



Profitability Analysis of Live Broiler Chicken Trading at the Central Market of Mimika Regency

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Abstract

Purpose: This study analyzes the costs, revenues, profitability, and factors influencing the profitability of live broiler chicken traders at the Central Market of Mimika Regency. The locally sourced supply chain from Timika farmers reduces logistics costs and enhances profitability.

Research Methodology: A census method was applied to 20 registered traders. Data were collected through interviews, questionnaires, observation, and documentation. Analysis included income analysis, profitability indicators (R/C Ratio, BEP, ROI, GPM, NPM, ROA, ROE), and profitability factor assessment.

Results: Average monthly costs reached IDR 153.08 million, dominated by chicken purchases (92.1%), while revenues reached IDR 192.11 million, generating profits of IDR 39.03 million/month. The business achieved $R/C = 1.255$, $ROI = 60.05\%/month$, and a 93% safety margin. A 1–3 day holding period produced optimal margins up to 24.3%. Key profitability factors included purchase price, holding duration, transportation costs, feed costs, sales volume, chicken quality, and consumer purchasing power.

Conclusions: Live broiler chicken trading in Mimika is financially feasible and highly profitable due to short supply chains, low logistics costs, strong demand, and effective holding management.

Limitations: The study is limited to 20 traders at Pasar Sentral Mimika, informal financial records, cross-sectional data, and unseparated household expenses.

Contributions: This study provides the first multi-indicator profitability analysis of live broiler chicken trading in Mimika Regency and documents the profitability advantage of locally sourced supply chains and holding-period optimization.

Keywords: Agribusiness Trading, Holding Period, Live Broiler Chicken, Profitability Analysis, Supply Chain

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1. Introduction

Food security and the availability of adequate animal protein are fundamental components of sustainable economic development and public welfare. The livestock sector contributes significantly to meeting nutritional requirements, supporting agricultural employment, strengthening rural economies, and ensuring the continuity of food distribution systems. Among various livestock commodities, poultry meat has become an important source of animal protein because of its relatively

affordable price, high nutritional value, and widespread consumer acceptance. The Food and Agriculture Organization emphasizes the importance of livestock production and distribution in maintaining food availability and supporting sustainable agricultural development. As population growth, urbanization, and changing consumption patterns continue to influence food demand, the efficiency of livestock supply chains becomes increasingly important for maintaining market stability and ensuring equitable access to animal-based food products ([Febrianto, Akhiroh, Helmi, & Hartono, 2023](#)).

In Indonesia, the broiler chicken industry represents one of the most important components of the national livestock subsector. Broiler chickens are widely consumed because they offer a relatively economical source of protein and have a shorter production cycle than many other livestock commodities. Advances in poultry production technology, feeding systems, and farm management have contributed to improvements in production efficiency and market availability. The Ministry of Agriculture of the Republic of Indonesia identifies poultry as a strategic commodity in supporting domestic food demand and agricultural development. Nevertheless, the economic performance of the broiler industry depends not only on production capacity but also on the efficiency of distribution and marketing activities. Effective coordination between farmers, distributors, and market traders is necessary to maintain product availability, minimize marketing costs, and ensure that consumer prices remain competitive ([Mandak, Rorimpandey, Waleleng, & Oroh, 2017](#); [Yudiarini, Pratiwi, & Amaral, 2024](#)).

The broiler chicken agribusiness system consists of interconnected production, distribution, and marketing activities that collectively determine the economic value received by business participants. At the production level, farmers are responsible for maintaining poultry growth, managing feed efficiency, and ensuring that chickens achieve appropriate market weights. At the distribution level, traders facilitate the movement of livestock products from producers to consumers while managing transportation, storage, and market demand. [Mac and Feeney \(2019\)](#) explain that agribusiness activities involve interdependent operational stages requiring effective management to achieve economic efficiency. Within this system, live broiler chicken traders play an important role because they directly connect local poultry producers with consumers and respond to fluctuations in market demand.

The economic activities of live broiler chicken traders differ from those of producers because traders primarily generate income through purchasing, handling, maintaining, and reselling livestock commodities. Their profitability depends on the difference between purchasing and selling prices after accounting for operational expenditures. These expenditures may include transportation, cage rental, feed, vitamins, labor, equipment depreciation, market levies, and potential losses associated with chicken mortality. The ability to control these costs is particularly important because live chickens require continuous care during the trading process. Unlike nonperishable commodities, live broiler chickens remain biologically active while awaiting sale, creating additional management responsibilities and financial risks. Consequently, profitability analysis in this sector should consider not only selling prices and transaction volumes but also the operational characteristics of handling live animals ([Taouab & Issor, 2019](#)).

Profitability is a fundamental indicator of business performance because it reflects the ability of an enterprise to generate financial returns from available resources. [Kasmir \(2019\)](#) explains that profitability ratios provide information regarding the effectiveness of business management in generating income through capital utilization. In agribusiness, profitability assessment is particularly important because operational costs and commodity prices may fluctuate according to production conditions, market demand, and distribution efficiency. [Soekartawi \(2016\)](#) emphasizes the importance of economic analysis in determining whether agricultural enterprises can generate sufficient revenue to cover their expenditures. Therefore, evaluating profitability enables traders to understand their financial position, assess operational efficiency, and formulate appropriate strategies for sustaining business activities.

