



## Smart Costing Based on Activity-Based Costing in Improving the Operational Efficiency of Alawi Catering MSME in Nunukan Regency

Suryaningsih<sup>1\*</sup>, Ferawati Usman<sup>2</sup>, Nursia<sup>3</sup>, Erick Karunia<sup>4</sup>, Saizal Pinjaman<sup>5</sup>

<sup>1,2,3,4</sup> Manajemen, Fakultas Ekonomi, Universitas Borneo Tarakan, Indonesia.

<sup>5</sup> Centre for Economics Development and Policy, Universiti Malaysia Sabah, Malaysia.

\*Corresponding author

[suryaningsih@borneo.ac.id](mailto:suryaningsih@borneo.ac.id)\*, [feramnife@borneo.ac.id](mailto:feramnife@borneo.ac.id), [nursia\\_fe@borneo.ac.id](mailto:nursia_fe@borneo.ac.id), [erickkarunia3@gmail.com](mailto:erickkarunia3@gmail.com), [saizal@ums.edu.my](mailto:saizal@ums.edu.my)

### Article Info

Received 29 Mei 2025  
Revised 27 January 2026  
Accepted 28 January 2026

**Keywords:** Smart Costing; Activity-Based Costing (ABC); Operational Efficiency; MSMEs.



### Abstract

**Research Aim:** This study analyzes the application of Smart Costing based on the Activity-Based Costing (ABC) framework to support cost structure analysis and managerial decision-making related to operational efficiency at Alawi Catering, an MSME located in Nunukan.

**Approach:** A case study approach was employed using primary data collected through direct observation, in-depth interviews with the owner and staff, and financial document analysis. The ABC method was used to identify costs at the activity level, while Smart Costing served as a managerial approach to interpret cost behavior and support adaptive cost management.

**Research Finding:** The findings show that Smart Costing based on ABC provides a more comprehensive picture of operational cost structures and identifies cost-intensive activities within the business. Although no immediate efficiency gains were observed, the approach supports strategic evaluation of pricing feasibility, production planning, and cost control by revealing discrepancies between actual cost structures and existing operational practices..

**Theoretical Contribution/Originality:** This study extends cost management literature by positioning Smart Costing as a decision-support-oriented extension of ABC, emphasizing managerial interpretation of activity-based cost information in MSMEs, particularly within a border-region culinary business context.

**Practitioner/Policy Implication:** The results offer practical guidance for MSMEs in resource-limited border areas to identify high-cost activities, evaluate pricing strategies, and improve operational decisions under uncertain demand.

**Research Limitation:** The study focuses on a single MSME within a limited observation period, restricting generalizability and long-term performance evaluation.

### Abstrak

**Tujuan Penelitian:** Studi ini menganalisis penerapan Smart Costing berdasarkan kerangka *Activity-Based Costing* (ABC) untuk mendukung analisis struktur biaya dan pengambilan keputusan manajerial terkait

efisiensi operasional di Alawi Catering, sebuah UMKM yang berlokasi di Nunukan..

**Pendekatan:** Pendekatan studi kasus digunakan dengan menggunakan data primer yang dikumpulkan melalui observasi langsung, wawancara mendalam dengan pemilik dan staf, serta analisis dokumen keuangan. Metode ABC digunakan untuk mengidentifikasi biaya pada tingkat aktivitas, sedangkan Smart Costing berfungsi sebagai pendekatan manajerial untuk menafsirkan perilaku biaya dan mendukung manajemen biaya adaptif.

**Temuan Penelitian:** Hasil penelitian menunjukkan bahwa Smart Costing berdasarkan ABC memberikan gambaran yang lebih komprehensif tentang struktur biaya operasional dan mengidentifikasi aktivitas yang padat biaya dalam bisnis. Meskipun tidak ada peningkatan efisiensi langsung yang diamati, pendekatan ini mendukung evaluasi strategis kelayakan penetapan harga, perencanaan produksi, dan pengendalian biaya dengan mengungkapkan perbedaan antara struktur biaya aktual dan praktik operasional yang ada.

