Dinamis : Journal of Islamic Management and Bussiness
https://ejournal.iainpalopo.ac.id/index.php/dinamis/index

Is the Business Viable, or Is the Investment Worthwhile? A Two-Level Appraisal of Capacity Investment in an Indonesian Micro-Bakery

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Volume : 9
Number: 2
Page: 242-254
Palopo, October 2026
ISSN 2622-3791
E-2716-0904
Date Received: 5 November
Date Revised: 6 November
Date Accepted: 18 November

Abstract: icro-enterprises often assess equipment purchases through owner judgement, while conventional feasibility studies tend to evaluate the business as a whole rather than the incremental investment. This study develops and applies a two-level appraisal to a planned IDR 4.43 million capacity investment at Aura Bakery, a micro-producer of roti gembong in Samarinda, Indonesia. Using a qualitative single-case design, interviews with the owner, one employee and two regular customers, non-participant observation, business records and capital-budgeting analysis, the study evaluates five non-financial dimensions and the financial position of the enlarged business. Whole-business analysis indicates viability, with an NPV of IDR 67.51 million at a 12% discount rate and a profitability index of 5.66. However, these figures do not establish that the new equipment itself creates value. Incremental analysis shows that the investment requires 11–16 additional units sold per month when existing staff absorb delivery, increasing to 57–85 units when a paid courier is required. The findings demonstrate that investment feasibility depends not only on production capacity but also on demand realisation, delivery arrangements and regulatory readiness. The proposed procedure translates the incremental NPV criterion into a practical demand threshold that micro-enterprise owners can monitor.

Keywords: capital budgeting; incremental cash flow; capacity investment; micro-enterprises; bakery; resource-based view.

Introduction

Micro, small and medium-sized enterprises (MSMEs) are central to Indonesia's economy, accounting for a substantial share of employment and output (Tahi Hamonangan Tambunan, 2011; Tambunan, 2022). Nevertheless, many small firms operate with limited managerial resources, incomplete accounting records and restricted access to finance (Collis & Jarvis, 2002). These constraints shape investment decisions: owners may rely on experience and liquidity-oriented rules rather than discounted cash-flow analysis. Recent research confirms that knowledge, time and methodological complexity can inhibit the adoption of sophisticated capital-budgeting techniques among SMEs (Schiuma et al., 2023). Yet structured appraisal matters because capital-allocation quality affects firms' ability to convert scarce resources into sustainable performance (Ma et al., 2025; Wang et al., 2025). For a micro-enterprise, an inappropriate equipment purchase may not appear as a formal project failure; it may instead result in idle capacity, constrained cash and persistently weak sales.

Samarinda provides a relevant setting for examining small food enterprises. Susenas data reported by BPS-Statistics Samarinda Municipality show that average monthly per-capita food expenditure increased from IDR 835,992 in 2022 to IDR 899,971 in 2023 (BPS-Statistics Samarinda Municipality, 2024). This aggregate measure provides economic context only; it does not establish demand for a particular bakery product. Because district-level data on bakery competition are unavailable, the competitive environment in Palaran was assessed through field observation and interviews.

Aura Bakery, a micro-enterprise in Bukuan Village, Palaran District, has produced roti gembong since 2021. Roti gembong is a large, soft bun sold plain or with sweet fillings. Monthly orders reportedly declined from approximately 300 to 200 units. The owner associates lost or delayed orders with a small oven and the absence of dedicated delivery capacity. To address the production constraint, the owner plans to purchase a larger oven, a mixer and gas equipment for IDR 4.43 million. Although modest in absolute terms, this expenditure is material relative to the firm's available funds. Its economic value depends on whether additional output can be converted into paid orders and delivered without creating disproportionate costs.

Business feasibility assessment conventionally combines market, technical, managerial, legal, environmental and financial considerations (Lee et al., 2009). However, a central analytical distinction is often overlooked: the viability of an existing business is not equivalent to the value created by a proposed investment. This distinction is particularly important when the firm already owns productive assets and is considering a marginal capacity expansion.

