Economic Sustainability in Agricultural Business: A Comparative Feasibility Analysis of Melon Varieties for Small-Scale Farmers

Dewi Gayatri[1], Rachmi Satwhikawara[2], Lukas Sangka Pamungkas[3], Filda Rahmiati[4*]

[1,2,3]Faculty of Business, President University, Cikarang, Indonesia

[4]Fakulti Pengurusan Teknologi dan Teknousahawanan, Universiti Teknikal Malaysia Melaka, Malaysia

***Corresponding Author**

DOI: https://doi.org/10.47772/IJRISS.2026.100601131

Received: 28 June 2026; Accepted: 04 July 2026; Published: 13 July 2026

ABSTRACT

Economic sustainability is an important factor for long-term agricultural business. It refers to the situation in which farmers face increasing pressure to maintain profitability while also addressing production challenges and market volatility. The case involved premium melon cultivation, where variety selection becomes a strategic management decision because each variety has unique characteristics in terms of production durability, fruit quality, and consumer preference, all of which have a direct impact on the farm's financial performance. A comparative economics report is available to assist decision-makers in selecting melon varieties that will improve long-term business sustainability. This study assesses the economic viability of Sweet Net and Okasa F1, a variety grown by Beken Community in Sukajaya, Bekasi. The case used financial indicators such as Gross Profit Margin (GPM), Benefit-Cost Ratio (BCR), Break-Even Point (BEP), and Payback Period, as well as a qualitative descriptive analysis from a Beken Community team member. The case results show that the Sweet Net outperforms Okasa F1 in terms of economic performance, with a gross profit margin of 39%, a Benefit-Cost Ratio of 1.6, and a quick payback period of approximately three years. According to the operations and marketing team, Sweet Net is more susceptible to fruit cracking and, as previously stated, requires extensive maintenance support. According to the statement, the improved profitability was largely attributed to its sweeter taste, crisper texture, and consumers' willingness to pay a higher price. Okasa F1's sweetness and fruit character appear to be less appealing to market value, resulting in a lower investment return, despite significantly lower production costs and better fruit durability. The findings demonstrate the potential for variety to generate profit for farmers by investigating how plant resistance, fruit traits, and customer preferences influence economic outcomes in the Beken Community. This approach may provide melon farmers and stakeholders with insights into optimising variety selection for strategic socioeconomic decisions. This study provides both short-term financial liquidity and long-term community resilience; it also improves the community business model.

Keywords: Agricultural, Business Sustainability, Small-Scale Farmers, Seed Varieties

INTRODUCTION

Indonesia is known as an agrarian country, indicating that the agriculture sector is a major driver of the national economy. The agricultural sector's contribution to economic growth results in significant benefits in GDP; according to the BPS, the agricultural sector will contribute 12.61 percent of the national economy in 2024. Besides the massive economic contribution, the agriculture sector has contributed in job creation, which significantly contributes to decreasing the unemployment rate. As mentioned by the Secretariat General of the Ministry of Agriculture of Indonesia, the agriculture sector contributes to 28,64 percent of the Indonesian workforce, commenting on its role as the lifeblood of Indonesian industry (Secretariat General of the Ministry of Agriculture, 2024). The massive contribution to the sector, especially supported by horticulture crop production, which enriches the livelihoods of rural citizens through job creation and income diversification (Kamaludin et.al., 2024). For example, Hartono et al. (2023) found that melon remains a promising product to cultivate due to the

increasing trend of melon consumption. Cahyani et al. (2024) stated that the national trend of melon consumption is expected to increase year after year due to the growing population.

However, rising demand highlights what this study refers to as the Melon Paradox: despite strong and growing market potential, domestic melon production has been unable to keep up, resulting in limited income gains for smallholder farmers who cultivate the crop. A statement from the Directorate General of Horticulture in 2022 declares that melon production can only meet 40% of national demand. To control the market's unbalanced supply, the government must inevitably import melons, which has a negative impact on the country's economic growth (Linda et al., 2019). As shown in Figure 1, national melon production fell from 2020 to 2023 before recovering modestly in 2024; however, current output is insufficient to close the significant 60 percent national demand gap identified by the Directorate General Horticulture in 2022.

