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RISK MANAGEMENT ANALYSIS FOR POULTRY EGG BUSINESS OPERATORS

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Abstract

Risk management is a critical element in ensuring business sustainability, including in the agribusiness sector such as poultry egg production. This study aims to analyze the risk management practices undertaken by poultry egg business operators, focusing on risk identification, assessment, and mitigation strategies. The research employs a qualitative descriptive approach, with data collected through in-depth interviews, direct observation, and document review. The findings reveal that the main risks faced by poultry egg operators include market price fluctuations, poultry diseases, feed price increases, and distribution disruptions. Business operators tend to manage risks reactively, with mitigation strategies such as product diversification, feed stockpiling, and the use of poultry health technologies. This study recommends the adoption of more structured risk management strategies, including data driven risk analysis, agribusiness insurance, and collaboration with stakeholders. These findings are expected to assist business operators in enhancing sustainability and competitiveness amid uncertainties in the agribusiness industry.

Keywords: risk management, poultry eggs, mitigation, sustainability

Introduction

The poultry egg farming sector in Indonesia plays a vital role in meeting food needs, particularly providing animal protein for the population. Additionally, this sector significantly contributes to the national economy through job creation and increased income for farmers and local entrepreneurs. According to data from the Central Statistics Agency (BPS), the livestock sector, particularly egg production, has consistently shown stable figures in supplying domestic demand (Putri & Wibowo, 2022). However, amidst this growth, business operators face complex challenges from both internal and external factors.

Internal risks include fluctuations in feed prices, high operational costs, and the potential for disease outbreaks that directly affect poultry productivity (Santoso & Hardi, 2021; Hidayat, 2021). On the other hand, external risks such as changes in government regulations, market instability, and natural disaster threats add significant pressure on the sustainability of poultry egg farming businesses (Widjaja & Prasetyo, 2021; Wulandari, 2022). Poorly managed risks can have negative impacts on business stability, potentially leading to substantial financial losses (Handayani & Kurniawan, 2020).

Risk management serves as a strategic approach to addressing these challenges. The process involves identifying, analyzing, and mitigating risks to minimize their negative impact on business continuity (Bintoro, 2023; Susanto, 2020). In the context of poultry egg farming, the implementation of effective risk management strategies not only helps businesses withstand uncertainties but also improves operational efficiency and market competitiveness (Kurniawan, 2023; Suharto & Yulianto, 2023). However, risk management practices in this sector remain relatively limited and unstructured, often failing to provide optimal protection against the threats faced (Santoso & Hardi, 2021).

This study aims to identify the types of risks encountered by poultry egg business operators, evaluate their impacts on business sustainability, and analyze the mitigation strategies employed by these operators. The findings are expected to formulate a more comprehensive risk management approach, ultimately contributing to enhancing competitiveness and sustainability in the poultry egg farming sector in Indonesia (Suharto & Yulianto, 2023; Wulandari, 2022).

Poultry Egg Business

The poultry egg industry in Indonesia is a crucial subsector of the livestock sector, significantly contributing to food security and the national economy. Poultry egg production involves various factors, including feed, poultry breeding stock, maintenance facilities, and labor. Proper management of these

factors is essential to produce eggs of optimal quality and quantity. Furthermore, business operators must minimize production costs to maintain profitability (Kurniawan, 2023).

However, poultry egg businesses in Indonesia face several operational challenges. One of the most significant risks is the fluctuation in livestock feed prices, which can severely affect profit margins. Additionally, poultry health is a critical factor determining the success of this business. Disease outbreaks, such as avian influenza, can cause substantial losses for farmers. Hence, effective risk management is crucial to ensure the sustainability of poultry egg businesses (Santoso & Hardi, 2021).

External factors, such as changes in government regulations and market conditions, also influence the dynamics of the poultry egg industry. For instance, government policies related to pricing or distribution can impact the competitiveness of poultry egg products in the market. Natural disasters, such as floods or extreme weather conditions, may disrupt feed supplies or product distribution. To navigate these uncertainties, business operators must adopt effective and efficient mitigation strategies (Handayani & Kurniawan, 2020)

Research Methodology

The research methodology used in this study is a descriptive method. The descriptive approach was chosen because it allows the researcher to gain an in-depth understanding of the risk management practices implemented by the poultry egg entrepreneur, Mr. Reza, who operates in the Semarang area, Central Java. This approach enables the researcher to explore the factors influencing Mr. Reza's business success and the challenges he faces, as well as the strategies he employs to manage risks in his business operations (Kurniawan, 2023). With this method, the research aims to provide a comprehensive picture of the dynamics of Mr. Reza's poultry egg business and how risk management is applied in practice.

