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Revisiting the Risk Management of Agricultural Entrepreneurs in Davao Oriental: A Multiple-Case Study

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Abstract

Agricultural entrepreneurs in the Philippines continue to face persistent risks that undermine productivity and resilience, yet most rely on traditional coping practices that are insufficient against large-scale disturbances. In Davao Oriental, where diverse enterprises such as crop farming, livestock, agro-processing, and aquaculture operate, there remains a gap in understanding how agripreneurs manage risks across different sectors and what strategies sustain their operations. This study aimed to explore and analyze the risk management operations of agricultural entrepreneurs through a qualitative multiple-case design. Five cases were purposively selected, and data were gathered through in-depth interviews, triangulated with observations and stakeholder validation. Thematic and cross-case analyses revealed four major themes of risk: human resource, financial and market, legal and institutional, and operational. Common challenges included shortages of skilled labor, unstable commodity prices, costly regulatory requirements, and vulnerability to severe weather, while sector-specific differences emerged, such as livestock farmers' emphasis on reliable workers, aquaculture's exposure to predatory animals and water fluctuations, and agro-processors' struggles

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with logistics and biosafety. Despite these vulnerabilities, entrepreneurs demonstrated resilience through diversification, cooperative networks, climate-smart practices, and resource sharing. The study concludes that risk management among agricultural entrepreneurs in Davao Oriental is not only about mitigating losses but also about sustaining livelihoods and building resilience, offering contextual insights that can inform policy, extension services, and future research.

Keywords: *agriculture, business management, entrepreneurs, resilience, risk management, sustainability*

Introduction

Risk management is a systematic approach that enables firms to identify, assess, and mitigate potential hazards to their operational stability. In agriculture, this process is particularly critical because enterprises rely heavily on environmental conditions and volatile markets. Scholars such as Rossinskaya (2019) and Nezamova and Olentsova (2021) emphasize that agricultural enterprises face significant risks due to their dependence on natural and socio-economic factors. Patlatiuk (2020) further notes that continuous research is necessary to address challenges posed by biological, technical, and financial uncertainties. Globally, the absence of formal risk management instruments, including insurance and credit, exposes agricultural businesses to market fluctuations and climate change, increasing their vulnerability to financial instability and production losses (Hellmuth & Moore, 2015; Chaves et al., 2020).

In the Philippines, agriculture remains vital, yet erratic market circumstances and destructive weather patterns threaten its sustainability. Garcia and Diola (2016) observed that Filipino agricultural entrepreneurs often rely on traditional practices such as crop diversification and cooperative community networks. While these methods provide some protection, they are insufficient against large-scale disturbances. In Davao Oriental, entrepreneurs encounter risks across production, market, environmental, operational, and regulatory domains (Dela Cruz, 2018; Torres et al., 2019). The diversity of agricultural activities in the province which includes crops, livestock, agro-processing, and aquaculture. This makes risk management particularly complex. Although awareness of formal tools is growing, many farmers continue to depend on basic practices that fail to provide adequate protection (Davao City Development Council, 2020).

Risk management operations are essential for agricultural entrepreneurs in Davao Oriental, especially given the sector's role in supporting multiple Sustainable Development Goals (SDGs). These include poverty reduction (SDG 1), food security (SDG 2), and economic resilience (SDG 8). Effective strategies such as crop diversification, insurance, and sustainable farming protect small-scale agripreneurs from losses caused by climate change, market fluctuations, and natural disasters (UNDP, 2017; FAO, 2016). National policy frameworks, such as the Philippine Development Plan 2017–2022, aim to strengthen agricultural resilience through integrated risk management systems, but financial restrictions and limited public awareness hinder implementation.

Theoretical perspectives provide valuable lenses for analyzing risk management practices. The Integrated Risk Management Framework (Hardaker et al., 2015) highlights the need to combine financial, production, environmental, and market strategies into cohesive systems. Slovic's (1987) Risk Perception Theory explains how entrepreneurs evaluate and respond to hazards based on personal experiences and perceptions. Barney's (1991) Resource-Based View underscores the importance of internal resources such as networks, technology, and capital in building resilience and competitive advantage. Together, these frameworks guide the analysis of risk management among agricultural entrepreneurs in Davao Oriental.