A comprehensive profitability assessment requires the application of financial indicators that capture different aspects of business performance. The Revenue-Cost Ratio (R/C Ratio) measures the relationship between total business revenue and total costs, providing an indication of operational feasibility. Break-Even Point (BEP) analysis determines the minimum sales volume or revenue required to cover operating expenses, while Return on Investment (ROI) measures the financial returns generated from invested capital. Gross Profit Margin (GPM) and Net Profit Margin (NPM) evaluate the proportion of revenue retained after accounting for relevant expenditures. Return on Assets (ROA) and Return on Equity (ROE) provide additional perspectives on asset utilization and the returns generated from owners' capital. [Taouab and Issor \(2019\)](#) highlight the importance of financial performance indicators in assessing business efficiency and supporting managerial decisions. The combined application of these measures can provide a more comprehensive evaluation of profitability than relying exclusively on business income.

The profitability of livestock trading businesses is also closely associated with supply chain efficiency. Supply chains determine how agricultural commodities move from production centers to final consumers and influence the costs incurred by different market participants. [Mac and Feeney \(2019\)](#) discuss the importance of supply chain coordination in the broiler chicken industry, particularly in maintaining distribution efficiency and responding to market requirements. Efficient distribution systems may reduce unnecessary transportation expenses, minimize handling losses, and improve the availability of products in local markets. Conversely, inefficient distribution networks can increase operating expenditures and reduce the margins available to traders. For businesses operating in geographically remote areas, distribution efficiency becomes particularly relevant because transportation distances and supply reliability can significantly affect business performance.

The geographical characteristics of eastern Indonesia create distinctive challenges for agricultural distribution and livestock marketing. Many regional markets are separated from major production centers by considerable distances and rely on transportation systems involving roads, ports, and inter-island shipping. These conditions may increase logistical expenses and create uncertainty regarding delivery schedules and commodity availability. However, livestock businesses that obtain products from nearby producers may experience different operational conditions. Shorter supply chains can reduce transportation requirements, facilitate communication between farmers and traders, and enable faster responses to changes in consumer demand. [Fachri, Daulay, Hanafi, Tafsin, and Mirwandhono \(2017\)](#) discusses the relevance of marketing margins and distribution channels in broiler chicken marketing, providing a foundation for understanding how supply chain arrangements influence the financial outcomes of traders.

Mimika Regency, located in Central Papua Province, represents an important regional economic center with distinctive agricultural and commercial characteristics. The presence of large-scale mining operations, particularly those associated with PT Freeport Indonesia, has contributed to regional economic activity, employment opportunities, and the development of supporting commercial sectors. These activities influence market demand for essential commodities, including animal-based food products. According to BPS Kabupaten Mimika, the regency has a population of approximately 315,995 residents, with a substantial proportion belonging to the productive-age population. This demographic structure, combined with the economic activities of the mining and service sectors, creates opportunities for livestock product traders to serve consumers with diverse purchasing capacities and consumption requirements.

Demand for broiler chicken in Mimika is supported by its role as a widely consumed source of animal protein. *Dinas Ketahanan Pangan Kabupaten Mimika* estimates that regional broiler chicken demand reaches approximately 700 tons per month. This considerable demand highlights the importance of livestock production and marketing activities in ensuring food availability. The relationship between local production capacity and consumer demand also influences the organization of livestock supply chains. When demand increases, traders must maintain reliable relationships with farmers and coordinate purchasing quantities to ensure the continuity of supply. Inadequate supply management may lead to shortages, unstable selling prices, and difficulties fulfilling consumer requirements.

Consequently, the ability of traders to maintain consistent procurement and distribution activities becomes essential for both market performance and business profitability.

Pasar Sentral Mimika serves as an important traditional market supporting the distribution of food commodities within the regency. Among its trading activities, live broiler chicken marketing represents a significant source of economic opportunities for small and medium-scale traders. These traders purchase chickens from farmers and subsequently sell them to consumers through market-based transactions. Unlike trading systems that depend heavily on inter-island procurement, preliminary field information indicates that live broiler chicken traders at *Pasar Sentral Mimika* obtain their supplies from local farmers operating in the Timika area. The reported distance between production locations and the market ranges from approximately 5 to 30 kilometers. This geographically concentrated procurement system provides an important context for examining the relationship between local supply chains, transportation expenditures, and profitability.

Local procurement may offer several advantages for live broiler chicken traders. Shorter transportation distances can reduce fuel expenses, vehicle requirements, delivery time, and the operational challenges associated with moving live animals. Direct relationships with nearby farmers may also facilitate purchasing arrangements and improve traders' ability to adjust supply quantities according to market conditions. Furthermore, shorter delivery periods may help maintain the physical condition of chickens before they reach the market. These potential advantages are particularly relevant in a business where product quality, animal health, and weight can influence consumer purchasing decisions. Nevertheless, local procurement does not eliminate all business risks. Traders remain exposed to changes in farm-gate prices, supply availability, feeding expenses, and market competition, making effective financial and operational management essential.