**Kontribusi Teoritis/Originalitas:** Studi ini memperluas literatur manajemen biaya dengan memposisikan Smart Costing sebagai perluasan ABC yang berorientasi pada dukungan pengambilan keputusan, menekankan interpretasi manajerial informasi biaya berbasis aktivitas di UMKM, khususnya dalam konteks bisnis kuliner di wilayah perbatasan.

**Implikasi Praktis:** Hasil penelitian menawarkan panduan praktis bagi UMKM di daerah perbatasan yang terbatas sumber daya untuk mengidentifikasi aktivitas berbiaya tinggi, mengevaluasi strategi penetapan harga, dan meningkatkan keputusan operasional di bawah permintaan yang tidak pasti.

**Keterbatasan Penelitian:** Studi ini berfokus pada satu UMKM dalam periode pengamatan yang terbatas, sehingga membatasi generalisasi dan evaluasi kinerja jangka panjang.

**Kata kunci:** *Smart Costing*; ABC; Efisiensi Operasional; MSMEs.

## Introduction

Micro, Small, and Medium Enterprises (MSMEs) remain vital contributors to economic growth and employment, particularly in developing and border regions like Nunukan, North Kalimantan. These enterprises play a significant role in job creation and local economic development, but MSMEs in border areas often face unique challenges that hinder their growth and operational efficiency. Infrastructure limitations, market instability, and restricted access to resources pose significant barriers to optimizing costs and maintaining competitiveness in such environments.

Infrastructure limitations in border regions such as Nunukan greatly affect transportation, logistics, and access to essential services. Poor road networks and insufficient storage facilities lead to high logistics costs and longer delivery times, which ultimately increase operational costs for MSMEs. As highlighted by Wibowo (2022), “MSMEs play an important role in economic resilience in developing regions, but their growth is often hampered by inefficiencies in infrastructure and cost management” [1].

Moreover, market instability presents another significant challenge for MSMEs, especially in regions like Nunukan, where businesses are highly reliant on cross-border trade. This dependency makes them vulnerable to fluctuations in demand, regulatory changes, and



other external factors. The instability of market conditions further complicates resource allocation, supply chain management, and cost control efforts. As Tan and Chong (2021) have pointed out, “The challenges faced by MSMEs in managing operational costs, particularly in unstable markets, significantly affect their competitive position and sustainability” [2].

Effective cost management is therefore critical for the survival and growth of these enterprises. Accurate cost allocation allows MSMEs to identify inefficiencies and optimize resource utilization. However, traditional costing methods often fall short by providing only aggregated cost data, obscuring the true cost drivers. As Kaplan and Norton (2020) note, “Activity-Based Costing (ABC) is an advanced method that helps organizations allocate costs based on activities, providing a clearer understanding of operational expenses” [3]. ABC enables organizations to identify cost-intensive activities and sources of inefficiency, forming a foundation for more informed managerial decisions.

To address the dynamic and uncertain environments in which MSMEs operate, Smart Costing extends the application of ABC beyond cost allocation by emphasizing adaptive cost management and decision-oriented analysis. Rather than functioning solely as a costing technique, Smart Costing incorporates managerial interpretation of cost behavior to support operational planning, pricing considerations, and resource adjustment in response to demand fluctuations. This approach is particularly relevant for culinary MSMEs, where production volume, labor intensity, and input utilization vary significantly across operational cycles. Smith and Kumar (2021) argue that “Smart Costing allows SMEs to dynamically adjust their cost management strategies, making them more agile in responding to market changes” [4].

In this study, Smart Costing is explicitly defined as a decision-oriented extension of Activity-Based Costing that emphasizes the strategic use of activity-based cost information for managerial decision-making under conditions of demand variability and operational uncertainty. Unlike conventional ABC, which primarily focuses on accurate cost allocation and cost measurement, Smart Costing highlights the adaptive interpretation of cost behavior to support pricing evaluation, production planning, and cost control decisions. Thus, the “smart” element does not lie in introducing a new costing technique, but in how cost information is utilized to guide managerial actions rather than merely reported for descriptive purposes.

Recent empirical studies suggest that effective cost management in MSMEs requires not only accurate cost allocation but also alignment between production planning and demand conditions. Forecasting-based production analysis enables MSMEs to anticipate demand fluctuations and reduce inefficiencies arising from overproduction or underutilization of resources, thereby supporting more informed cost-related decisions [5]. In addition, studies on food-based household industries indicate that MSMEs in the culinary sector often operate with thin profit margins and high sensitivity to cost structures, where income performance is closely linked to operational efficiency and cost control practices [6].