The main steps in this research methodology include in-depth interviews, observations, and documentation studies. In-depth interviews were conducted with Mr. Reza, the owner of the poultry egg business, as well as several workers directly involved in the operations. These interviews aimed to explore further the strategies Mr. Reza applies to manage potential risks, as well as his experiences with market price fluctuations, livestock health issues, and other external factors affecting his poultry egg business (Suharto & Yulianto, 2023). Field observations were also conducted at Mr. Reza's business location to directly observe operational activities, feed management, and the condition of the chickens, which could provide insights into the practical risk management of the business (Rahman & Setiawan, 2023).

In addition to interviews and observations, a documentation study was conducted by collecting documents related to risk management, such as production reports, financial records, and relevant market data for Mr. Reza's poultry egg business. Data obtained from these various sources were then analyzed holistically using a descriptive approach, thematic analysis, and interpretation. This analysis process aims to provide a detailed depiction of the risk management practices applied by Mr. Reza, as well as to identify patterns or themes that emerge in the management of risks related to the operations of the poultry egg business in Semarang. It is expected that this study will provide a deeper understanding of the application of risk management in the poultry egg sector in Indonesia (Kurniawan, 2023).

Result and Discussion

Risk Identification

The egg farming industry faces various challenges, such as feed price fluctuations, the risk of disease outbreaks, and extreme weather conditions, which can disrupt business sustainability. According to Hyline (2023), heat stress can lead to a decline in egg quality, including reduced weight and shell thickness, directly impacting production outcomes. Addressing heat stress requires implementing effective temperature management strategies within poultry housing.

Podomoro Feedmill (2023) also highlights the importance of mitigating the effects of summer on layer chickens by ensuring optimal ventilation, providing high-quality feed, and maintaining an adequate water supply. These efforts help sustain the performance of layer chickens during extreme summer conditions. These strategies align with the mitigation measures suggested by Handayani & Kurniawan (2020) for maintaining livestock productivity and product quality.

Feed price fluctuations, influenced by weather, raw material costs, and government policies, often significantly increase operational expenses (Bintoro, 2023). Additionally, disease outbreaks such as avian influenza can cause substantial losses due to their rapid spread (Hidayat, 2021). To manage these risks, farmers like Mr. Reza must carefully manage cash flow, maintain feed quality, and regulate temperature and ventilation in poultry houses (Handayani & Kurniawan, 2020). Mitigation measures, such as monitoring temperatures, ensuring good ventilation, and providing a consistent water supply, are crucial

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for maintaining the productivity of layer chickens and the quality of their eggs.The table below provides an overview of the identified risks faced by Mr. Reza as an egg farmer in Semarang, Central Java. These risks have been outlined to aid in the development of effective risk management strategies.

Table 1. Risk Identification

Risk Aspect	Description
Weather Risk	Unpredictable weather changes, such as heavy rain, extreme temperatures, or drought, can damage the quality of chickens, the henhouse, and disrupt feed supply.
Capital Risk	Fluctuations in egg prices in the market, high operational costs, and limited access to capital can hinder business sustainability.
Operational Risk	Delays in feed supply, chicken damage due to disease outbreaks, and disruptions in egg distribution to the market can affect operational continuity.
Competition Risk	Intense competition with other farmers offering lower prices or better product quality can reduce market share.
Poultry Health Risk	Diseases affecting laying hens, such as avian influenza or salmonella, can cause mass deaths and a decline in egg production quality.
Regulatory Risk	Changes in government policies related to farming regulations, such as price policies or environmental regulations, can alter operational costs and production processes
Technology Risk	Limitations in farming technology, such as suboptimal monitoring systems for chickens or feed management, can reduce production efficiency.
Natural Disaster Risk	Natural disasters, such as floods or earthquakes, can damage production facilities and cause significant financial losses

Based on the identified risk table, it can be concluded that the poultry egg business faces various internal and external risks. Weather risks, such as heavy rain or extreme temperatures, can damage the quality of chickens and feed supply, while operational risks like delays in supply and disruptions in egg distribution can hinder the smooth operation of the business. The intense competition with other farmers and fluctuations in egg prices in the market also have the potential to affect profits and market share.