A distinctive characteristic of live broiler chicken trading at *Pasar Sentral Mimika* is the practice of temporarily maintaining purchased chickens before selling them to consumers. This practice, referred to in the present study as the holding period strategy, involves keeping chickens in temporary market cages for a limited number of days after procurement. During this period, traders provide feed and basic care while waiting for favorable selling conditions. The strategy may allow traders to improve the marketable condition of the chickens and obtain higher selling prices ([Widiyanto, Aranza, & Hernawan, 2023](#)). However, the holding period also creates additional expenses related to feed, vitamins, labor, cage maintenance, and potential mortality. Therefore, the profitability of this strategy depends on whether the additional revenue generated through delayed selling exceeds the cumulative costs of maintaining the chickens.

The holding period strategy introduces an important managerial decision concerning the relationship between selling time, operating costs, and profit margins. Selling chickens immediately after procurement may minimize maintenance expenses and reduce biological risks, but it may also limit opportunities to obtain additional selling value. Conversely, maintaining chickens for a longer period may increase selling prices while simultaneously increasing operational costs. [Widiyanto et al. \(2023\)](#) discusses the relevance of price differences and market timing in agricultural commodity transactions, while [Karaman, Taşcıoğlu, and Bulut \(2023\)](#) examine the relationship between live weight, holding time, and broiler prices. These perspectives suggest that selling decisions should consider the financial consequences of maintaining livestock over time. In the context of live broiler chicken trading, identifying an economically appropriate holding duration can contribute to more effective cost management and profitability improvement.

The relationship between holding duration and profitability is particularly relevant because the additional value generated through temporary maintenance may not increase proportionally with time ([Adeyonu & Odozi, 2022](#)). During the initial holding period, changes in chicken weight, condition, and market demand may create opportunities for higher selling prices. As holding continues, however, cumulative feeding expenses and mortality risks may reduce the financial benefits of delayed sales. This creates a trade-off between potential revenue enhancement and increasing maintenance costs. A systematic evaluation of holding practices is therefore necessary to determine how different selling

durations contribute to business income. Understanding this relationship may also assist traders in improving inventory turnover, allocating working capital, and reducing avoidable operating expenses.

In addition to holding duration, several internal and external conditions may influence the profitability of live broiler chicken trading. Internal factors include purchasing decisions, capital availability, operational efficiency, feeding management, inventory turnover, and sales volume. External factors include farm-gate price fluctuations, consumer purchasing power, market competition, transportation conditions, and the availability of livestock supplies. [Johnson, Huang, and Grant \(2025\)](#) discusses the importance of cost structure and break-even analysis in livestock trading, while [Nendi, Harsela, Hardiyanto, Komara, and Lestari \(2026\)](#) highlights investment efficiency in agribusiness activities. These studies provide a basis for understanding how cost management and resource utilization can influence financial performance. Nevertheless, the relative importance of profitability-related factors may differ according to local market characteristics and the specific operational practices adopted by traders.

Financial management capabilities may also influence traders' ability to evaluate business profitability accurately. Traditional market enterprises frequently operate through informal transactions and may depend on simple financial records or personal calculations when estimating income and expenses. [Nugroho, Rahman, Toiba, Andriatmoko, Hartono, and Shaleh \(2023\)](#) discusses financial literacy and bookkeeping practices among smallholder agribusiness enterprises, highlighting the relevance of financial information to business management. In live broiler chicken trading, incomplete recording of feed expenses, transportation expenditures, and other operational costs may cause differences between estimated and actual profit. Accurate financial recording is therefore important for evaluating the financial consequences of purchasing decisions, holding duration, and selling strategies. Although this study primarily focuses on profitability, the operational context of traditional-market trading demonstrates the relevance of effective financial management to business sustainability.

Previous studies have provided valuable empirical evidence concerning the profitability and financial feasibility of broiler chicken enterprises. [Wahyuda, Yusniar, and Syahbudin \(2025\)](#) examined economic aspects of broiler marketing and profitability, emphasizing the relevance of trading costs and returns. [Putri \(2021\)](#) analyzed business feasibility and profitability within the Indonesian broiler chicken sector, contributing to the understanding of financial performance in poultry agribusiness. [Johnson et al. \(2025\)](#) considered cost structure and break-even analysis in livestock trading, while [Beyer, Nabar, and Rapley \(2018\)](#) addressed investment efficiency and profitability in agribusiness enterprises. These studies demonstrate the importance of financial indicators in evaluating the economic performance of livestock-related businesses.

More recent research has expanded the discussion to include marketing strategies, operational efficiency, and the relationship between trading practices and financial outcomes. [Suryani, Tambunan, Santosa, and Haryanto \(2024\)](#) investigated profitability and marketing efficiency among broiler chicken traders, while [Karaman et al. \(2023\)](#) examined cost structures and efficiency in broiler production enterprises. [Onumah, Mensah, Owusu, Mensah, and Otokunor \(2023\)](#) addressed live weight and holding time in relation to broiler prices, providing a relevant perspective on the operational characteristics of live poultry marketing. [Dastagiri, Kumar, Hanumanthaiah, Paramsivam, Sidhu, Sudha, and Chand \(2012\)](#) further discussed marketing strategies and profitability in poultry businesses in eastern Indonesia. Collectively, these studies provide important insights into broiler agribusiness performance, although their research contexts, analytical emphasis, and business characteristics differ from those of live broiler chicken traders operating in Pasar Sentral Mimika.