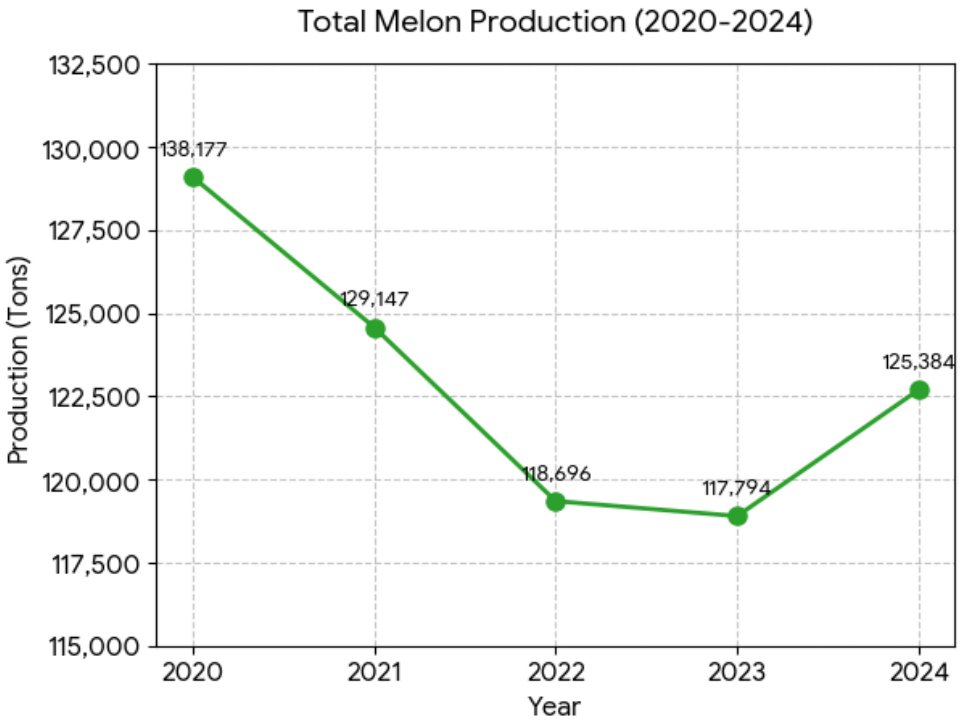

Figure 1. Tren melon production in Indonesia

Looking at the regional level, West Java has improved its melon production capability by expanding its land area. Melon cultivation area increased by 48 percent, from 78 hectares in 2021 to 114 hectares in 2024. Unfortunately, production volume decreased from 1,291 tonnes to 1,253 tonnes, resulting in a productivity increase from 13.2 tons/ha to 14.0 tons/ha during the same period. The fact that Bekasi Regency was the main location in this case study in 2024 contributed to the production capacity of 3.011,71 quintals in 5.6 Ha land production (West Java Province Statistics Agency, 2020), which is consistent with Wang's (2022) observation that land expansion increases supply capacity. However, land expansion alone does not resolve the paradox. The underlying issue is that productivity gains measured in tonnes per hectare do not always translate into farmer profitability or business viability. This distinction motivates the current study's shift in focus from how much is produced to which resources generate long-term economic returns. The comparative study is one of the methods used in agriculture to investigate the ability of varieties to maximise potential business outcomes.

Melon provides a comparative advantage among horticultural crops: it can be cultivated throughout the year and reaches harvest within 55-77 days, with fruit sizes ranging from small (around 400 grammes) to large (over 2.5 kg), and quality distinguished by taste, texture, aroma, plant durability, and ease of cultivation (Rindyani, 2011). Among the varieties available in the Indonesian market, Sweet Net—introduced from Thailand—is known for its juicy texture, sweetness reaching 14-18° Brix, and early harvest cycle (Erliana, 2024). Okasa F1, developed by Bintang Asia, has firm orange flesh, sweetness up to 15°Brix, and strong disease resistance (Bibit Bunga, n.d.), but Efrani et al. (2024) measured a lower sweetness range of 7.88-10.61°Brix for the variety. Looking for literature characteristics is important because they shape consumer preference, which shapes the value dimension

of any variety treated as a resource. Hidayat (2024) discovered that consumers in Bogor prioritise sweet taste, larger size, and affordable price as the primary purchase considerations, whereas Hartono et al. (2023) discovered that traditional retail in Yogyakarta is more likely to choose to buy smaller melons, whereas modern retail prefers larger ones, demonstrating that "value" in the market segment is dependent rather than absolute.

The application to variety selection decisions in small-scale agriculture is largely unexplored. Existing financial feasibility studies primarily focus on profitability indicators. Padapi et al. (2023) found that Okasa F1melon can generate over Rp432,649,317 in annual net profit in a community-based setting using BCR, BEP, and ROI, whereas Laras (2025) discovered that Sweet Net melon has an R/C Ratio of 6.79 in Kabupaten Jombang. Meanwhile, Padapi et al. (2023) found a B/C Ratio of 9 for Okasa F1, indicating high and profitable rates of return. However, these studies rarely look into whether a seed variety can be used as a strategic resource to generate long-term competitive advantage within the operational constraints of a smallholder farming system.

Small-scale farmers often lack financial decision-making tools that combine profitability with long-term investment sustainability (Raharjo et al., 2023). They have few options for determining whether the payback period of a specific variety is compatible with the economic lifespan of expensive cultivation infrastructure, such as greenhouses and hydroponic systems. According to these, farmers tend to select varieties that appear profitable in the short term while ignoring a business sustainability analysis in terms of the ability to recoup infrastructure investments before asset depreciation occurs, which has yet to be thoroughly evaluated. To illustrate this situation and develop a long-term business strategy, this study will conduct a direct assessment using a case study of the Beken Community, which grows the Sweet Net and Okasa F1 varieties in a premium melon cultivation system in Sukajaya Village, Cibitung, Bekasi, West Java.

