriculture firms in Laikipia County, Kenya.

1.2 Research Objective

To establish the effect of risk mitigation strategies on the performance of floriculture firms in Laikipia County, Kenya.

1.3 Research Hypothesis

H_{01}: Risk mitigation strategies have no statistically significant effect on performance of floriculture firms in Laikipia County, Kenya.

2. Literature Review

2.1 Theoretical Review

This study was anchored on Enterprise Risk Management Theory, advanced through the work of the Committee of Sponsoring Organizations of the Treadway Commission. The theory explains how organizations identify, assess, respond to, and monitor risks that may affect strategic and operational objectives. It emerged from the fields of risk management, internal control, corporate governance, and strategic management, and gained prominence through the Enterprise Risk Management–Integrated Framework, which emphasized the integration of risk

management with strategy and performance (COSO, 2017). Contemporary literature further recognizes Enterprise Risk Management Theory as an appropriate framework for explaining risk governance, organizational resilience, strategic decision-making, and performance improvement in uncertain business environments (Beasley & Branson, 2022).

Enterprise Risk Management Theory posits that risk is inherent in all organizational activities and cannot be eliminated completely. However, risks can be identified, assessed, mitigated, and monitored systematically. Consequently, the theory advocates proactive risk identification, structured risk assessment, appropriate risk responses, internal controls, communication, and continuous monitoring to reduce exposure and strengthen organizational performance (Fraser & Simkins, 2022). Within the context of floriculture firms, the theory views risk mitigation strategies as practical mechanisms for reducing the likelihood and impact of adverse events. Through mitigation strategies such as insurance, diversification, compliance systems, quality assurance, contingency planning, staff training, supplier coordination, irrigation investment, pest control systems, and internal controls, floriculture firms can reduce losses, protect product quality, sustain operations, maintain buyer confidence, and comply with export requirements.

The theory is particularly applicable to floriculture firms because they operate within perishable, quality-sensitive, and export-oriented value chains. These firms are exposed to climate variability, pest and disease pressure, water constraints, high production costs, logistics disruptions, export compliance requirements, market volatility, and exchange rate fluctuations. Although Enterprise Risk Management Theory may be costly and complex to implement, especially in firms with limited financial, technical, and human resource capacity, it remains appropriate for explaining how structured mitigation responses enhance resilience, continuity, and firm performance (Fraser & Simkins, 2022). Accordingly, the theory provided the conceptual foundation for examining the effect of risk mitigation strategies on the performance of floriculture firms in Laikipia County, Kenya.

2.2 Empirical Review

2.2.1 Risk Mitigation Strategies and Performance of Floriculture Firms

Risk mitigation strategies refer to practical actions used by firms to reduce the likelihood, impact, or consequences of identified risks. In agribusiness and floriculture, these strategies include insurance, diversification, irrigation investment, pest and disease control, supplier management, contract arrangements, export compliance systems, staff training, financial controls, quality assurance, and contingency planning. Such strategies are important because flower production depends on timely operations, stable growing conditions, reliable input supply, cold-chain handling, quality consistency, buyer confidence, and compliance with export market requirements (COSO, 2017). Fraser and Simkins (2022) further argued that risk mitigation strengthens performance when risk responses are linked to strategy, internal controls, resource allocation, and performance monitoring.

Empirical evidence from developed and emerging economies shows that structured mitigation practices strengthen organizational performance. Arena et al. (2021) found that enterprise risk management improved control practices, accountability, and organizational decision-making among firms in Italy. Florio and Leoni (2022) established that mature enterprise risk management systems were associated with stronger firm performance because they integrated risk information into strategic planning and operational control. Shad et al. (2021) reported that enterprise risk management contributed to sustainability by improving governance, resource use, and responsiveness to uncertainty. These findings suggest that mitigation strategies are

more effective when embedded in planning, controls, routines, and managerial decision-making.

Agribusiness studies have also emphasized the value of mitigation strategies in reducing operational losses. Kumar and Singh (2022) observed that agribusiness firms that invested in climate adaptation, irrigation planning, pest management, quality assurance, logistics coordination, and supplier controls were better positioned to maintain productivity and market reliability. In horticulture, mitigation strategies reduce post-harvest losses, control product rejection, stabilize input supply, and protect delivery schedules. Mutua and Kibet (2022) further noted that insurance arrangements, financial controls, diversification, staff training, and compliance systems reduce operational losses by improving preparedness, documentation accuracy, responsible chemical use, and adherence to buyer and certification requirements.