The research gap lies in the limited integrated evidence concerning the profitability of live broiler chicken trading businesses operating within locally concentrated supply chains and distinctive regional market conditions. Previous studies have generally examined production profitability, marketing efficiency, business feasibility, or cost structures without comprehensively connecting these aspects to temporary chicken holding practices and profitability indicators at the traditional-market trader level. Furthermore, the reviewed literature provides limited evidence concerning how

procurement from nearby farmers, holding-related expenses, and local consumer demand interact in shaping profitability within the economic environment of Mimika Regency. This limitation indicates the need for research that simultaneously evaluates business costs, revenue generation, financial performance, and profitability-related factors in a geographically specific livestock trading system.

The novelty of this study lies in its integrated assessment of live broiler chicken trading profitability within the distinctive market and supply chain conditions of Mimika Regency. Rather than focusing solely on business income or production efficiency, this research combines cost and revenue analysis with multiple profitability indicators, including the R/C Ratio, BEP, ROI, GPM, NPM, ROA, and ROE. The study also examines the economic implications of different holding durations by considering the relationship between selling prices and additional maintenance costs. Furthermore, it provides a contextual assessment of how local procurement arrangements and market conditions are associated with profitability. By integrating these analytical perspectives, the study extends existing agribusiness profitability discussions toward a more comprehensive understanding of the operational and financial decisions made by live broiler chicken traders in traditional markets.

Based on these considerations, this study aims to analyze the total business costs and revenues of live broiler chicken traders at Pasar Sentral Mimika Regency and assess their profitability using complementary financial performance indicators. The study also seeks to identify the principal factors associated with profitability, with particular attention to procurement costs, holding duration, operational expenditures, sales volume, and market conditions. Through these objectives, the research is expected to provide empirical evidence concerning the financial performance and economic feasibility of live broiler chicken trading businesses in Central Papua. The findings may also offer practical insights for traders, livestock farmers, market administrators, and regional policymakers in improving trading efficiency, strengthening local livestock supply chains, and supporting the sustainable development of poultry agribusiness in Mimika Regency.

2. Literature Review

2.1 Profitability Theory and Indicators

Profitability measures a business unit's capacity to generate profit from operational activities over a defined period. [Kasmir \(2019\)](#) defines profitability ratios as tools for assessing a business's ability to earn returns through capital utilization. [Soekartawi \(2016\)](#) specifies that profitability analysis in agribusiness serves three functions, such as assess business viability, identify efficiency gaps, and provide managerial decision-making foundations. This study employs seven complementary profitability indicators that together provide comprehensive financial performance assessment, such as R/C Ratio (Operational Efficiency), BEP Unit and Value (Break-Even Safety Analysis), ROI (Return on Total Investment), GPM (Gross Margin Efficiency), NPM (Net Margin Efficiency), ROA (asset utilization efficiency), and ROE (equity return efficiency).

Profitability analysis in trading businesses is not only concerned with measuring the amount of profit generated but also evaluating the efficiency of resource utilization and the sustainability of business operations ([Beyer, Nabar, & Rapley, 2018](#)). In agribusiness, profitability is influenced by various interconnected factors, including input costs, selling prices, sales volume, operational efficiency, and market conditions. Therefore, a single financial indicator may not fully represent the actual performance of a business unit. A combination of profitability indicators provides a more comprehensive understanding of business performance by capturing different dimensions of financial strength ([Aprison, Ryadi, Suyanto, Sukesi, & Assagaf, 2025](#)).

The R/C Ratio evaluates whether the revenue generated is sufficient to cover total operational costs, while BEP analysis determines the minimum sales level required to avoid losses. ROI measures the ability of invested capital to generate returns, reflecting investment attractiveness and capital efficiency ([Suryani, Tambunan, Santosa, & Haryanto, 2024](#)). Meanwhile, GPM and NPM provide insights into cost control effectiveness and the proportion of revenue converted into profit after

considering operational expenses. ROA and ROE further assess the effectiveness of asset utilization and the ability of business capital to generate returns for owners.

In the context of live broiler chicken trading, profitability is strongly associated with supply chain efficiency, purchasing decisions, inventory management, and market price dynamics ([Hasan, 2022](#)). Traders must balance purchasing costs, holding duration, mortality risk, and selling prices to maximize profit margins. Consequently, comprehensive profitability measurement is essential for identifying the economic feasibility of trading activities and determining managerial strategies for improving business performance.

2.2 Broiler Chicken Agribusiness and Holding Strategy

Broiler agribusiness is structured in two segments [Putri \(2021\)](#) the on-farm segment (production: DOC, rearing, harvesting) and the off-farm segment (distribution and trading: collectors, distributors, retailers). This study focuses on the off-farm segment specifically, live broiler chicken traders at the traditional market level. Traders in this segment serve three economic functions, such as bridging producers and consumers, absorbing supply and demand fluctuations, and determining consumer-level prices through marketing margins ([Erlangga, Widadie, & Rahayu, 2025](#); [Tuoho, Dadzie, Hagan, Bosompem, & Adu-Kyei, 2025](#)). The holding period strategy maintaining purchased chickens for 1–4 days before sale is the distinctive value-addition mechanism in the Mimika model. Field observation confirms that holding generates price increments of IDR 10.000–15.000/chicken, with optimal duration at 1–3 days where price increments exceed cumulative holding costs. Holding costs range from IDR 2.180–3.700/chicken/day (holding costs include feed expenses of IDR 1.500–2.500, vitamins of IDR 300–500, labor costs of IDR 200–400, and mortality-related costs of IDR 180–300, with a daily mortality risk of 0.3–0.5%).