Explain the study's situation, which is the research problem as stated below:

1. How do the Sweet Net and Okasa F1 melon cultivation systems in the Beken Community compare in terms of gross profit margin (GPM), benefit cost ratio (BCR), break-even point (BEP), and payback period (PP) over a single harvest period?

2. Which variety, Sweet Net or Okasa F1, has the highest profitability for the next planting cycle?

3. How do internal perceptions of Beken Community stakeholders (leadership, finance, and production) support the financial performance and strategic positioning of the Sweet Net and Okasa F1 varieties?

LITERATURE REVIEW

International scholarship is increasingly emphasising the importance of combining strategic crop selection, resource allocation, and long-term policy planning in order to transition to more resilient agricultural systems. According to Boyabatlı et al. (2019), dynamic farmland allocation, including inter-seasonal benefits like crop rotation, serves as an economic buffer against yield and market volatility. In applied regional settings, targeted crop selection frameworks have proven to optimise smallholder productivity and mitigate climate risks, as seen in South Africa's semi-arid regions (Kephe et al., 2022). However, macro-level evaluations of Rwanda's crop consolidation programmes demonstrate that top-down agronomic mandates can fail if they ignore localised biophysical constraints and household-level financial realities (Miklyaev et al., 2020). As a result, sustainable agricultural development relies on multidimensional evaluation frameworks that balance agronomic potential with economic infrastructure, a principle reinforced by comprehensive econometric and cost-benefit assessments of irrigation and farming systems in post-conflict environments like Iraq (Zagonari, 2017).

While strategic agronomic planning determines technical feasibility, the ultimate adoption and commercial viability of any cropping system are heavily reliant on financial competitiveness. Evidence from cold-climate agricultural rotations in Newfoundland and Labrador, as well as competitiveness analyses of improved soybean varieties within Indonesian rice-based rotations, confirm that technical success is insufficient without superior market returns relative to substitute crops (Krisdiana et al., 2021). To rigorously evaluate agribusiness potential, empirical feasibility models must examine three core business components: initial capital outlay for infrastructure and cultivation systems, cumulative operational production costs, and market-driven revenue derived from total

marketable output (Soetriono & Soedjono, 2020). These financial baselines enable researchers to calculate critical performance indicators, such as Gross Profit Margin (GPM), Benefit-Cost Ratio (BCR), Break-Even Point (BEP), and Payback Period (PP), which collectively gauge capital efficiency, risk mitigation, and overall commercial sustainability (Rochaeni et al., 2022).

The imperative to balance operational costs with high market value finds direct application in short-cycle horticultural crops, particularly in melon (Cucumis melo L.). Melon has a distinct comparative advantage in agribusiness due to its ability to be cultivated year-round and its short maturity cycle of 55 to 77 days, allowing for rapid capital turnover and multiple harvest cycles per year. However, maximising commercial returns within specific consumer markets requires selecting cultivars that balance operational durability with preferred sensory attributes, such as fruit weight (ranging from 400 grammes to more than 2.5 kg), taste, aroma, and flesh texture (Rindyani, 2011). Recently introduced varieties exhibit distinct trade-offs between sensory appeal and cultivation challenge. Sweet Net, an early-harvest variety introduced from Thailand, commands strong market popularity due to its juicy texture and high sweetness reaching 14-18° Brix (Erliana, 2024). Okasa F1, a hybrid developed by Bintang Asia, provides robust disease resistance and firm orange flesh, with documented sweetness levels ranging from 7.88 to 15°Brix (Bibit Bunga, n.d.; Efrani et al., 2024).

Research Gap and Rationale in the Beken Community Context

Despite the well-documented importance of financial feasibility metrics and cultivar trait evaluation, empirical research on the microeconomic performance of emerging premium melon varieties is fragmented. While previous agricultural studies compared the financial income of older varieties such as melon Action and Apollo using Revenue-to-Cost (R/C) ratios, and other analyses evaluated Okasa F1 in isolation using BCR, BEP, and Return on Investment (ROI), there is a distinct lack of comparative economic research comparing Sweet Net to Okasa F1. This literature gap is especially pronounced in terms of how consumer flavour and texture preferences directly affect farm-level profitability in localised consumer markets. By systematically comparing Sweet Net and Okasa F1 within the Beken Community using core financial indicators (GPM, BCR, BEP, and PP), this study connects global agribusiness feasibility principles with local consumer demand, providing actionable data to maximise smallholder profitability and commercial sustainability.

RESEARCH METHODOLOGY

Research Design

This research study utilised a single case study design. A single case study is a research design that focuses on one specific case or phenomenon (Gaya & Smith, 2016). The single case study focuses with a descriptive comparative (Creswell & Creswell, 2018), which aims to deeply analyse the economic viability and perceptions of Beken Community members regarding the cultivation of premium melon varieties Sweet Net and Okasa F1. To gain a comprehensive understanding of this study, a mixed-methods approach was employed, combining quantitative data for financial analysis with descriptive analysis to gain deeper insight into the achievements and to support the findings within the real-world context of the Beken community, with a view to converting the decisions into long-term strategies for business sustainability.