Within the Kenyan floriculture sector, risk mitigation is especially important because firms operate under high export standards and concentrated market dependence. Kenya Flower Council (2024) noted that flower firms require strong compliance systems, quality assurance, and sustainability practices to maintain access to export markets. Kenya Flower Council (2025) further reported that the sector remained vulnerable to production costs, freight charges, exchange rate movements, phytosanitary requirements, and changing buyer standards. Njuguna and Ombui (2022) observed that stricter export controls may lead to inspection delays, rejected consignments, and revenue loss where firms fail to maintain strong compliance and pest control systems.

Despite this evidence, several gaps remained. Conceptually, many studies examined enterprise risk management broadly without isolating mitigation strategies as a predictor of performance. Contextually, limited evidence focused on Laikipia County despite its commercial agriculture potential and exposure to water, climate, logistics, and compliance risks. Empirically, few studies linked standard operating procedures, process redesign, diversification, insurance, policy controls, staff training, and contingency planning to floriculture performance outcomes. Methodologically, many studies relied on general descriptive evidence rather than combining descriptive statistics, correlation, and regression analysis (Gitau & Karanja, 2022). Wambua and Muturi (2024) also noted that risk-related agribusiness studies in Kenya remain limited at firm and county levels.

2.3 Conceptual Framework

The conceptual framework illustrates the relationship between the independent and dependent variables, as presented in Figure 1.

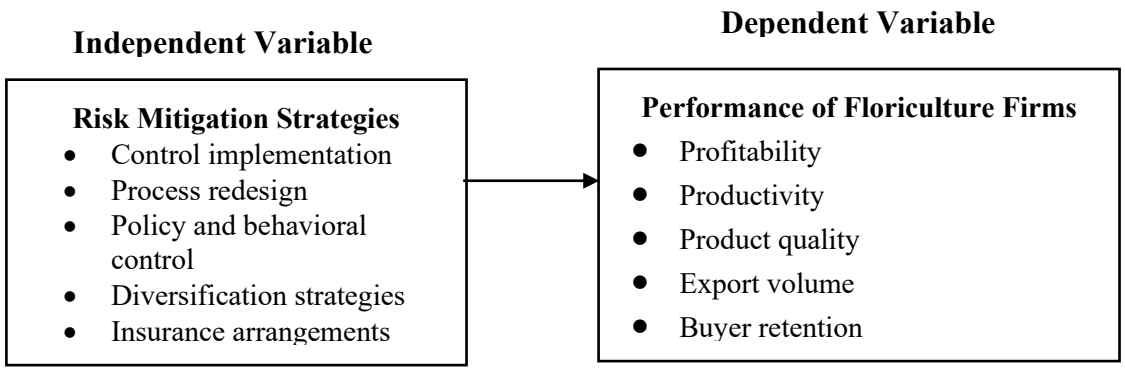

Figure 1: Conceptual Framework

3. Methodology

The study adopted a positivist research philosophy and a quantitative research approach to objectively examine the effect of risk mitigation strategies on the performance of floriculture firms in Laikipia County, Kenya. A descriptive and correlational research design was employed, with the descriptive design used to summarize risk mitigation strategies and firm performance, while the correlational design was used to determine the relationship between risk mitigation strategies and performance of floriculture firms (Kothari & Garg, 2021). Hair et al. (2022) noted that correlational analysis is appropriate where a study seeks to examine the direction and strength of association between measured variables.

The target population comprised 116 managerial and supervisory personnel drawn from 10 floriculture firms in Laikipia County, namely Finlays, Equinox, Batian Farm Ltd, Nyati, Credible Blooms Ltd, Zahara Flowers, Likii Farm, Kariki Farm, Kongoni Farm, and Fresh Gold. The respondents were selected because they possessed relevant knowledge of risk mitigation practices and firm performance. A census approach was used because the target population was finite, clearly defined, and manageable for complete coverage. Data were collected using a structured questionnaire containing demographic information, Likert-scale items on risk mitigation strategies, and ordered-response items on the performance of floriculture firms. A pilot study involving 12 respondents was conducted in neighbouring Meru County to assess instrument clarity, validity, and reliability. Validity was established through expert review, Kaiser-Meyer-Olkin measure, and Bartlett's Test of Sphericity. Reliability was assessed using Cronbach's Alpha, and risk mitigation strategies recorded an alpha coefficient of 0.879, which exceeded the 0.70 threshold (Hair et al., 2022).

The collected data were coded, cleaned, entered into SPSS Version 27, and analyzed using descriptive and inferential statistics. Descriptive statistics summarized the study variables, while Pearson Product Moment Correlation and simple linear regression examined the relationship and predictive effect of risk mitigation strategies on the performance of floriculture firms. Statistical significance was evaluated at the 5% level.