The off-farm segment plays a critical role in transforming poultry production into marketable products by ensuring product availability, maintaining distribution continuity, and connecting producers with final consumers. Unlike the production segment, which primarily depends on biological growth factors and input management, trading activities are strongly influenced by market timing, price fluctuations, consumer demand, and inventory management ([Widiyanto, Aranza, & Hernawan, 2023](#)). Therefore, live broiler traders require effective strategies to maintain product quality while maximizing economic returns.

In traditional market systems, traders create value not only through physical distribution but also through temporary holding practices that improve market readiness. The holding period allows traders to adjust supply availability, maintain chicken conditions, and capture price differences between farm-gate and consumer markets ([Rahmatullah & Rahadian, 2025](#)). However, extended holding periods involve additional operational costs, including feed, vitamins, labor, and mortality risks, which may reduce profit margins if price increases cannot compensate for additional expenses.

The effectiveness of holding strategies depends on the balance between incremental revenue and accumulated holding costs. Short-term holding provides an opportunity for traders to increase selling prices while minimizing biological and financial risks. In the Mimika trading context, this strategy becomes particularly important because locally sourced supply enables traders to maintain fresh live chicken availability with relatively low transportation costs. Thus, holding duration represents a key managerial decision that directly affects profitability, operational efficiency, and competitive advantage in live broiler chicken trading ([Onumah, Mensah, Owusu, Mensah, & Otokunor, 2023](#)).

2.3 Marketing Margin and Supply Chain Efficiency

Marketing margin is defined as the price differential between consumer and producer levels, representing the compensation for marketing services provided by distribution actors [Heldi \(2018\)](#). [Dastagiri, Kumar, Hanumanthaiah, Paramsivam, Sidhu, Sudha, and Chand \(2012\)](#) establish that efficient broiler supply chains are characterized by good actor coordination, minimal food loss, price transparency, and demand responsiveness. Short supply chains with geographically proximate

production reduce transaction costs and increase actor margins ([Fachri, 2017](#)). The Mimika model with 5–30 km delivery distance and all-local sourcing represents an optimally short broiler supply chain that structurally maximizes margin potential. [Nendi, Harsela, Hardiyanto, Komara, and Lestari \(2026\)](#), confirms that market price and distribution efficiency are primary determinants of business success in high-cost Papua markets.

Marketing margin analysis is an important approach for understanding how value is distributed among actors within an agricultural supply chain. In commodity markets, especially perishable products such as live broiler chickens, marketing margins reflect not only price differences but also the costs, risks, and services performed by intermediaries. Traders contribute economic value through transportation, temporary storage, quality maintenance, market information provision, and matching supply with consumer demand ([Sani, Gomina, & Idi, 2023](#)). Therefore, higher margins do not necessarily indicate market inefficiency, as they may represent compensation for services and risks undertaken by traders.

Supply chain efficiency becomes a crucial determinant of profitability because poultry products have biological characteristics that require rapid distribution and proper handling ([Aslam, Alarcon, Yaqub, Iqbal, & Häsler, 2020](#)). Long distribution channels generally increase transaction costs, transportation expenses, and product losses, which can reduce the profit received by each actor. Conversely, shorter supply chains allow producers and traders to maintain closer coordination, reduce operational costs, and respond more quickly to market changes.

In the Mimika context, the dominance of local sourcing creates a distinctive supply chain advantage. The short delivery distance between farmers and traders reduces transportation costs, minimizes mortality risk, and supports the availability of fresh live chickens ([Asbal, Siregar, & Sirajuddin, 2023](#)). This condition allows traders to maintain competitive selling prices while preserving attractive profit margins. Consequently, supply chain structure and marketing efficiency become fundamental factors explaining the profitability advantage of live broiler chicken trading in Pasar Sentral Mimika.

2.4 Prior Research

[Purnomo \(2021\)](#) documented that broiler trading businesses in developing countries typically achieve $R/C > 1.2$ with margins of 15–25% when logistics costs are minimized directly anticipated by Mimika's local sourcing model. [Ilham \(2020\)](#) confirmed the viability of broiler trading businesses in Indonesia based on financial feasibility indicators. [Prayugo, Daryanto, and Djohar \(2012\)](#) established that livestock trading businesses with high sales volume and low fixed costs have low BEP and high stability directly consistent with the Mimika cost structure (1.9% fixed costs). [Rahman \(2021\)](#) documented that investment efficiency in agribusiness with short production cycles generates substantially higher ROI than other sectors. The critical research gap: none of these studies examined live broiler chicken trading in a locally-sourced, high-purchasing-power Papua context, nor provided holding period trade-off optimization evidence.

3. Research Methodology

3.1 Design and Location

A quantitative descriptive research design was employed, integrating business income analysis, multi-indicator profitability analysis, and descriptive analysis of profitability factors. Research was conducted at Pasar Sentral Kabupaten Mimika, Timika, Central Papua Province, from January to May 2025.