Research Location and Time

This study was carried out at the Beken Community's agricultural facility in Cibitung, Bekasi Regency, West Java, Indonesia, to ensure the objectivity of research on agricultural business development in the premium melon industry. The observations, which included process analysis, primary data collection, and financial monitoring, took place between February and April 2025. The chosen timeframe covers the entire operational cycle of melon cultivation, beginning with pre-harvest preparation and ending with post-harvest sales.

Data Collection

To ensure the integrity of the study and the protection of the business entity, strict ethical protocols for participant anonymity were implemented. The primary data for this case study was gathered through interviews and on-site observations of the actual melon cultivation system in the Beken community. Before conducting individual

interviews, the writer seeks permission from the Beken Community leader in accordance with ethical guidelines for community-based research. To maintain objectivity and protect professional standing, the participants' names were anonymized and identified only by their roles in the organisational structure. Participants included:

Community Leader: Explained why Sweet Net and Okasa F1 were chosen for cultivation, as well as his personal opinion on which variety produces the most profit.

Treasurer Staff: Shared financial data on which varieties generated the most profit, including product price and quantity sold.

Marketing Staff: Explained which variety attracted the most customers during harvest season, including sweetness, colour flush, and flush texture, based on market preferences.

Production Staff: We discussed which variety was easier to cultivate based on plant durability and crop losses.

The data collection focuses on three key areas: variety distribution, business objectives, and the profitability of each variety during cultivation. The quantitative data was gathered by requesting permission to access internal financial reports, which included the detailed cost production structure, the types of fixed and variable costs, and sales data detailed information based on the quantity of Sweet Net and Okasa F1 varieties and their prices.

Secondary data for this study were gathered from the National Statistics Agency (BPS) (2025) for interest projections and the Directorate General of Economic and Fiscal Strategy (2024) as a reference growth business rate. This secondary data is expected to serve as support data for completeness when conducting economic analysis.

Data Processing and Data Analysis Methods

This study employs triangulation data validation, which involves collecting financial data reports, onsite observation, and conducting an interview session with key informants.

In this case study of quantitative analyst data, there are aggregate costs between Sweet Net and Okasa F1, so the analyst will allocate costs proportionally based on each variety's distribution seed. The main indicators for this case study are Gross Profit Margin (GPM), Benefit Cost Ratio (BCR), Break Even Point (BEP), and Payback Period (PP) as economic indicators. The analyst will present the results, which will indicate the viability of the melon cultivation business in the Beken Community.

The research employs descriptive analysis to provide context in the current state and situations of the Beken Community. It explains the "why" behind the number of financial reports. This analysis would be able to supplement the quantitative data in order to provide a comprehensive understanding of the challenges and opportunities of each variety from the respondent's perspective.

RESEARCH RESULT AND DISCUSSION

Cultivation Profile and Infrastructure

Beken Community maintains a 300 m² greenhouse in Sukajaya Village, Bekasi Regency, West Java. The greenhouse's infrastructure is made of mild steel and UV plastic roofing in accordance with Philippine Agricultural Engineering standards. The land measures 30 x 10 metres and can support up to 1,000 melon plants. Hydroponic systems with cocopean media and drip irrigation are used for efficient nutrient delivery.

Seed Distribution and Cultivation Strategy

In their first cultivation cycle, Beken Community allocated 700 seeds to Sweet Net (80%) and Okasa F1 (20%), for 560 and 140 seeds, respectively. The seed distribution is calculated to determine the economic feasibility of the Sweet Net and Okasa F1 varieties based on the amount of input distribution data.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume X Issue VI June 2026

Cost Structure

Melon cultivation costs in the Beken Community are divided into two categories: initial investment and production costs. The initial cost includes greenhouse construction, hydroponic NFT installation, drip irrigation system, and electricity setup, totaling Rp82,555,100.

The cost of production is entirely variable, depending on the volume and frequency of production. Between Sweet Net and Okasa F1, production is calculated as an aggregate and separated based on the total seed distribution. The total variable cost, including nutrients, pesticides, and harvesting, is Rp7,871,000.

Table 1. Cost of Production

	Sweet Net	**Okasa F1**
	(560 seeds)	**(140 seeds)**
Cost Production (Before)	Rp6,296,800	Rp1,574,200
Seeds Cost	Rp700,000	Rp417,200
Total Cost Production (After)	**Rp6,996,800**	**Rp1,991,400**

Revenue Analysis

Beken Community established a price strategy based on time periods, including Pre-Harvest, which is priced at Rp40,000 for customers who arrive early without an invitation and approximately one week before the daytime harvest. The price for Day Time Harvest is Rp50,000, with the customer receiving a souvenir and a free melon cultivation consultation as an added value product. The last option is Pasca-Harvest, which has a set price of Rp35,000 to replenish fruit stock at the end. Table 2 shows the total revenue and quantity in kilogrammes of melon sold out. The table shows the sales quantities, price per kilogramme, and revenue generated for two melon varieties, Sweet Net and Okasa F1, at three different harvest stages (pre-harvest, harvest day, and post-harvest). Sweet Net accounted for the vast majority of sales volume and revenue, contributing Rp11,501,800 to the total combined income of Rp13,830,000.