4. Results and Discussion

4.1 Response Rate

A total of 116 questionnaires were administered to the targeted respondents. Out of these, 96 questionnaires were completed and returned, representing a response rate of 82.8%, while 20 questionnaires were not returned, representing 17.2%. The response rate was considered adequate for statistical analysis because it exceeded the 70% threshold commonly regarded as acceptable in survey research (Babbie, 2021). The high response rate was attributed to prior authorization, use of self-administered questionnaires, confidentiality assurance, and follow-up during data collection. The returned questionnaires were screened for completeness and consistency, and all 96 were found suitable for analysis.

Table 1: Response Rate

Response Category	Frequency	Percentage (%)
Returned questionnaires	96	82.8
Unreturned questionnaires	20	17.2
Total distributed questionnaires	116	100.0

4.2 Descriptive Analysis of Risk Mitigation Strategies

The study examined respondents' perceptions of risk mitigation strategies using six statements measured on a five-point Likert scale. Mean scores were interpreted as follows: 4.21–5.00 represented strongly agree, 3.41–4.20 represented agree, 2.61–3.40 represented neutral, 1.81–2.60 represented disagree, and 1.00–1.80 represented strongly disagree (Hair et al., 2022). The findings are presented in Table 2.

Table 2: Descriptive Analysis of Risk Mitigation Strategies

Statement	Mean	Std. Dev.
The firm has documented standard operating procedures and internal controls for managing major risks.	4.16	0.71
The firm has redesigned processes through backup irrigation, alternative logistics, or technology automation.	3.98	0.83
The firm uses policies and training programmes to guide risk-aware decision-making among employees.	4.07	0.77
The firm uses diversification strategies such as market, product, crop, or supplier diversification.	3.82	0.91
The firm uses insurance arrangements to reduce financial losses arising from major risks.	3.64	0.97
The firm has contingency plans for responding to emergencies, disruptions, or unexpected operational risks.	4.02	0.80
Composite Mean	3.95	0.83

The findings in Table 2 show that respondents generally agreed that floriculture firms practiced risk mitigation strategies, as indicated by a composite mean of 3.95. The highest-rated item was the existence of documented standard operating procedures and internal controls for managing major risks. This suggests that many firms used formal controls to guide production, quality assurance, compliance, and operational decisions. Respondents also agreed that firms used policies and training programmes to guide risk-aware decision-making among employees. This indicates that employee awareness and behavioural controls formed an important part of risk mitigation practice (COSO, 2017). Fraser and Simkins (2022) similarly observed that risk responses are more effective when linked to internal controls, resource allocation, and performance monitoring.

The findings further showed that firms had contingency plans for responding to emergencies and unexpected operational disruptions. This implies that floriculture firms recognized the importance of preparedness in situations where delays, pest outbreaks, water interruptions, logistics failures, and compliance issues could affect product quality and export reliability. Process redesign through backup irrigation, alternative logistics, and technology automation was also practiced, although less consistently than standard operating procedures. Mutua and Kibet (2022) noted that horticultural firms require practical mitigation measures to reduce

operational losses, while Kiptoo and Langat (2024) found that operational risks influence production efficiency, delivery reliability, quality compliance, and profitability.

Diversification strategies and insurance arrangements recorded comparatively lower mean scores, although respondents still agreed that they were used. This implies that diversification and insurance were practiced but less consistently implemented than internal controls and staff training. Qualitative responses supported the quantitative findings. One respondent stated, "Risk mitigation has helped the firm reduce losses because staff knows what to do when production or shipment problems occur." Another observed, "Backup irrigation and pest control measures have protected flower quality during dry periods and disease pressure." A further respondent noted, "Training employees on compliance and quality requirements has reduced mistakes during grading, packaging, and documentation." These responses show that mitigation strategies improved preparedness, protected quality, and reduced operational errors. Shad et al. (2021) similarly reported that enterprise risk management contributes to sustainability by improving governance, resource use, and responsiveness to uncertainty.

The findings are consistent with empirical literature indicating that mitigation strategies reduce operational disruption and support firm performance by protecting resources, maintaining continuity, and improving responsiveness to uncertainty. The findings also agree with Enterprise Risk Management Theory, which views risk response as a central mechanism through which firms reduce exposure to threats affecting strategic and operational objectives. In addition, the results support Contingency Theory because mitigation strategies reflected the operating realities of floriculture firms, including water risks, compliance pressure, pest control, logistics dependence, and quality requirements (Arena et al., 2021). Florio and Leoni (2022) also established that mature enterprise risk management systems improve firm performance when risk information is integrated into strategic planning and operational control.