The literature points to three gaps. First, studies of small bakeries and other micro-enterprises commonly assess overall business feasibility, but do not isolate the incremental cash flows attributable to a specific equipment decision (Ilham, 2023; Maksum et al., 2024). Second, non-financial assessments are often presented alongside financial indicators without explaining how operational readiness, marketing capability or regulatory compliance affect the cash flows expected from the investment. Third, threshold and sensitivity analyses remain limited, despite the incomplete records typical of micro-enterprises. Recent SME research reinforces the importance of appraisal

capability: barriers include limited decision-maker knowledge and the perceived complexity of capital-budgeting methods (Schiuma et al., 2023), while empirical evidence from Indonesian firms suggests that sophisticated appraisal techniques can be relevant to financial performance (Darmansyah et al., 2025; Purnamasari & Adriza, 2024).

This study addresses these gaps through a two-level procedure. It first evaluates the viability of the enlarged business and then isolates the planned equipment expenditure using incremental cash flows. Where a reliable "without-investment" baseline is unavailable, the analysis solves for break-even incremental demand rather than reporting a speculative project NPV. The study also links non-financial readiness to three cash-flow channels: demand realisation, operational fulfilment and legal continuity. The contribution is methodological and practical, not a claim to establish a new general theory.

The study has three objectives: (1) assess the market and marketing, technical and operational, management and human-resource, legal and regulatory, and industry-competitive aspects of Aura Bakery; (2) evaluate the viability of the enlarged business using BEP, payback period (PP), NPV, IRR and PI; and (3) estimate the incremental demand required for the planned capacity investment to create value, including sensitivity to delivery costs and other operating conditions.

Literature Review

Theoretical Foundation

Capital-budgeting theory evaluates an investment by comparing its cost with the present value of the cash flows attributable to it. NPV is the primary decision criterion because it incorporates the time value of money and the opportunity cost of capital. The relevant cash flows are incremental: the difference between cash flows with and without the investment, excluding sunk costs and including any additional working capital (Rangan et al., 2020). IRR and PI provide complementary information, but should not replace NPV, particularly when projects differ in scale or when the cash flows of an established business are incorrectly attributed to a new asset. In smaller firms, payback remains attractive because of liquidity concerns and limited financial expertise (Block & Zakay, 1997; Danielson & Scott, 2006; Graham & Harvey, 2001). More recent studies identify knowledge and complexity barriers to sophisticated appraisal (Sureka et al., 2023), while evidence from Indonesian firms supports the relevance of capital-budgeting methods to financial outcomes (Darmansyah et al., 2025; Purnamasari & Adriza, 2024).

The resource-based view (RBV) explains how resources and capabilities can support competitive advantage when they are valuable, rare, difficult to imitate and organisationally supported (Barney, 1991). Resources alone do not guarantee value; managers must structure, combine and deploy them effectively (Morrow Jr et al., 2007). In micro-enterprises, this process often depends on the owner's skills, routines and relationships (Storey, 1994). Planning capability is also associated with improved small-

firm performance, although its effects depend on context (Brinckmann et al., 2010; K. Kraus, 2006).

Capital budgeting and RBV converge in the mechanism through which capacity becomes cash flow. A larger oven increases potential output, but value is realised only when additional units are demanded, produced, sold and delivered. Incremental cash flow is determined by additional sales volume multiplied by the unit contribution margin, less additional fixed costs. Marketing capability affects demand realisation; labour, production routines and delivery arrangements affect fulfilment and cost; and regulatory compliance affects business continuity and access to sales channels. A mismatch between production capacity and these complementary capabilities can create idle capacity. Capacity-investment feasibility must therefore be judged against both a financial threshold and the firm's readiness to reach it.

Concept of the Business Feasibility Study

A feasibility study typically considers market and marketing, technical and operational, management and human resources, legal and regulatory, environmental and financial dimensions (Kasmir & Jakfar, 2023). Market assessment can be organised through segmentation, targeting and positioning and the 4P marketing mix (Kotler et al., 2016). Technical assessment covers location, input availability, technology, production layout and capacity (Aghliyah & Rohman, 2024), while management assessment considers planning, organising, directing and controlling, functions that may be concentrated in the owner of a micro-enterprise (S. Kraus et al., 2006).