Table 2. Revenue

Items		**Quantity (/Kg)**	**Price (Rp)**	**Revenue**
Sweet Net	Pre-Harvest	100.5	Rp40,000	Rp4,021,600
	Harvest Day	140.8	Rp50,000	Rp7,042,000
	Pasca Harvest	12.5	Rp35,000	Rp438,200
	TOTAL	**253.9**	**Rp45,301**	**Rp11,501,800**
Okasa F1	Pra-Harvest	12.3	Rp40,000	Rp492,000
	Harvest Day	17.7	Rp50,000	Rp883,500
	Pasca Harvest	27.2	Rp35,000	Rp952,700
	TOTAL	**57.2**	**Rp40,710**	**Rp2,328,200**
TOTAL INCOME				**Rp13,830,000**

Economic Indicators

Gross Profit Margin (GPM)

In the case of melon cultivation in the Beken community, Gross Profit Margin (GPM) results show significant differences in economic performance between melon varieties that are largely unaffected by the price of the product sold. Sweet Net generated revenue of Rp11,501,800 against expenses of Rp6,996,800, resulting in a GPM of 39 percent, whereas Okasa F1 generated 14 percent against revenue of Rp2,328,200 and expenses of Rp1,991,400. According to Ms. D, a treasure in the Beken Community, "The Sweet Net market is more profitable in terms of customers' willingness to pay in the day harvest." The difference reflects in different seed quality in influencing market preference; Sweet Net has a more sweet taste and crunchy texture, whereas Okasa F1 has a lower sweet taste level and a juicy flush texture, as mentioned by Mr. C in marketing.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume X Issue VI June 2026

Table 3. Gross Profit Margin (GPM)

Variety	Income	Expenses	GPM
Sweet Net	Rp11,501,800	Rp6,296,800	39%
Okasa F1	Rp2,328,200	Rp1,574,200	14%

Benefit-Cost Ratio (BCR)

The BCR indicator in this case study of Sweet Net and Okasa F1 melon cultivation revealed that Sweet Net has a BCR of 1.6, while Okasa F1 has a BCR of 1.2. Between those two types, varieties shown positively result in the requirement justification BCR > 1, highlighting that cost production can access the investment payback (Pannell et al., 2023). Mr. A, as the leader in the context of operational challenges, may have hinted that Okasa F1 was chosen for affordability and to complement the greenhouse space, but he also acknowledges its lower profit margin. Meanwhile, Mr. A clarifies that Sweet Net seeds were reused from previous cycles, which may result in different prices in future cultivation cycles. In terms of seed quality, Sweet Net's sweet level attraction can justify higher pricing, increasing relative to cost as previously mentioned by Ms. D as a treasure in the Beken Community.

Table 4. Benefit-Cost Ratio (BCR)

Sweet Net	**Okasa F1**
1.6	1.2

Break-Even Point (BEP)

Sweet Net's BEP value was 154.45 kg, while actual production was 253.90 kg, significantly exceeding the minimum threshold required to assess the company's profitability. Furthermore, in the context of fruit durability, Mr. B, a staff member, explains that "Sweet Net has weak plant resistance and sensitivity to cracking," but the high yield supports cultivation practises that effectively mitigate these plantation risks. This statement is consistent with Hakim's (2024) study, which discovered that the Sweet Net variety can produce 250.2 kg in a hydroponic cultivation system; the study's findings suggest that this system improves the variety's resilience and profitability in a controlled environment. Meanwhile, research findings indicate that the Okasa F1 variety has a break-even point (BEP) of 48.92 kg, with an actual harvest of 57.19 kg; this minor difference is influenced by market prices in relation to the fruit's taste quality. Despite this discrepancy, Mr. B, a production staff member, cited the fruit's resilience and the thickness of Okasa F1's skin as significant advantages in cultivating this variety. The plant's resilience is especially beneficial in water-scarce conditions, which, as is frequently the case, can result in post-harvest losses by reducing the amount of fruit that does not meet market specifications.

Table 5. Break-Even Point (BEP)

Sweet Net		**Okasa F1**	
BEP (Kg)	**Actual (Kg)**	**BEP (Kg)**	**Actual (Kg)**
154.45	253.90	48.92	57.19

Payback Period

Sweet Net can reach a fast recovery investment point in 3 years and 2 months based on a projected cashflow of 3.65 percent growth income with fixed costs. Meanwhile, under the inflation-cost scenario of 2.36 percent with fixed growth income, the return showed a three-year and seven-month delay in investment returns. Based on the findings, a shorter payback time reinforces Sweet Net's strong market appeal, as highlighted by Ms. D as a treasure in Beken Community, who observed on-site that customs are "willing to pay at harvest time" due to the attraction of Sweet Net seed quality. The findings are similar to those of Ghesitt (2025), who investigated Sweet Net melon farming with hydroponic NFT systems and reported a payback period of 2.84 years, confirming its financial feasibility and rapid return potential. On the contrary, the Okasa F1 payback period was longer than the economic life of 5 years, taking 5 years and 10 months in the cashflow projection scenarios with a 3.65% growth

income and fixed costs. Meanwhile, in the inflation-cost scenario, the Okasa F1 predicts a slower return in 7 Years 6 Months. This was consistent with the insight of Mr. A, the leader of the Beken Community, who clarified that the variety was chosen due to its low cost during the cultivation process and as a market testing experiment, despite the fact that it generates lower profit margins. Furthermore, Mr. B, a production staff member at Beken Community, noticed that the Okasa F1 has good plant durability in fruit protection due to the "thickness of the fruit skin structure." Padapi et al. (2024) reported a high ROI for Okasa F1.