Additionally, poultry health and financial risks are critical aspects to consider, as they can significantly impact productivity and business sustainability. Equally important are regulatory and technological risks that can affect operational costs and production efficiency. While natural disasters are less frequent, they can cause substantial damage if not properly prepared for.

Therefore, it is essential for poultry egg business operators to identify, mitigate, and manage these various risks with appropriate strategies, such as feed source diversification, the implementation of efficient technologies, and preparation for policy changes or natural disasters. With effective risk management, poultry egg businesses can be more resilient to challenges and have the potential for sustainable growth.

Risk Analysis Risk Ranking Based on the Likelihood of Occurrence

Mr. Reza faces numerous challenges in his egg farming business, particularly fluctuating feed prices and competition with other farmers. The instability of feed prices poses a major challenge, as rising operational costs often do not align with the revenue generated. Careful cash flow management is essential to ensure the smooth operation of the business (Bintoro, 2023; Medion, 2023). Additionally, extreme weather conditions, such as prolonged heat waves, exacerbate the situation by increasing the risk of heat stress in chickens. According to Hyline (2023), heat stress can reduce egg quality, including weight and shell thickness, making effective temperature management within the poultry house crucial for maintaining productivity.

Despite price competition, Mr. Reza remains focused on egg quality as his primary selling point. As noted by Putri and Wibowo (2022), product quality can attract health-conscious consumers, even if the prices are relatively higher. To maintain this quality, mitigation measures such as ensuring proper ventilation, providing high-quality feed, and maintaining a sufficient water supply are top priorities

(Podomoro Feedmill, 2023). By combining effective cash flow management with a focus on quality, Mr. Reza can enhance the competitiveness of his business amid various challenges.

To address these challenges, Mr. Reza must implement risk management strategies that include cost control and financial analysis. Hidayat (2021) emphasizes the importance of financial planning and regular cash flow monitoring to mitigate rising costs. Additionally, break-even point analysis can help determine the profitability threshold and margins across different pricing and cost levels (Suharto & Yulianto, 2023). By relying on product quality and sound financial management, Mr. Reza can sustain his business amidst market uncertainties.

Tabel 2. Risk Rank

Risk Aspect	Rank
Weather Risk	High Risk
Capital Risk	Medium Risk
Operational Risk	Medium Risk
Competition Risk	Medium Risk
Poultry Health Risk	High Risk
Regulatory Risk	Low Risk
Technology Risk	Low Risk
Natural Disaster Risk	Low Risk

The interpretation of the risk ranking table shows that weather risks and poultry health risks fall under the High Risk category. This is because both risks have a high likelihood of occurring and could have a significant impact on the operations of the poultry business. Unpredictable weather conditions, such as heavy rain or extreme temperatures, can damage the quality of feed and the health of the chickens, while diseases in poultry can lead to a decline in productivity or even mass death.

Meanwhile, capital risk, operational risk, and competition risk are categorized as Medium Risk. These risks occur relatively frequently, but their impact can still be managed with effective strategies, such as diversifying funding sources or improving operational efficiency. Natural disaster risks and regulatory risks are classified as Low Risk, meaning that while their impact could be substantial if they occur, their frequency is relatively low and can be mitigated through appropriate policies.

Risk Percentage Based on the Likelihood of Occurrence

Mr. Reza explained, "The likelihood of weather and poultry health risks occurring is 40% and 35%, respectively. Poor weather greatly affects feed quality and coop temperature, while poultry health issues, if not addressed promptly, can lead to significant losses."

Below is a table illustrating the percentage likelihood of events occurring based on each risk aspect in the egg farming business.