The regulatory assessment distinguishes business registration, food safety and halal assurance. During the fieldwork period, the business-identification number (NIB) was governed by the risk-based licensing framework, initially under Government Regulation No. 5 of 2021 and subsequently replaced by Government Regulation No. 28 of 2025 (Republic of Indonesia, 2021, 2025). Food safety requirements are governed by Government Regulation No. 86 of 2019; the applicability of a household-industry food production certificate (SPP-IRT) depends on the product and its shelf life. The food-safety extension certificate is not a substitute for SPP-IRT. Halal certification is regulated by Law No. 33 of 2014 and Government Regulation No. 42 of 2024. For micro and small food businesses, Government Regulation No. 40 of 2026 extended the phase-in period to 17 October 2028 (Republic of Indonesia, 2014, 2024, 2026).

The environmental dimension in conventional feasibility frameworks generally concerns ecological impacts (Fei et al., 2018; Shen et al., 2010). This study instead examines the industry's competitive environment through Porter & Ten Brinke, (2008) five forces: rivalry, new entrants, substitutes, and the bargaining power of suppliers and buyers. The ecological footprint of the home-based production unit was outside the study's scope and should not be inferred from the competitive assessment.

Financial Indicators, Formulas, and Assumptions

Five indicators measure the financial aspect, calculated with the formulas below (Wyrwoll & Beusker, 2025; Zorn et al., 2018). Because Aura Bakery sells two variants at different prices, the break-even point (BEP) is reported in two forms: a single-product

BEP in units for each variant, which gives the lower and upper bounds, and a multi-product BEP in sales value based on the contribution margin ratio of the actual sales mix:

$$BEP_{units} = FC / (P - VCu); \quad BEP_{sales} = FC / (1 - VC/S) \quad (1)$$

where FC is annual cash fixed cost, P is price per unit, VCu is variable cost per unit, and VC/S is the ratio of total variable cost to sales. Annual net cash flow (NCF) is calculated as

$$NCF_t = S_t - VC_t - FC_t - Tax_t = Profit_t + Depreciation_t \quad (2)$$

Individual taxpayers whose business turnover does not exceed IDR 500 million a year pay no income tax under GR No. 55 of 2022 (Republic of Indonesia, 2022). Aura Bakery's turnover is far below this limit, so Taxt = 0 and depreciation affects reported profit but not cash flow. The investment criteria are

$$NPV = \Sigma_{t=1..n} NCF_t / (1 + r)^t - I0; \quad \Sigma_{t=1..n} NCF_t / (1 + IRR)^t - I0 = 0; \quad PI = [\Sigma_{t=1..n} NCF_t / (1 + r)^t] / I0 \quad (3)$$

where I0 is the initial outlay, r is the discount rate and n = 4 years is the assumed economic life of the equipment. Cash flows are assumed to occur at year-end. PP is calculated from cumulative cash flows, assuming even accrual within each year; discounted PP is also reported. Cash flows are expressed in nominal terms at constant 2025 prices and are discounted at a nominal rate. No salvage value or working-capital recovery is assumed at the end of year 4. The decision rules are NPV > 0, IRR > r, PI > 1 and PP shorter than the equipment's economic life.

For the investment decision, the same rule is applied to incremental cash flows. If the new equipment allows an additional ΔQ units per month to be sold at a unit contribution margin CMu = P − VCu, and requires additional cash fixed costs ΔF per year (for example, a courier), then

$$\Delta NCF = 12 \cdot \Delta Q \cdot CMu - \Delta F; \quad \Delta Q = [I_{inc} / AF(r, n) + \Delta F] / (12 \cdot CMu) \quad (4)$$

where Iinc is the incremental investment (IDR 4,430,000), AF(r,n) = Σ[t=1 to n] 1/(1+r)^t is the annuity factor (3.0373 at 12% over four years), and ΔQ is the monthly break-even incremental demand at which incremental NPV equals zero.