4.3 Descriptive Analysis of Performance of Floriculture Firms

Respondents were asked to indicate the level of performance experienced by their firms over the previous three years. The dependent variable was measured using five ordered response categories, where 1 = Declined, 2 = No Change, 3 = Slight Increase, 4 = Moderate Increase, and 5 = High Increase (Hair et al., 2022). The findings are presented in Table 3.

Table 3: Descriptive Analysis of Performance of Floriculture Firms

Statement	Mean	Std. Dev.
The firm's profitability has improved over the last three years.	3.82	0.88
The firm's productivity has improved over the last three years.	3.94	0.81
The firm's product quality has improved over the last three years.	4.16	0.72
The firm's export volume has increased over the last three years.	3.76	0.92
The firm's buyer retention has improved over the last three years.	4.05	0.78
The firm's sustainability compliance has improved over the last three years.	4.21	0.69
Composite Mean	3.99	0.80

The findings in Table 3 show that floriculture firms had experienced improved performance over the previous three years, as reflected by a composite mean of 3.99. Sustainability compliance recorded the highest mean score, suggesting that firms had strengthened adherence to environmental, labour, certification, and export requirements. Product quality also recorded a high mean score, indicating that respondents perceived quality consistency as a major area of improvement. These outcomes are important because sustainability compliance and product quality influence buyer retention, export acceptance, and market credibility (Kenya Flower Council, 2025). Kenya National Bureau of Statistics (2025) further identified flowers as a major component of Kenya's horticultural export performance.

Buyer retention, productivity, profitability, and export volume also improved, although export volume recorded the lowest mean among the performance indicators. This suggests that while firms had improved internal and market-related outcomes, export expansion remained more sensitive to external conditions such as buyer demand, logistics capacity, freight costs, market concentration, and compliance requirements. The qualitative responses reinforced the quantitative findings. One respondent stated, "The practices that have helped performance most are pest control, irrigation planning, compliance training, and quality checks before shipment." Another reported, "Contingency planning has helped the firm continue operations when transport or production disruptions occur." A further respondent observed, "Insurance and financial controls have reduced the effect of losses when unexpected risks affect production or exports." These responses show that risk mitigation practices contributed to operational continuity, quality improvement, and loss reduction. Njuguna and Ombui (2022) similarly noted that compliance requirements and production costs affect performance among Kenyan flower firms. AP News (2025) also reported that export inspection pressures increased the need for strong compliance and quality control systems.

The findings are consistent with literature showing that floriculture performance is multidimensional and includes profitability, productivity, product quality, buyer retention, delivery reliability, and sustainability compliance. Grand View Research (2025) linked floriculture competitiveness to quality, market responsiveness, and sustainable production. International Trade Centre (2024) also emphasized that export performance depends on reliable supply chains, market access, and compliance with trade requirements. This implies that performance improvement among floriculture firms depends not only on production capacity but also on the ability to manage operational, financial, logistical, market, and environmental risks.

4.4 Bivariate Correlation Analysis

Pearson Product Moment Correlation analysis was conducted to determine the direction and strength of the relationship between risk mitigation strategies and performance of floriculture firms. Correlation coefficients range from -1 to +1, where positive values indicate direct relationships and negative values indicate inverse relationships. According to Cohen (1988), correlation coefficients ranging from 0.10 to 0.29 are weak, 0.30 to 0.49 are moderate, and 0.50 to 1.00 are strong. Hair et al. (2022) noted that correlation analysis is appropriate for determining the degree of association between continuous study variables. The findings are presented in Table 4.

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Table 4: Pearson Correlation Matrix

Variables	1	2
1. Risk Mitigation Strategies	1	
Sig. (2-tailed)	—	
2. Performance of Floriculture Firms	.642**	1
Sig. (2-tailed)	.000	—

Correlation is significant at the 0.01 level (2-tailed).

The findings in Table 4 show that risk mitigation strategies had a strong, positive, and statistically significant relationship with performance of floriculture firms ($r = 0.642$, $p = 0.000$). This implies that improvements in risk mitigation strategies were associated with improvements in firm performance. Therefore, floriculture firms that strengthened internal controls, process redesign, employee training, diversification, insurance arrangements, and contingency planning were more likely to report better performance outcomes. The results further suggest that practical mitigation measures helped firms reduce losses, maintain operational continuity, protect product quality, and support export compliance.