Tabel 3. Percentage Risk

Risk Aspect	Variabel	Percentage
Weather Risk	Extreme weather conditions	40%
Capital Risk	Fluctuations in prices and operational costs	25%
Operational Risk	Supply delays or equipment damage	20%
Competition Risk	Market competition	30%
Poultry Health Risk	Likelihood of diseases in poultry	35%
Regulatory Risk	Changes in government policies	10%
Technology Risk	Delays in technology adoption	10%
Natural Disaster Risk	Damage from natural disasters	10%

The risk percentage table indicates that weather risks and poultry health risks have higher percentages (40% and 35%, respectively), meaning that both are frequent risks that require primary attention in their management. These risks often affect productivity and the smooth operation of the business, making them a priority in mitigation strategies.

Capital risk and competition risk have percentages of 25% and 30%, respectively, indicating that while these risks are still significant, they can be managed with careful planning and proper market analysis. Operational risk, natural disaster risk, and regulatory risk have lower percentages of 20%, 10%, and 15%, respectively, suggesting that while these risks occur less frequently, their impact could still be considerable if not properly addressed.

Risk Management Implementation

Mr. Reza addresses weather-related risks and ensures the health of his livestock by maintaining proper feed storage, providing adequate ventilation in the coops, and utilizing technology to monitor temperature and humidity. He also routinely administers vaccinations and collaborates with veterinarians to maintain the health of his chickens. According to Medion (2023), environmental control, such as maintaining optimal temperature and humidity levels, can reduce the impact of extreme weather on chicken productivity. Technologies like automated monitoring systems further enhance coop management efficiency, creating a stable environment that supports the chickens' health.

In financial aspects, Mr. Reza prioritizes essential expenditures, allocates emergency funds, and improves operational efficiency through employee training and feed logistics management. Hidayat (2021) highlights the importance of effective financial management, including the provision of emergency funds to address price volatility. Additionally, the employee training initiatives implemented by Mr. Reza align with the findings of Putri and Wibowo (2022), which demonstrate that skilled labor contributes to cost efficiency and productivity. This approach exemplifies a combination of risk management, technological application, and financial strategies to ensure the sustainability of poultry farming operations.

The table below summarizes the risk management measures identified and analyzed in the context of egg production.Based on the results of risk identification and analysis, the risk management practices applied in the egg farming business are summarized in the following table

Tabel 4. Risk Management Srtategy

Risk Management Strategy	Description
Feed Diversification	Using various feed sources to reduce dependency on one feed source, which may be impacted by price fluctuations or availability.
Technology Implementation	Using technology to monitor poultry health, manage feed, and control coop temperature to improve production efficiency.
Poultry Health Education	Conducting regular vaccinations, monitoring poultry health, and providing training to farmers on poultry disease prevention.
Financial Planning	Creating realistic budgets, monitoring cash flow, and seeking additional financing sources to reduce capital risk.
Insurance	Implementing insurance to protect farm facilities and production from damage caused by natural disasters.
Marketing Strategy	Expanding market networks, diversifying products, and adjusting prices to cope with intense market competition

The interpretation of the risk management table indicates that the strategies applied in the egg farming business are primarily focused on mitigating the most frequent risks, such as weather and poultry health risks. The implementation of feed diversification and poultry health education helps prevent losses caused by fluctuations in feed quality and the spread of diseases, which are key risks.

Additionally, sound financial planning is crucial for managing capital risk and maintaining business stability. The use of technology and insurance also plays a vital role in minimizing losses from

operational risks and natural disasters. Lastly, adaptive marketing strategies help address competition risks, especially in a highly dynamic market.

Overall, the implementation of integrated risk management that focuses on the prevention and mitigation of the most significant risks, such as weather and poultry health, is essential for the continuity and success of the egg farming business.

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Conclusion

This study identifies various risks faced by poultry egg farming businesses in the Semarang region, including risks related to extreme weather, chicken health, feed price fluctuations, and market competition. Extreme weather and chicken health risks are shown to have a high potential impact on business operations, while risks associated with capital and operations, though having a lower impact, remain significant in influencing business sustainability.

To mitigate the effects of these risks, businesses must implement effective risk management strategies. Recommended approaches include proper feed management, routine vaccination, and comprehensive financial planning. By adopting these measures, the stability and sustainability of poultry egg farming enterprises can be maintained despite evolving challenges.

Effective risk management is essential for maintaining competitiveness and ensuring the long-term viability of poultry egg farming businesses in this sector.

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