Conceptual Framework and Research Propositions

The qualitative case study does not test statistical hypotheses. Instead, it uses two analytical propositions and evaluates them through pattern matching between predicted relationships and observed evidence (Vargas-Bianchi, 2025). The propositions are interpretive guides, not statistically testable hypotheses.

P1: Whole-business viability is necessary but not sufficient for a capacity investment to be feasible. The investment creates value only if the incremental demand it unlocks exceeds the break-even incremental demand implied by its cost, the cost of capital, and any incremental fixed costs.

P2: Non-financial readiness conditions the realisation of incremental cash flow: marketing reach determines whether threshold demand materialises (revenue side), delivery and management arrangements determine the

threshold itself through incremental costs (cost side), and legal compliance determines the continuity and breadth of the channels available (access side).

Evidence relevant to P1 consists of the financial results at the two levels of analysis. Evidence relevant to P2 consists of coded interview, observation, and document data showing whether, and through which channel, each non-financial aspect constrains the volume that can be sold, the cost of delivering it, or the channels that can be served.

Research Methodology

This study employed a descriptive qualitative single-case study design complemented by quantitative financial analysis to provide an in-depth assessment of investment feasibility (Sugiyono, 2020; Yin, 2018). Aura Bakery, a capacity-constrained micro-bakery facing an equipment investment decision, was purposively selected as the research case. The study was conducted in Bukuan Village, Palaran District, Samarinda, from April to December 2025. Primary data were collected through structured interviews with four purposively selected informants, comprising the business owner, one production employee, and two regular customers representing different market segments (Table 1). Interviews lasted approximately 30–60 minutes and were complemented by non-participant observations of production, customer service, and distribution activities. Secondary data included financial records, raw-material receipts, sales summaries, production records, business legality documents, and official statistics. Incomplete financial records were reconstructed using itemised owner estimates and available documentation, with discrepancies cross-checked against observational and interview evidence.

Data credibility was established through source and methodological triangulation involving interviews, observations, and documentary evidence (Guba & Lincoln, 1994). Qualitative data were analysed using the interactive model of data condensation, data display, and conclusion drawing and verification (Miles et al., 2014). Deductive coding was developed from indicators covering five non-financial feasibility dimensions: market and marketing, technical and operational, management and human resources, legal and regulatory, and industry competitive environment. Inductive coding was also applied to identify emerging case-specific constraints. Findings were organised into an aspect-by-indicator matrix and classified into three feasibility categories: feasible, feasible with improvements, and conditionally feasible. The assessment criteria were developed based on Kasmir and Jakfar (2023), Kotler and Keller (2016), and Porter (2008), as presented in Table 2.

Financial feasibility was assessed through whole-business and incremental investment analyses. The whole-business assessment evaluated projected cash flows against the combined asset base of IDR 14,496,000, comprising existing capital of IDR 10,066,000 and planned equipment investment of IDR 4,430,000. Meanwhile, incremental analysis isolated the additional equipment investment to assess its contribution to business performance, using break-even demand and scenario analysis rather than standalone incremental NPV due to the absence of verified no-investment sales data. Two delivery-cost scenarios were examined: existing staff handling deliveries and the

use of a paid courier costing IDR 6,240,000 annually. A 12% discount rate was adopted as the owner's assumed required return on equity, with sensitivity tested between 6% and 24%. Further sensitivity analysis examined sales volume reductions (10%–30%), variable cost increases (10%–20%), and late-delivery order losses (10%–20%), including switching values at which NPV equals zero.

Table 1. Informant Profile

Code	Role	Characteristics	Inclusion criterion	Main topics
O1	Owner (key informant)	Founder; manages procurement, packaging, distribution, and finances since 2021	Sole investment decision-maker	Market, operations, management, legality, costs, investment plan
E1	Employee	Sole production worker since 2021	Directly involved in daily production	Production flow, capacity bottlenecks, workload
C1	Customer (adolescent)	15-year-old secondary-school student; purchases up to three times weekly	Regular customer representing adolescent segment	Purchase reasons, price, delivery experience
C2	Customer (homemaker)	42-year-old homemaker; purchases once or twice weekly	Regular customer representing homemaker segment	Purchase reasons, price, delivery experience

Source: Field data (2025).