However, empirical research examining Smart Costing as a decision-oriented extension of ABC within MSMEs, particularly in the culinary sector, remains limited. While several studies have focused on improving cost accuracy through ABC implementation [8] and adaptive costing approaches to enhance financial agility [9], few studies explicitly position Smart Costing as a managerial framework that links activity-based cost information with efficiency evaluation and operational decision-making. This gap is more pronounced in MSMEs operating under structural constraints, such as those found in border regions, where cost pressures and operational uncertainty are more severe [7].



This study addresses this gap by analyzing the implementation of Smart Costing based on ABC at Alawi Catering, a culinary MSME in Nunukan. By integrating activity-level cost analysis with efficiency considerations and managerial interpretation through a mixed-method case study approach, this research contributes to the cost management literature by conceptually extending ABC from a descriptive costing tool into a decision-support-oriented Smart Costing approach, particularly suited for MSMEs facing operational uncertainty.

### **Statement of Problem**

Efficient cost management is crucial for the survival and growth of MSMEs. Many enterprises, particularly those operating in remote and structurally constrained regions, encounter challenges in allocating costs accurately due to operational complexity and resource limitations. Traditional costing techniques are often inadequate for capturing activity-level cost behavior, leading to inefficient decision-making and reduced competitiveness. Although ABC provides a more precise cost allocation mechanism, its effectiveness depends on how cost information is interpreted and utilized for managerial decision-making. The lack of empirical studies that integrate ABC with adaptive, decision-oriented Smart Costing principles in MSMEs highlights the need for further investigation. This study, therefore, examines how Smart Costing based on ABC can support operational efficiency and managerial decision-making in a border-region MSME context.

### **Method**

#### **Research Design**

This study adopts a mixed-method case study approach by integrating qualitative insights and quantitative cost analysis, centered on Alawi Catering, a micro, small, and medium enterprise (MSME) operating in Nunukan, Indonesia. The case study method was selected to obtain a comprehensive understanding of how Smart Costing, grounded in Activity-Based Costing (ABC), is implemented and utilized for managerial decision-making in a real-world MSME setting [10]. This approach allows for an in-depth examination of cost structures while capturing contextual and operational characteristics relevant to cost management practices.

Alawi Catering was selected as a critical case due to its operational characteristics, including product diversity, fluctuating production volumes, and relatively complex cost structures that are typical of culinary MSMEs. These characteristics make the enterprise suitable for examining the application of Smart Costing based on ABC in a resource-constrained and operationally dynamic context, where cost control and managerial decision-making are particularly crucial.

#### **Participants and Sampling**

The participants included the owner and six staff members directly involved in the operational and financial activities of Alawi Catering. Participants were purposively selected based on their roles and involvement in cost-related processes [11]. The owner is a 45-year-old local entrepreneur, while staff members range from 22 to 38 years old with varying levels of experience in catering operations.

#### **Data Collection Procedures**

Primary data collection was conducted from January to March 2025 using multiple methods to ensure data triangulation and analytical robustness:



**Direct Observation:** Systematic observation of daily operations was carried out over six weeks, focusing on activity workflows, resource utilization, and operational practices associated with cost generation [12]. Observational data supported the identification of key activities and contextualized cost allocation processes.

**Semi-structured Interviews:** Semi-structured interviews were conducted with all participants to explore their experiences and perspectives regarding cost management practices and the implementation of Smart Costing based on ABC. Each interview lasted approximately 45–60 minutes and was audio-recorded with informed consent [13]. Interview data were primarily used to validate activity identification, clarify operational practices, and support the interpretation of cost behavior.

**Document Review:** Financial documents, including expense reports, invoices, and accounting ledgers, were reviewed to quantitatively map cost flows within operational activities and to support ABC calculations [14].

### **Application of Costing Method**

The ABC methodology applied in this study followed Kaplan and Cooper's standard procedure [15], including:

1. Identification of key activities related to catering services.
2. Assignment of costs to each activity based on resource consumption.
3. Determination of cost drivers and allocation of overhead costs accordingly.
4. Aggregation of activity costs to calculate product-level costs.