Table 6. Payback Period

	Sweet Net	**Okasa F1**
Cashflow Scenario of Growth Income 3,65%	3 Years 2 Months	5 Years 10 Months
Cashflow Scenario of Interest Rate 2,36%	3 Years 7 Months	7 Years 6 months

DISCUSSION

Sweet Net outperforms across all financial indicators. Absolute profit is the most important factor for smallholder farmers, and Sweet Net leads the way with a Gross Profit Margin (GPM) of 39% and a Benefit-to-Cost Ratio (BCR) of 1.6. This calculation reveals a significant positive difference between revenue and production costs, significantly increasing its financial viability when compared to Okasa F1, which had a much lower GPM of 14 percent and a BCR of only 1.2.

Analyzing the payback period in this case reveals a critical sustainability conflict. Sweet Net has a quick payback period of about three years, which indirectly ensures the company's financial and operational sustainability. In contrast, the Okasa F1's payback period exceeds the lifetime span by 5 years. According to the analysis, this may pose a structural risk to the Beken Community because the payback period significantly exceeds the physical lifespan of the greenhouses, and it lacks the capacity to support agricultural infrastructure for continued operations.

Despite having lower plant endurance, the Sweet Net variety's higher yields, sweeter flavour profile, and higher break-even point are justified by its high market price and widespread appeal. Without exception, Okasa F1 continues to provide distinct advantages in terms of fruit durability and initial cost efficiency, making it ideal for experimental cultivation or as a hedge against crop failure caused by production errors. This dynamic lends support to the concept of double benefits in agricultural management. Within this framework, Sweet Net is the primary driver of capital accumulation, providing the substantial wealth required to improve agricultural infrastructure and expand long-term operations. Furthermore, Okasa F1 provides lower initial seed investment and longer-term crop yields, ensuring the consistent liquidity needed to manage short-term cash flow and pay daily agricultural labour costs.

Taking all factors into account, these findings strongly recommend that the Beken Community implement a strategic diversification model that effectively creates a Market Matrix portfolio. Rather than relying solely on a single variety, this two-variety approach enables farmers to effectively use Sweet Net in high-return strategies during peak growing seasons and favourable market conditions. Okasa F1 also serves as a defensive pillar within the matrix, ensuring resilience and operational stability in the face of adverse environmental changes or unpredictable market shifts. By balancing profitability-generating crops with liquidity-protecting crops, the Beken Community can develop an optimal and long-term strategy that maximises economic growth while successfully mitigating agricultural uncertainty.

CONCLUSION

Economic sustainability is demonstrated by the Beken Community business, which specialises in the cultivation of two different premium melon varieties. The comparative study reflects the calculation used by the financial indicator in the data report. This research adds context by presenting in-depth insights from Beken Community's management and operations teams. The results show that Sweet Net outperforms Okasa F1 in terms of financial performance across economic indicators. Refers to long-term investment analysis to determine the ability to recoup investment in order to maximise space and resources. Sweet Net has proven to be a more viable and

profitable crop as a result of its prevalence. According to Ms. D's statement in the financial report, the value of Gross Profit Margin (GPM) is directly influenced by high customer demand for variety during harvest day, confirming the superiority in the ability to cover operational expenses.

In terms of durability, Okasa F1 performs well in operational conditions, according to production staff member Mr. B, who explained that the fruit's quality remains consistent even during crises. As previously stated, the operational advantages may be considered by the Beken Community if they prefer to choose durable fruit that is easier to maintain due to the crop profile's character. In line with recent economic indicators, Okasa F1 has a narrow income margin and a limited financial safety net. A break-even point (BEP) analysis shows a reasonable safety margin, whereas Okasa F1 indicates a high level of financial vulnerability. This financial risk is partially offset by the variety's growth characteristics, particularly its exceptional fruit physical durability.

Through this case study research, a comparative economic feasibility analysis has evolved beyond the calculation of financial indicators to become a strategic framework for promoting economic sustainability in agricultural businesses. The approach supports investment decisions that align with long-term business objectives by examining each variety's financial viability as well as gaining a deeper understanding of production characteristics and market potential. The case of Sweet Net and Okasa F1 demonstrates that economically sustainable variety selection necessitates a balance of profitability in terms of operational resilience and market opportunity. Farmers, agricultural businesspeople, and extension practitioners are encouraged to conduct comparative analyses in order to maximise resource allocation, reduce investment risk, and strengthen agricultural businesses' long-term sustainability and competitiveness. In order to enhance the robustness and generalizability of the findings, it is possible that it will be necessary for future research to incorporate larger samples, multiple farming communities, and sensitivity or risk analyses.