3.2 Population and Sample

A census method was employed, involving all 20 registered live broiler chicken traders at Pasar Sentral Mimika as the study sample. The census approach was selected because the population is small and well-defined, complete coverage maximizes data reliability for financial analysis, and all traders share the same market location, enabling direct comparison.

3.3 Data Collection

Data were collected using three methods, including in-depth structured interviews to obtain financial information on monthly costs, revenues, sales volumes, and prices, structured Likert-scale questionnaires to assess factors influencing profitability, and field observations to examine operational practices related to holding management and supply chain logistics. Secondary data from BPS Mimika, *Dinas Ketahanan Pangan, Dinas Perdagangan Mimika*.

3.4 Analytical Methods

Business income was calculated by subtracting total costs (TC) from total revenue (TR), expressed as $\pi = TR - TC$. Total revenue was determined by multiplying selling prices by sales volumes, weighted according to holding duration, while total costs comprised variable and fixed costs. Business feasibility was assessed using the Revenue-Cost Ratio ($R/C = TR/TC$), where a value greater than one indicates financial viability. Break-Even Point (BEP) analysis was conducted in terms of units and sales value, calculated as fixed costs divided by the contribution margin per unit and fixed costs divided by the contribution margin ratio, respectively. Profitability was further evaluated using Return on Investment (ROI), Gross Profit Margin (GPM), Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE), calculated as the respective returns divided by their relevant financial bases and multiplied by 100%. Holding period analysis compared incremental selling price gains with cumulative holding costs to assess the financial implications of different holding durations. Factors influencing profitability were examined descriptively using structured questionnaires completed by all 20 respondents, covering seven identified factors.

4. Results and Discussions

4.1 Trader Profile

Table 1. Demographic and business characteristics of 20 live broiler chicken traders at Pasar Sentral Mimika

Profile Variables	Category	N	%	Significance
Age	35–54 years (peak productive age)	15	75	Majority are at peak managerial maturity
Education	Junior high school/equivalent (dominant)	8	40	Indicates limited formal education but strong practical business judgment
Business Tenure	4–7 years	8	40	Represents a stable business phase with established market networks
Origin	Sulawesi	17	85	Dominant migrant group with poultry trading experience
	Java	3	15	
Business Scale	Medium scale (500–1,200 chickens/month)	10	50	Majority operate at medium scale with 2–4 days holding periods
Initial Capital	IDR 25–50 million (average IDR 65 million)	9	45	Small-to-medium business scale with limited access to formal financing
Capital Source	Personal/family savings	14	70	Indicates low formal financial inclusion among traders
Financial Recording	Simple daily bookkeeping	9	45	Only a small proportion use structured financial records
Supply Source	Local Timika farmers	20	100	Fully local sourcing with purchase price of IDR 60,000/chicken and delivery distance of 5–30 km

Profile Variables	Category	N	%	Significance
Stock Frequency	2–3 times/week	13	65	Moderate stocking frequency balancing chicken quality and market demand

Table 1 shows the 100% local sourcing pattern is the most structurally significant trader characteristic in this study. No trader in Pasar Sentral Mimika relies on inter-island supply a complete departure from most eastern Indonesian markets where frozen chicken from Java/Sulawesi is dominant. This local sourcing provides three key advantages, including low transportation costs of only IDR 300.000–500.000 per month (0.3% of total costs) compared with substantially higher inter-island logistics expenses, mortality rates below 0.5% during short-distance transportation compared with 2–5% for longer-distance supply chains, and premium prices for fresh live chickens that are IDR 10.000–15.000 per bird higher than those of frozen alternatives sourced from outside the region. The 70% reliance on personal/family savings for capital confirms low financial inclusion despite the high profitability creating an opportunity gap where *Kredit Usaha Rakyat/KUR* access could significantly expand scale without proportional risk increase.

4.2 Holding Period Practice and Price Formation

Table 2. Holding period practices and selling price formation among 20 live broiler chicken traders

Holding Duration	Traders	%	Avg. Selling Price (IDR/chicken)	Cost/chicken	Margin/chicken	Margin %
0 days (direct sale)	4	20	72.500	65.300	7.200	11.0
1–2 days	11	55	82.500	67.500	15.000	21.7
3–4 days	5	25	87.500	69.800	17.700	24.3
>4 days (estimate)	–	–	90.000	73.000	17.000	22.7% (declining)

Table 2 shows the holding period analysis reveals a clear optimization pattern: profit margin peaks at 3–4 days holding (24.3%) rather than at maximum holding duration. This is the study's most analytically novel finding. Each additional holding day increases cumulative costs by IDR 2.180–3.700 for feed, vitamins, labor, and mortality risks, while selling prices increase by IDR 7.500–10.000 during days 1–2 and IDR 5.000 during days 3–4. Beyond day 4, the price increment flattens while costs continue accumulating, causing margin compression. The majority of traders (55%) apply 1–2 day holding as the default strategy capturing most of the price premium at lower accumulated risk. Traders with higher capital and cage capacity (20% > 1.200 chicken/month) more frequently extend to 3–4 days, capturing the maximum 24.3% margin. The direct-sale traders (20%) sacrifice IDR 7.500–10.500/ekor in potential margin by avoiding holding risk likely reflecting capital constraints or insufficient cage capacity for temporary stock maintenance.