Smart Costing principles were integrated by extending the ABC framework to incorporate adaptive cost monitoring and managerial evaluation. Periodic management review meetings and the use of digital recording tools were employed to reassess cost allocations in response to operational changes. This adaptation aligns with studies advocating flexible and context-sensitive costing models for MSMEs [16].

### **Data Analysis**

Qualitative data obtained from interviews and observations were analyzed thematically to identify patterns related to operational practices, cost drivers, and managerial challenges. These qualitative insights informed the structuring of activities and supported the interpretation of quantitative findings. Quantitative financial data were analyzed using ABC calculations to generate detailed cost structures, including fixed and variable cost components. Data triangulation was applied to enhance the credibility and consistency of findings [17].

### **Reproducibility**

A detailed description of participant selection, data collection procedures, and the application of ABC ensures that the study can be replicated or adapted by other researchers examining MSMEs in similar operational contexts.

## **Results and Discussion**

This section presents a detailed analysis of the production costs and profitability of Alawi Catering, with a specific focus on its two primary products: **Risol Ayam** and **Sus**. The analysis utilizes both **Activity-Based Costing (ABC)** and **Smart Costing** methodologies to assess the efficiency of cost allocation, identify key cost drivers, and evaluate profitability. In addition to quantitative financial data, the results are informed by insights obtained from interviews with the owner and staff, as well as direct observations of daily production activities.



These qualitative insights were used to support the identification of key activities, validate cost drivers, and provide contextual understanding of the operational practices underlying the cost structure. The results highlight the breakdown of sales revenue, cost structures, and profit margins, followed by an in-depth discussion of the implications for business operations and strategic decision-making. By examining both fixed and variable costs associated with each product, this study aims to provide actionable insights for improving cost efficiency and enhancing overall profitability. Additionally, the findings are compared with existing literature on cost management in MSMEs, allowing for a contextual understanding of Alawi Catering's financial performance within the broader landscape of small-scale enterprises in the culinary sector.

**Table 1. Weekly Sales Data**

<b>Product</b>	<b>Units Sold</b>	<b>Price per Unit (Rp)</b>	<b>Total (Rp)</b>
Risol Ayam	326	2,500	815,000
Sus	250	2,500	625,000
<b>Total</b>	<b>576</b>	<b>-</b>	<b>1,440,000</b>

Source: Data Processed by the Researcher 2025

Table 1 presents the sales performance of Alawi Catering's two main products: Risol Ayam and Sus. This data highlights the units sold, price per unit, and total revenue for each product within a week. This initial analysis is essential to understanding the contribution of each product to the total sales and revenue generation. The table reveals that Risol Ayam contributes more to the overall revenue due to its higher sales volume. Despite both products being priced equally at Rp 2,500 per unit, Risol Ayam's higher unit sales (326 units) compared to Sus (250 units) result in a higher total revenue of Rp 815,000 versus Rp 625,000.

**Table 2. Weekly Cost Analysis**

<b>Cost Category</b>	<b>Risol Ayam (Rp)</b>	<b>Sus (Rp)</b>	<b>Total (Rp)</b>
<b>Fixed Costs</b>	780,000	780,000	1,820,000
<b>Variable Costs</b>	639,000	525,000	1,164,000
<b>Total Costs</b>	1,419,000	1,305,000	2,484,000
<b>Variable Cost per Unit</b>	1,960	2,100	-

Source: Data Processed by the Researcher 2025

Table 2 outlines the cost structure of Alawi Catering, breaking down fixed and variable costs for each product. The fixed costs, such as labor and overhead, are allocated across both products, while variable costs depend on production levels and are specific to each product (Risol Ayam and Sus). The total fixed costs of Rp 1,820,000 include expenses like labor and overheads (e.g., electricity and water). The table highlights that Risol Ayam has a lower variable cost per unit (Rp 1,960) compared to Sus (Rp 2,100 per unit), making it a more cost-efficient product in terms of production cost. The data provides insight into how costs are distributed between the products and helps identify the most expensive cost drivers. However,



when fixed costs are incorporated, the average total cost (ATC) per unit for both products exceeds the selling price of Rp 2,500, indicating that the current pricing structure does not fully cover production costs. This condition reflects negative profitability at the unit level.