ACKNOWLEDGEMENTS

The author respectfully admires the collaboration between President University and Universiti Teknikal Malaysia Melaka, and thanks Rachmi Satwikawara, lecturer of the Agribusiness Study Program at President University, for her assistance in completing the research. Thank you, Hafidz Faidillah, leader of the Beken Community, for allowing the author to use the community as a research object and gain a better understanding of the phenomenon. Sincere gratitude to Dr. Filda Rahmiati, lecturer at Universiti Teknikal Malaysia Melaka, and Lukas Sangka Pamungkas, Lecturer of the Agribusiness study programme at President University, for their valuable advice on improving the writing manuscript. The author also thanks the lecturers and administrative staff at President University for their encouragement and support throughout the completion of his degree.

REFERENCES

1. Boyabatlı, O., Nasiry, J., & Zhou, Y. (2019). Crop planning in sustainable agriculture: Dynamic farmland allocation in the presence of crop rotation benefits. Management Science, 65(5), 2060-2076.
2. Cahyani, R. D., Hidayat, K., & Kustanti, A. (2024). Adopsi inovasi budidaya melon (*Cucumis melo* L.) dengan teknologi greenhouse di Kecamatan Wates Kabupaten Blitar. *Jurnal Ekonomi Pertanian dan Agribisnis, 8*(2). doi:10.21776/ub.jepa.2024.008.02.14
3. Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approach (5th ed.). Thousand Oaks, CA: SAGE Publications.
4. Directorate General of Horticulture (2022). Outlook komoditas hortikultura: Melon 2022 [Horticulture commodity outlook: Melon 2022]. Kementerian Pertanian Republik Indonesia.
5. Efrani, D. E., Herison, C., & Rustikawati. (2024). Keragaan pertumbuhan dan hasil empat varietas hibrida melon (Cucumis melo L.) pada beberapa frekuensi fertigasi NPK. Prosiding Seminar Nasional Pertanian Pesisir (SENATASI), 3(1), 217–231.
6. Erliana, W. T. (2024, March 25). Ragam varietas melon premium idaman pekebun. Trubus.id. Retrieved from https://trubus.id/ragam-varietas-melon-premium-idaman-pekebun/
7. Gaya, H. J., & Smith, E. E. (2016). Developing a qualitative single case study in the strategic management realm: An appropriate research design. International Journal of Business and Economic Research, 7(2), 529–538. Retrieved from http://www.ijbmer.com/docs/volumes/vol7issue2/ijbmer2016070201.pdf