The primary objective of this study was to explore and analyze the risk management operations of agricultural entrepreneurs in Davao Oriental through a multiple-case study approach. It further aimed to identify common challenges, sector-specific differences, and adaptive strategies that contribute to resilience in agribusiness.

Methodology

Research Design

This study used a qualitative multiple-case design to examine risk management among agricultural entrepreneurs in Davao Oriental. Five cases were purposively selected to represent crop-based farming, mixed farming, agro-processing, livestock raising, and aquaculture (Yin, 2018; Patton, 2015).

Participants

Participants were identified with the assistance of local agricultural officers and selected based on their experience and relevance to the study. Each entrepreneur had at least five years of practice in their sector, ensuring credible insights. Maximum variation sampling was used to capture diverse perspectives across different agricultural enterprises (Patton, 2015).

Data Collection

Permission was sought from the Dean of the Graduate School, and clearance was obtained from the University of the Immaculate Conception Research Ethics Committee. Prospective participants received letters of invitation and informed consent forms. Once they confirmed participation, interviews were scheduled at convenient venues, including their homes when preferred, to ensure comfort and confidentiality.

Data were gathered through in-depth interviews lasting approximately 45 minutes per case unit. This approach elicited detailed accounts of participants' experiences, strategies, and decision-making processes. Probing questions were used to explore deeper insights, and rapport was established to foster trust and openness. Triangulation was achieved by validating responses with family members, co-farmers, and agricultural officers, strengthening the credibility of findings (Creswell & Poth, 2018).

All interviews were audio-recorded with consent, transcribed verbatim, and supplemented with field notes. A coding system was employed to ensure anonymity, in compliance with the Data Privacy Act of 2012. Data were stored securely and scheduled for deletion one year after study completion.

Data Analysis

Transcripts and notes were repeatedly reviewed to capture participants' voices and meanings (Caulfield, 2019). Line-by-line coding was conducted to identify recurring ideas and significant

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experiences. Thematic analysis followed Braun and Clarke's (2006) framework, generating four major themes: 1) human resource risk, 2) financial and market risk, 3) legal and institutional risk, and 4) operational risk. Cross-case analysis was then applied to compare similarities and differences across the five cases (Miles, Huberman, & Saldaña, 2014). This approach highlighted universal challenges such as labor shortages and price volatility, while also revealing sector-specific issues such as biosecurity in aquaculture and logistics in agro-processing.

Role of the Researcher

As the primary instrument of data collection and analysis, the researcher conducted interviews, coded transcripts, and compared cases. Reflexivity was practiced to minimize bias, and confidentiality was strictly maintained. The researcher's role was to faithfully represent participants' experiences while generating actionable insights for agricultural resilience.

Ethical Considerations

The study was reviewed and approved by the University of the Immaculate Conception Research Ethics Committee under Protocol Code GS-ER-06-25-0306. Participants were fully informed of their rights, including voluntary participation, confidentiality, and the option to withdraw at any time. Informed consent was obtained before each interview, and data handling complied with institutional and national ethical standards.

Ethical Considerations

Approval was granted by the University of the ImmaculateConception Research Ethics Committee under protocol code GS-ER-06-25-0306. Informed consent was obtained, confidentialitymaintained, and participants were free to withdraw at any time.Member checking and debriefing ensured accuracy.

Results

The study generated four major themes of risks experienced by agricultural entrepreneurs in Davao Oriental: human resource, financial and market, legal and institutional, and operational risks. Table 1 shows the four themes that emerged from the cross-case analysis of five agricultural enterprises: crop-based farming, mixed farming, agro-processing, livestock raising, and aquaculture.

Table 1. Thematic analysis of the similarities and differences across five cases of agricultural entrepreneurs.