Table 2. Rating Rubric and Indicators for the Non-Financial Aspects

Rating / Aspect	Operational Definition or Indicators
Feasible (F)	All indicators are fulfilled, with no identified gap constraining the cash flows assumed in the investment case.
Feasible with Improvements (FI)	Core indicators are fulfilled, but internal gaps remain that could reduce realised cash flows unless corrected using the owner's resources within the investment horizon.
Conditionally Feasible (CF)	External regulatory or approval requirements remain unmet, restricting legal continuity or market access; feasibility depends on fulfilment within a specified period.
Market and marketing	Defined market segments and positioning; product, price, place, and promotion alignment; evidence of repeat purchases (O1, C1, C2, order records).

Technical and operational	Adequate location and raw-material supply; documented production flow; production and delivery capacity relative to orders (O1, E1, observation).
Management and HR	Task allocation; daily and long-term planning; written procedures; dependence on the owner (O1, E1, observation).
Legal and regulatory	NIB, tax registration, food safety extension certificate, SPP-IRT or documented shelf-life exemption, and halal certification (documents, O1, regulations).
Industry competitive environment	Evidence concerning the five competitive forces: competitors, entry barriers, substitutes, supplier conditions, and buyer behaviour (O1, C1, C2, observation).

Source: Developed by the authors based on Kasmir and Jakfar (2023), Kotler and Keller (2016), and Porter (2008).

Results

Aura Bakery, established in January 2021 in Bukuan, Samarinda, is a micro-scale bakery operated by the owner and one employee, specialising in roti gembong with original and six filled variants. Its marketing strategy targets consumers aged 8–45 years, particularly adolescents and homemakers, through affordable pricing (IDR 15,000–23,000), pre-orders, and online promotion via WhatsApp and Facebook. Customer interviews confirmed positive perceptions of product quality, particularly its taste, softness, size, and affordability (C1, C2; interviews, 15 December 2025). However, promotional activities remain dependent on the owner's personal networks, limiting market expansion (O1). Operationally, the business has an established production process and regular suppliers, but its production capacity is constrained by a small oven and limited delivery arrangements. Production takes place between 06.00 and 09.00, with baking cycles of approximately 20 minutes, making equipment capacity a critical bottleneck (O1, E1; observation). Management remains informal, with no written procedures or long-term business plan, while the owner simultaneously manages procurement, packaging, and distribution. Regarding regulatory compliance, the business possesses an NIB, NPWP, and food safety extension certificate but has not obtained SPP-IRT or halal certification. Given the reported product shelf life of two weeks to one month, SPP-IRT is a current requirement, whereas halal certification must be fulfilled before the applicable mandatory certification deadline of 17 October 2028 (Republic of Indonesia, 2014, 2019, 2021, 2025, 2026). Overall, the non-financial assessment indicates that market and competitive aspects are feasible (F), technical and managerial aspects are feasible with improvements (FI), and legal compliance is conditionally feasible (CF).

The competitive assessment based on Porter's Five Forces (2008) indicates relatively low direct rivalry in the local roti gembong market, although moderate threats arise from new entrants, substitute products, and supplier bargaining power. The financial assessment distinguishes between whole-business feasibility and the incremental investment decision to avoid attributing the established business's returns entirely to the proposed capacity expansion. The planned investment of IDR 4,430,000 comprises a larger oven, mixer, and gas equipment, while existing assets and initial