4.5 Bivariate Linear Regression Analysis

Simple linear regression analysis was conducted to determine the effect of risk mitigation strategies on performance of floriculture firms. The analysis produced the model summary, analysis of variance, and regression coefficients. Regression analysis was appropriate because it estimated the extent to which risk mitigation strategies predicted changes in firm performance (Kothari & Garg, 2021). Hair et al. (2022) further noted that regression analysis is useful in determining the magnitude and statistical significance of relationships between predictor and outcome variables.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.642[a]	.412	.406	0.387

a. Predictors: (Constant), Risk Mitigation Strategies

The findings in Table 5 show that risk mitigation strategies recorded a correlation coefficient of 0.642, indicating a strong positive relationship with the performance of floriculture firms. The coefficient of determination was 0.412, implying that risk mitigation strategies explained 41.2% of the variation in performance of floriculture firms. The remaining 58.8% was explained by other factors outside the bivariate regression model.

Table 6: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.888	1	9.888	65.876	.000[b]
Residual	14.112	94	0.150		
Total	24.000	95			

b. Dependent Variable: Performance of Floriculture Firms

The findings in Table 6 indicate that the regression model was statistically significant ($F = 65.876$, $p = 0.000$). This means that risk mitigation strategies significantly predicted the performance of floriculture firms. Therefore, the model was suitable for explaining the relationship between risk mitigation strategies and firm performance.

Table 7: Regression Coefficients for Risk Mitigation Strategies

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	1.654	0.295		5.607	.000
Risk Mitigation Strategies	0.594	0.073	0.642	8.117	.000

a. Dependent Variable: Performance of Floriculture Firms

The findings in Table 7 show that risk mitigation strategies had a positive and statistically significant effect on the performance of floriculture firms ($\beta = 0.642$, $t = 8.117$, $p = 0.000$). This implies that improvements in risk mitigation strategies were associated with improvements in firm performance. Consequently, the null hypothesis stating that risk mitigation strategies have no statistically significant effect on the performance of floriculture firms in Laikipia County, Kenya, was rejected.

The findings suggest that firms that implemented documented controls, redesigned processes, trained employees, diversified markets and suppliers, used insurance, and prepared contingency plans were better positioned to protect performance. These strategies reduced operational disruption, consignment rejection, wastage, financial losses, and compliance failures. The results are consistent with Enterprise Risk Management Theory, which posits that structured risk responses support value protection, decision-making, and organizational performance (COSO, 2017). Beasley and Branson (2022) similarly argued that enterprise risk management enhances organizational resilience and performance improvement under uncertainty.

The findings also support Contingency Theory because mitigation strategies were useful when aligned with the firm's operating risks, including climate, water, pest, logistics, and regulatory uncertainty. Further, Resource-Based View Theory explains that mitigation capability may become a valuable organizational capability that strengthens competitiveness and resilience. The findings agree with Arena et al. (2021), who established that enterprise risk management improves control practices, accountability, and decision-making. Florio and Leoni (2022) also found that mature enterprise risk management systems improve firm performance when risk information is integrated into planning and operational control. Similarly, Shad et al. (2021)

reported that enterprise risk management supports sustainability through better governance, resource use, and responsiveness to uncertainty.

5. Conclusion

The study concluded that risk mitigation strategies had a positive and statistically significant effect on the performance of floriculture firms in Laikipia County, Kenya. The findings showed that firms that applied standard operating procedures, internal controls, process redesign, staff training, diversification, insurance, and contingency planning were better positioned to improve profitability, productivity, product quality, export volume, buyer retention, and sustainability compliance. Therefore, risk mitigation strengthened operational continuity, reduced losses, supported export compliance, protected product quality, and enhanced firm resilience.

6. Recommendations

Floriculture firm managers should strengthen documented standard operating procedures and internal controls for major risks affecting production, quality assurance, logistics, finance, compliance, and sustainability. Firms should also invest in process redesign through backup irrigation systems, alternative logistics arrangements, greenhouse monitoring technologies, and automation where feasible. These measures would reduce operational disruptions and protect flower quality during periods of water scarcity, pest pressure, transport delays, or export compliance changes.

Firms should enhance diversification strategies by reducing overdependence on single buyers, export destinations, suppliers, transport channels, or product lines. Insurance arrangements should also be strengthened to cushion firms against major financial losses arising from climate events, rejected consignments, logistics failures, and production disruptions. In addition, staff training should be institutionalized so that employees understand risk-aware decision-making, export documentation, quality assurance, chemical-use protocols, and sustainability requirements.

The Laikipia County Government, Ministry of Agriculture, Kenya Flower Council, export agencies, certification bodies, financial institutions, and development partners should support floriculture firms through training, compliance advisory services, affordable risk financing, climate adaptation support, market intelligence, and infrastructure improvement. Such interventions would improve resilience, strengthen competitiveness, and enhance the sustainability of floriculture firms within national and export value chains.

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