4.3 Business Cost and Revenue Analysis

Table 3. Average monthly operating cost structure of 20 live broiler chicken traders at Pasar Sentral Mimika

Cost Component	IDR/Month	% of TC	Strategic Significance
	Variable Cost	98.1	
Chicken stock purchase (2.350 chickens × IDR 60.000)	141.000.000	92.1	The primary cost component, highly sensitive to purchase price fluctuations.
Local transportation	400.000	0.3	Structural advantage resulting from a short transportation distance of only 5–30 km.
Holding: supplementary feed	4.200.000	2.7	Corn/commercial feed
Holding: vitamins/electrolytes	850.000	0.6	
Holding: supplementary labor	1.100.000	0.7	

Cost Component	IDR/Month	% of TC	Strategic Significance
Mortality/shrinkage reserve (0.8%)	1.128.000	0.7	
Local distribution & supplies	950.000	0.6	
Market levies & packaging	650.000	0.4	
Subtotal Variable Costs	150.278.000	98.1	
	Fixed Cost	1.9	
Kiosk + temporary cage rental	1.500.000	0.98	
Equipment & cage depreciation	750.000	0.49	
Utilities, hygiene	450.000	0.29	
Communications, administration	100.000	0.07	
Subtotal Fixed Costs	2.800.000	1.9	
Total Cost (TC)	153.078.000	100	

Table 3 shows the 92.1% cost dominance of chicken purchase is the most important structural feature of this business model. It confirms that purchase price from local farmers is the single most powerful profitability lever a small change in farm-gate price (IDR 5.000 increase from IDR 60.000 to IDR 65.000) would reduce monthly net profit by IDR 11.75 million (30%) in the absence of compensating price increases. This price sensitivity validates why 100% of traders identify 'purchase price from local farmers' as the primary profitability factor. The 0.3% transportation cost is the structural competitive advantage: an equivalent business model sourcing from Java or Sulawesi would incur IDR 5.000.000-15.000.000/month in logistics costs, fundamentally transforming the profitability equation. Average net profit of IDR 39.032.000/month represents approximately $10.1 \times \text{Upah Minimum Provinsi/UMP Central Papua}$ (IDR 3.86 million/month in 2024) confirming the business provides income far above the regional minimum wage standard.

Table 4. Monthly revenue analysis by holding duration among 20 live broiler chicken traders (average sales volume of 2.350 chickens per month)

Holding Duration	Share (%)	Volume	Price (IDR/chicken)	Revenue (IDR/chicken)	Revenue Share (%)
0 days (direct)	20	470	72.500	34.075.000	17.7
1–2 days	55	1.293	82.500	106.672.500	55.5
3–4 days	25	587	87.500	51.362.500	26.7
Total	100	2.350	81.600*	192.110.000	100

Table 4 shows the revenue analysis indicates that the holding strategy significantly influences sales performance. The majority of traders (55%) applied a 1–2 day holding period, generating the highest revenue contribution of IDR 106.67 million (55.5%) due to improved selling prices. Meanwhile, a 3–4 day holding period achieved the highest selling price (IDR 87.500/chicken) and contributed 26.7% of total revenue. Direct sales without holding generated the lowest price and revenue contribution, indicating that short-term holding practices provide additional value and improve trader profitability.

4.4 Profitability Analysis

Table 5. Comprehensive profitability assessment of 20 live broiler chicken traders at Pasar Sentral Mimika

Indicator	Formula	Value	Benchmark	Status	Interpretation
R/C Ratio	$TR \div TC$	1.255	> 1	✓	IDR 1.255 return per IDR 1 spent
BEP (Unit)	$FC \div (P - VC \text{ per unit})$	159 chicken/month	$< \text{Actual } 2.350$	✓	Margin of safety = 93%
BEP (Value)	$FC \div (1 - VC/TR)$	IDR 12.84M	$< \text{Actual IDR } 192M$	✓	Very high revenue buffer
ROI	$\text{Net Profit} \div \text{Investment} \times 100\%$	60.05%/month	$> \text{Deposit } 4\text{--}5\%/yr$	✓	$\approx 720\%/yr$ - very high

Indicator	Formula	Value	Benchmark	Status	Interpretation
GPM	$(TR - VC) \div TR \times 100\%$	21.77%	15–30% industry range	✓	Healthy variable cost control
NPM	$\text{Net Profit} \div TR \times 100\%$	20.3%	> 10% good	✓	High net efficiency
ROA	$\text{Net Profit} \div \text{Total Assets} \times 100\%$	60.05%/month	> Industry average	✓	Rapid asset turnover
ROE	$\text{Net Profit} \div \text{Equity} \times 100\%$	60.05%/month	> Deposit alternatives	✓	Excellent equity return

Table 5 shows all seven profitability indicators consistently confirm that live broiler chicken trading at Pasar Sentral Mimika is highly profitable, efficient, and financially feasible. The combination of an R/C ratio of 1.255, ROI of 60.05% per month, and BEP margin of safety of 93% provides comprehensive evidence that the business generates positive returns, achieves substantial returns on invested capital, and operates well above minimum viability thresholds. The exceptionally high monthly ROI of 60.05%, equivalent to approximately 720% annually through simple annualization, compared with the annual deposit benchmark of 4–5%, reflects three structural advantages. These include strong consumer purchasing power in Mimika that supports premium pricing, minimal logistics costs resulting from local supply chains, and rapid capital turnover facilitated by the 1–3 day holding cycle. This business model resembles a holding arbitrage strategy in which traders purchase chickens from farmers at IDR 60.000 per bird and resell them within 1–4 days at prices ranging from IDR 72.500 to IDR 87.500, generating gross markups of approximately 21–46% with relatively low additional holding costs.