working capital are treated as sunk costs in the incremental analysis. Based on a four-year investment horizon and a 12% discount rate, the whole-business projection generates an NPV of IDR 67,506,565, IRR of 186.6%, PI of 5.66, and payback period of 0.53 years (Table 5 and Table 6). The projected first-year sales of IDR 77.13 million, however, represent a demand-recovery scenario rather than the current operating baseline. Consequently, these results demonstrate the potential viability of the enlarged business but do not independently establish the profitability of the additional equipment. The incremental analysis shows that the investment requires additional sales of approximately 10.7–16.0 units per month when existing staff manage deliveries, increasing to 56.6–84.5 units when a paid courier is required. At 25 additional units per month, incremental NPV reaches IDR 2,485,133, with an IRR of 36.7% and a payback period of 1.95 years. Conversely, scenarios involving 15 additional units per month generate a negative NPV, indicating that investment viability depends substantially on additional demand and delivery arrangements (Table 7).

Sensitivity analysis further demonstrates that whole-business financial performance remains positive under all tested scenarios. Even under a combined adverse scenario involving a 30% decline in sales volume, a 20% increase in variable costs, and a 10% loss of orders due to delivery delays, NPV remains positive at IDR 10,591,425, with a PI of 1.73 and IRR of 43.8%. The investment reaches its switching value when sales volume declines by approximately 57% or variable costs increase by 65% (Table 8). The comparative assessment confirms that the existing business is financially viable and relatively resilient, supported by a 69.7% margin of safety and positive investment indicators. Nevertheless, the proposed capacity investment is only conditionally feasible because its financial returns depend on the actual recovery of demand, the ability to increase monthly sales, and the availability of cost-efficient delivery arrangements (Table 9). These findings suggest that investment decisions should prioritise validating additional market demand, expanding production capacity, strengthening promotional channels, and improving delivery arrangements before committing additional capital.

Discussion

The findings support Proposition 1: whole-business viability is necessary but insufficient to establish the value of a capacity investment. The enlarged business meets the conventional financial criteria and remains viable under the tested stress scenarios. This is consistent with feasibility assessments of bakery and food micro-enterprises (Ilham, 2023; Maksum et al., 2024), while the contrasting findings for barbershops demonstrate that feasibility is context-dependent (Takaeb & Kelen, 2021). More importantly, the whole-business IRR of 186.6% is not an investment-specific return. It reflects projected cash flows from an established business divided by a relatively small combined asset base, including assets already committed. Recent evidence likewise emphasises that capital-allocation efficiency and appraisal practices matter for firm outcomes (Ma & Zhang, 2025; Purnamasari & Adriza, 2024; Darmansyah et al., 2025).

The appropriate decision criterion is the incremental cash flow attributable to the new equipment.

Whether the threshold will be achieved remains uncertain. Monthly sales reportedly declined by about 100 units. If existing staff can absorb delivery, recovering only 11–16 units per month—roughly one-sixth of the reported decline—would cover the incremental investment. With a paid courier, the required recovery rises to 57–85 units, or most of the lost volume. The owner's forecast implies a larger recovery, but it is not supported by an observed order series. The investment is therefore more attractive when delivery can be organised on a per-order basis or absorbed within existing capacity without hidden labour costs. Translating NPV into a monthly demand threshold offers a practical monitoring measure for owners who may find discounted-cash-flow models difficult to apply. This responds to documented barriers involving financial knowledge, time and perceived complexity (Sureka et al., 2023).

Proposition 2 is also consistent with the case evidence, with important qualifications. Freshness, product variety and repeat-customer relationships create value for Aura Bakery, but these resources are relatively easy to imitate and are not supported by formal marketing systems. The owner's personal social-media accounts limit promotional reach, while delivery remains a bottleneck. The case therefore illustrates the RBV distinction between possessing resources and organising them to create value (Barney, 1995; Sirmon et al., 2007). Low direct rivalry in gembong bread does not imply a protected advantage because substitute bakery snacks and potential entrants remain present (Porter, 2008). Capacity expansion without complementary marketing and distribution capabilities may simply increase unused capacity.