8. Ghesitt, M. P. (2025). *Kelayakan usahatani melon varietas Sweet Net menggunakan metode hidroponik Nutrient Film Technique (NFT) di Kiano Farm, Pajangan* (Skripsi, Universitas Muhammadiyah Yogyakarta). ETD UMY.
9. Hartono, T. T., Khuriyati, N., & Aziz, I. W. F. (2023). Analysis of consumers' preferences for melon using the conjoint method. Agroindustrial Journal, 9(1), 22. doi:10.22146/aij.v9i1.80861
10. Hidayat. (2024). Preferensi konsumen terhadap atribut buah melon (Cucumis melo L.) dalam melakukan keputusan pembelian di Kabupaten Bogor. Retrieved from https://repository.ub.ac.id/id/eprint/234465
11. Irawan, E., Agustono, A., & Andriani, I. S. (2023). Pola alokasi buruh tani dan pengaruhnya terhadap produktivitas usahatani melon: Pendekatan generalized additive model. JSEP (Journal of Social and Agricultural Economics), 16(2), 159. doi:10.19184/jsep.v16i2.39405
12. Kamaludin, K., Harisudin, M., Sutrisno, J., & Irianto, H. (2024). A structural equation modelling approach in assessing the sustainability of Indonesian smallholder oil palm farming. Journal of Ecohumanism, 3(4), 3368.
13. Kephe PN, Siewe LC, Lekalakala RG, Kwabena Ayisi K and Petja BM (2022) Optimizing Smallholder Farmers' Productivity Through Crop Selection, Targeting and Prioritization Framework in the Limpopo and Free State Provinces, South Africa. Front. Sustain. Food Syst. 6:738267. doi: 10.3389/fsufs.2022.738267
14. Krisdiana, R., Prasetiaswati, N., Sutrisno, I., Rozi, F., Harsono, A., & Mejaya, M. J. (2021). Financial Feasibility and Competitiveness Levels of Soybean Varieties in Rice-Based Cropping System of Indonesia. Sustainability, 13(15), 8334. https://doi.org/10.3390/su13158334
15. Laras, A. (2025). Efisiensi Budidaya Tanaman Melon (Cucumis melo L) Varietas Sweet Net Menggunakan Bedengan Pada Greenhouse di Sumber Melon Kabupaten Jombang [Thesis]. Politeknik Negeri Jember. https://sipora.polije.ac.id/43258/
16. Linda Sari, N., Rahim, A., & Bado, B. (2019). Analisis fluktuasi nilai impor di Indonesia. Program Studi Ekonomi Pembangunan, Fakultas Ekonomi, Universitas Negeri Makassar. Retrieved from https://eprints.unm.ac.id/15162/1/Jurnal%20Nur%20Linda%20Sari%201496140003.pdf
17. Miklyaev, M., Jenkins, G., & Shobowale, D. (2021). Sustainability of Agricultural Crop Policies in Rwanda: An Integrated Cost–Benefit Analysis. Sustainability, 13(1), 48. https://doi.org/10.3390/su13010048
18. National Statistics Agency. (2024). Produk Domestik Bruto Indonesia Triwulanan 2020-2024. Retrieved from https://www.bps.go.id/id/publication/2024/10/09/7290b829d2eaa972e4968d19/produk-domestik-bruto-indonesia-triwulanan-2020-2024.html
19. National Statistics Agency (2024). *Produksi tanaman sayuran dan buah-buahan semusim menurut jenis tanaman, 2022*. Retrieved from https://www.bps.go.id/id/statistics-table/3/VFV4MmQxaG9kakZrVUdWeEx6aDFUMnN6WmpocVp6MDkjMw==/produksi-tanaman-sayuran-dan-buah---buahan-semusim-menurut-jenis-tanaman--2022.html?year=2024
20. OECD and FAO. 2023. OECD-FAO Agricultural Outlook 2023-2032. Paris, OECD.
21. Padapi, A., Musdalifah, Hamina, Aisyah, Khamila, Reni, & Salman, F. (2023). Financial analysis of melon farming business in P4S Laskar Pelangi, Salo Dua Village, Maiwa Subdistrict. *Jurnal Abdi Insani, 11*(2), 159–168.
22. Purba, S. F., Yulianti, A., Astana, S., Djaenudin, R. D., Hariyadi, Simandjorang, B. M. T. V., Haradongan, F., & Istriningsih. (2023). The contribution of agricultural crop production towards the economic growth of Indonesia's agricultural sector. E3S Web of Conferences, 444, 02034. https://doi.org/10.1051/e3sconf/202344402034
23. Raharjo, K., Worokinasih, S., & Imamah, N. (2023). The impact of financial literacy on sustainability of small businesses: Government policy perspective. In *Macroeconomic Risk and Growth in the Southeast Asian Countries: Insight from Indonesia* (Vol. 33, pp. 19-33). Emerald Publishing Limited. Doi: https://doi.org/10.1108/S1571-03862023000033A002
24. Rindyani, R. (2011). Analisis kelayakan finansial budidaya melon hidroponik (Studi kasus: PT. Mekar Unggul Sari, Cileungsi, Bogor) (Undergraduate thesis). Universitas Islam Negeri Syarif Hidayatullah Jakarta, Fakultas Sains dan Teknologi, Program Studi Agribisnis.
25. Rochaeni, S., Puspita Sari, R. A., & Nuraeni, L. P. (2022). Cost structure and revenue of the odot grass cultivation business at PT. Villa Tani Indonesia. *Agribusiness Journal, 16*(2), 151–162. doi:10.15408/aj.v16i2.29380

26. Secretariat General of the Ministry of Agriculture (2024). *Statistik ketenagakerjaan sektor pertanian: Agustus 2024*. Jakarta: Kementerian Pertanian. Retrieved from https://satudata.pertanian.go.id/assets/docs/publikasi/Statistik_Tenaga_Kerja_Pertanian_SM_II_2024.pdf
27. Soetriono, T., & Soedjono, D. (2020). Challenges and opportunities for agribusiness development: Lessons from Indonesia. *Journal of Asian Finance, Economics and Business, 7*(9), 791–800. doi:10.13106/jafeb.2020.vol7.no9.791.
28. Wang, X. (2022). Managing land carrying capacity: Key to achieving sustainable production systems for food security. *Land*, *11*(4), 484.
29. West Java Province Statistics Agency (2020). *Luas panen tanaman sayuran dan buah-buahan semusim menurut kabupaten/kota dan jenis tanaman di Provinsi Jawa Barat, 2020*. Retrieved from https://jabar.bps.go.id/id/statistics-table/3/YlhOVmIxcG1abmRxVURoS1dFbFVTamhaUml0aWR6MDkjMw==/luas-panen-tanaman-sayuran-dan-buah-buahan-semusim-menurut-kabupaten-kota-dan-jenis-tanaman-di-provinsi-jawa-barat--2020.html
30. World Bank. (2024). Farming and agribusiness. Retrieved June 28, 2026, from https://www.worldbank.org/ext/en/topic/farming-and-agribusiness
31. Yunusov, S., Sadullayev, S., Khaitboyeva, G., & Sharipova, M. (2023). Selection of high-yielding, disease-resistant, promising, and export-oriented varieties of melons. E3S Web of Conferences, 389, 03044. doi:10.1051/e3sconf/202338903044
32. Zagonari, F. (2017). Combining Econometric, Cost–Benefit, and Financial Methodologies in a Framework to Increase Diffusion and to Predict the Feasibility and Sustainability of Irrigation Schemes: A Case Study in Kurdistan, Iraq. Water, 9(11), 821. https://doi.org/10.3390/w9110821