The ROA = ROE equivalence (both 60.05%) confirms the study's capital structure finding 70% of traders use personal savings (zero debt), so equity equals total assets there is no leverage effect differentiating the two ratios. This zero-leverage structure means that the business risk is entirely absorbed by owner equity, which simultaneously generates maximum return but maximum personal downside from purchase price shocks. The GPM–NPM spread (21.77%–20.30% = 1.47%) is extremely narrow reflecting the 1.9% fixed cost structure. This near-zero gap between gross and net margins is a signature of variable-cost-dominant businesses: once variable costs (92.1% of TC) are recovered, virtually all residual gross profit flows directly to net profit.

4.5 Factors Influencing Profitability

Table 6. Factors influencing profitability among 20 live broiler chicken traders at Pasar Sentral Mimika

Rank	Factor	Mechanism	Supporting Literature	Policy Implication
1	Purchase price from local farmers	Accounts for 92.1% of total costs, with a IDR 5.000 price increase reducing net profit by 30%	Fachri, Daulay, Hanafi, Tafsir, and Mirwandhono (2017)	Price stabilization partnership programs
2	Holding period duration	1–3 days optimal, price increment exceeds cumulative holding costs. Margins decline beyond >4 days	Rahman (2021)	Training on optimal holding management
3	Local transportation costs	Only 0.3% of total costs due to the short 5–30 km supply radius	Boimah, Chibanda, Schott, and Awuni (2022)	Road infrastructure maintenance
4	Feed and vitamins during holding	Holding costs account for 4.0% of total costs, with feed exceeding 60% and increasing with holding duration	Kumar, Patil, Chinnappa, and Manjunatha (2019)	Feed subsidy or cooperative purchasing

Rank	Factor	Mechanism	Supporting Literature	Policy Implication
5	Sales volume / buyer count	Higher sales volume increases revenue, distributes fixed costs, and supports economies of scale.	Chibanda, Wieck, and Sall (2024)	Market promotion, customer retention
6	Physical condition of chickens	Healthy chickens with optimal weight attract premium prices and sell faster, as physical condition is a key purchasing factor.	Rahman (2021)	Veterinary support at point of purchase
7	Community purchasing power (PTFI economy)	PT Freeport-driven income enables premium pricing and stable demand regardless of national price fluctuations	Adeyonu and Odozi (2022)	Protect PTFI-linked economic multipliers

Table 6 shows the unanimity of all seven factors (100% agreement) across all 20 traders confirms that profitability determinants are not idiosyncratic but structural they reflect the common economic environment all traders share. Purchase price dominance (Factor 1) establishes the profit floor: all other factors are optimizations within the constraint set by the IDR 60.000 farm-gate price. Community purchasing power (Factor 7) sets the profit ceiling: Mimika's PTFI-elevated income enables premium pricing (IDR 72.500–87.500/ekor) that would be impossible in lower-purchasing-power markets. The holding period (Factor 2) is the primary internal management lever within this ceiling-floor range the factor most directly under trader control. Factors 3–4–6 (transport cost, feed cost, chicken condition) form the operational efficiency cluster: their simultaneous optimization defines the difference between the 11% direct-sale margin and the 24.3% maximum holding margin.

5. Conclusions

This study concludes that live broiler chicken trading at Pasar Sentral Mimika is profitable and financially feasible. Average monthly revenue reaches IDR 192.110.000, with total costs of IDR 153.078.000 and net profit of IDR 39.032.000. Local sourcing within a 5–30 km radius minimizes transportation costs, while a holding period of 3–4 days generates the highest observed profit margin of 24.3%. Business feasibility is supported by an R/C ratio of 1.255, a break-even point of 159 birds per month, a margin of safety of 93%, and an ROI of 60.05% per month. Profitability is influenced by purchasing prices, holding duration, transportation costs, feed and vitamin expenses, sales volume, chicken condition, and consumer purchasing power. Overall, efficient local procurement, effective holding period management, and favorable market conditions contribute to the profitability and financial viability of live broiler chicken trading in Mimika Regency.

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Author Contributions

A contributed to the conceptualization, research design, data collection, field observation, data analysis, interpretation of results, and preparation of the initial manuscript. JAM contributed to the development of the research methodology, validation of analytical approaches, supervision, critical review, and improvement of the manuscript. HH contributed to the theoretical framework

development, academic supervision, manuscript evaluation, and final approval of the submitted version. All authors participated in discussing the findings, critically reviewed the manuscript, and approved the final version for publication.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article. The research was conducted independently, and no financial, institutional, or personal relationships influenced the research design, data collection, analysis, interpretation of results, or preparation of the manuscript.

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