Themes	Similarities Across Cases	Differences Across Cases
Human Resource Risk	Most entrepreneurs reported a lack of skilled workers (A, C, D).	One emphasized the shortage of reliable workers (D).
Financial and Market Risk	All struggled with unstable commodity prices affecting income.	One lacked resources to address extreme weather (A).
Legal and Institutional Risk	Costly and redundant requirements for permits and FDA registration (A, B, C).	Lack of coordinated stakeholder efforts and cohesive policies (B, D).
Operational Risk	All experienced severe weather impacts and most lacked modern facilities (B, C, D).	One faced logistics and biosafety challenges, another dealt with predatory animals (C, E).

Discussion

The results of this study revealed four major themes of risk experienced by agricultural entrepreneurs in Davao Oriental: human resource, financial and market, legal and institutional, and operational risks. Each theme was evident across cases, but sector-specific differences highlighted how context shapes vulnerability and coping strategies.

Human Resource Risk

The crop based farmer (Case A), agro processor (Case C), and livestock farmer (Case D) all struggled with the lack of skilled workers. Case D emphasized reliability, underscoring the higher stakes in livestock management where trustworthy labor is essential for animal care. These findings confirm Ryan (2023) and Briones (2022), who argue that productivity in rural agricultural communities is compromised by shortages in labor and inadequate training. Globally, Qorri, Szabó, Felföldi, and Kovács (2024) note that adoption of modern technologies is hindered by the lack of trained personnel, while Singh (2023) highlights that seasonal employment patterns and limited resources make sustainable HRM practices difficult to implement. Yakin (2023) further stresses that human capital remains vital, but its potential is constrained by declining interest among younger generations. The reliance on family and temporary workers in Davao Oriental reflects these broader challenges.

Financial and Market Risk

All entrepreneurs faced unstable commodity prices, directly affecting their income. Case A was most vulnerable to extreme weather due to limited financial resources, while others attempted diversification into crops, livestock, or processing. Still, capital constraints limit their options. These findings align with Smith et al. (2022) and Magat and Dela Cruz (2023), who emphasize that smallholders struggle to recover from shocks. This was due to unstable markets and inefficient financing mechanisms. The results show that while diversification is a crucial risk mitigation strategy, it requires capital that is not always accessible, leaving many agripreneurs exposed to climatic and market pressures.

Legal and Institutional Risk

Legal and institutional challenges were evident across cases. The crop-based farmer (Case A), livestock farmer (Case B), and agro-processor (Case C) described costly and redundant requirements for permits and FDA registration. Meanwhile, Cases B and D highlighted fragmented policies and weak stakeholder coordination, which hindered collective growth. These findings support the studies of Nguyen et al. (2023) and Cruz and Ladera (2024). They found that regulatory inefficiencies are major obstacles to agribusiness development in the Philippines. The results confirm that bureaucratic processes are systemic barriers, discouraging innovation and slowing expansion, particularly for small-scale enterprises.

Operational Risk

Operational risks were shared across enterprises, with severe weather affecting crops and livestock alike. Case D faced unpredictable soil conditions, Case E dealt with predatory animals

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and water fluctuations, and Case C struggled with logistics and biosafety tied to product quality. These findings are consistent with Ochieng et al. (2023) and Armingol and Sagarino (2025), who observed that their competitiveness is weakened due to operational bottlenecks. The inability to adopt modern facilities due to capital shortages further compounded these risks. Despite these challenges, entrepreneurs demonstrated resilience by adopting adaptive strategies such as resource sharing, cooperative networks, and schedule adjustments, reflecting the long-term resourcefulness of Filipino agricultural entrepreneurs.

Conclusion

This qualitative multiple-case study explored the risk management operations of agricultural entrepreneurs in Davao Oriental, revealing four interconnected themes: human resource, financial and market, legal and institutional, and operational risks. Across cases, common challenges include shortages of skilled labor, unstable commodity prices, costly regulatory requirements, and vulnerability to severe. Sector-specific differences emerged among livestock farmers' need for reliable workers, aquaculture's exposure to predatory animals and water fluctuations, and agro-processors' struggles with logistics and biosafety. Despite these vulnerabilities, entrepreneurs demonstrated resilience through diversification, cooperative networks, climate-smart practices, and resource sharing, showing that risk management is not only about mitigating losses but also about sustaining livelihoods and building resilience in the face of uncertainty.

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