Management and regulatory readiness influence the investment through cost and continuity channels. The owner's dual role in production coordination and delivery determines whether added sales require a new fixed courier cost, which changes the break-even threshold substantially. On the regulatory side, the business holds an NIB but has not completed SPP-IRT, which the study treats as required given the reported two-week-to-one-month shelf life. Halal certification remains a necessary compliance task within the applicable phase-in period, now ending on 17 October 2028 for micro and small food businesses under Government Regulation No. 40 of 2026 (Republic of Indonesia, 2026). The study did not measure the effect of certification on consumer demand or verify specific retailer channel requirements; such effects should not be assumed. Overall, the case supports a conditional-feasibility interpretation: the business configuration is viable, but the equipment investment adds value only if incremental demand exceeds the threshold, delivery costs are controlled and regulatory requirements are completed.

Analytical and Practical Implications

The study's contribution is analytical. First, it demonstrates how a micro-enterprise can use break-even incremental demand when a reliable no-investment baseline is unavailable. This translates the NPV criterion into a monthly sales target that can be monitored. Second, the case suggests that the value of production capacity may be bounded by distribution capacity when the owner also performs delivery; future multi-case research can test this proposition. Third, the analysis connects non-financial

readiness to three cash-flow pathways—demand, fulfilment cost and regulatory continuity—rather than treating feasibility dimensions as independent checklist items. These insights are bounded by the characteristics of this case: a micro-scale, pre-order bakery with local delivery and limited accounting records.

For the owner, the findings suggest five practical steps. First, record all orders, including rejected, delayed and unfulfilled orders, for four to eight weeks to verify whether at least 16 additional monthly units can be sold. Second, test per-order delivery before hiring a fixed-cost courier. Third, complete SPP-IRT and halal-certification requirements and maintain appropriate product labelling. Fourth, consider staged investment: purchasing the oven and gas equipment first (IDR 2.93 million) would reduce the break-even demand to approximately 7–11 units per month without a courier; the mixer can follow if mixing becomes a demonstrated bottleneck. Fifth, maintain basic sales, cost and cash records and use dedicated business communication channels. Local MSME agencies and vocational institutions could adapt the two-level appraisal as part of financial-management and licensing assistance.

Conclusion

The study finds that Aura Bakery's market and competitive dimensions are feasible, while its technical and management dimensions are feasible with improvements. The legal dimension is conditionally feasible because SPP-IRT and halal certification remain outstanding. At the whole-business level, the enlarged business is viable under the owner-assisted projection: NPV is IDR 67,506,565, IRR 186.6%, PI 5.66 and payback 0.53 years. These indicators describe the projected business configuration, not the standalone return on the new equipment. The capacity investment creates value only if it generates at least 10.7–16.0 additional units per month when existing staff absorb delivery, or 56.6–84.5 units when a paid courier is required. Because demand recovery has not been observed, the investment should be treated as conditionally feasible rather than unconditionally recommended.

The conclusions depend on reconstructed sales and cost data and on a forecast that assumes partial recovery of demand. A post-investment evaluation should collect monthly order volumes, unmet and late orders, delivery costs, actual unit costs and sales mix, and output per baking cycle. These data are necessary to verify whether realised incremental cash flows exceed the break-even threshold.

Research Limitations

Four limitations should be noted. First, incomplete sales and cost records required reconstruction from owner estimates and partial documents, affecting the precision of whole-business NPV, IRR and PI. Second, the absence of a verified no-investment baseline means the incremental result is a threshold, not an estimate of realised project value. Third, market evidence relies on two customer informants and owner records and is illustrative rather than representative. Fourth, the single-case, cross-sectional design cannot capture subsequent changes in competition, input prices

or regulation. Accordingly, the numerical estimates should be interpreted as decision-support estimates, not audited forecasts.

Further Research Recommendations

Future research should collect order-level data before and after equipment acquisition to estimate realised incremental cash flows and directly test Proposition 1. Comparative cases of micro-bakeries could examine whether distribution capacity systematically constrains the value of production expansion and how this relationship varies by product shelf life and order model. Consumer research could also test whether halal certification affects trust, channel access or willingness to buy. Such extensions should prioritise stronger measurement of incremental demand and costs rather than sample expansion alone.

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