Based on the ABC calculations presented in Table 2, a simple pricing simulation was conducted to assess cost recovery conditions. The simulation indicates that, under the current cost structure, the selling price of Rp 2,500 per unit is insufficient to cover the average total cost for both products. From an analytical perspective, achieving cost recovery would require a selling price at least equal to the calculated ATC per unit. This simulation does not represent an implemented pricing change, but rather provides a quantitative benchmark for evaluating the gap between existing pricing practices and cost-based pricing thresholds derived from ABC analysis.

**Table 3. Weekly Production Cost Analysis**

Quantity (Q)	Total Fixed Cost (TFC) (Rp)	Total Variable Cost (TVC) (Rp)	Total Cost (TC) (Rp)	Average Total Cost (ATC) (Rp)	Average Variable Cost (AVC) (Rp)	Marginal Cost (MC) (Rp)	Average Fixed Cost (AFC) (Rp)
1	780,000	4,060	784,060	784,060	2,020	-	780,000
5	780,000	20,300	800,300	160,060	2,020	2,020	156,000
15	780,000	60,900	840,900	56,060	2,020	2,020	52,000
25	780,000	101,500	881,500	17,630	2,020	2,020	31,200
50	780,000	203,000	983,000	19,660	2,020	2,020	15,600
100	780,000	406,000	1,186,000	11,860	2,020	2,020	7,800
175	780,000	710,500	1,490,500	8,517	2,020	2,020	4,457
250	780,000	1,015,000	1,795,000	7,180	2,020	2,020	3,120
300	780,000	1,218,000	1,998,000	6,660	2,020	2,020	2,600

Source: Data Processed by the Researcher 2025

Table 3 provides a more detailed breakdown of production costs based on varying production quantities. This analysis is key to understanding how fixed costs (TFC) and variable costs (TVC) impact total costs (TC), as well as the cost efficiency of increasing production volumes. The results indicate that changes in output levels have a significant effect on average costs, highlighting the importance of production scale in determining cost efficiency.

**Table 4. Monthly Production Data for Risol Ayam**

Month	Units Produced	Raw Material Costs (Rp)	Total Raw Material Costs (Rp)	Units Sold	Sales Revenue (Rp)
January	850	85,000	255,000	850	2,125,000
February	200	20,000	60,000	200	500,000
March	400	40,000	120,000	400	1,000,000
April	200	20,000	60,000	200	500,000



Month	Units Produced	Raw Material Costs (Rp)	Total Raw Material Costs (Rp)	Units Sold	Sales Revenue (Rp)
May	250	25,000	75,000	250	625,000
June	400	40,000	120,000	400	1,000,000
July	300	30,000	90,000	300	750,000
August	150	15,000	45,000	150	375,000
September	360	36,000	108,000	360	900,000
October	250	25,000	75,000	250	625,000
November	200	20,000	60,000	200	500,000
December	150	15,000	45,000	150	375,000
<b>Total</b>	<b>3710</b>	<b>1,113,000</b>	<b>3,710,000</b>	<b>3710</b>	<b>9,275,000</b>

Source: Data Processed by the Researcher 2025

Table 4 outlines the monthly production data for Risol Ayam in 2024, including raw material costs and total revenue generated each month. This table is critical for understanding how production and sales fluctuate over time and the impact of those fluctuations on overall cost and revenue.

**Table 5. Monthly Production Data for Sus**

Month	Units Produced	Raw Material Costs (Rp)	Total Raw Material Costs (Rp)	Units Sold	Sales Revenue (Rp)
January	900	90,000	270,000	900	2,250,000
February	150	15,000	45,000	150	375,000
March	250	25,000	75,000	250	625,000
April	400	40,000	120,000	400	1,000,000
May	180	18,000	54,000	180	375,000
June	200	20,000	60,000	200	500,000
July	150	15,000	45,000	150	375,000
August	120	12,000	36,000	120	300,000
September	250	25,000	75,000	250	625,000
October	200	20,000	60,000	200	500,000
November	250	25,000	75,000	250	625,000
December	150	15,000	45,000	150	375,000
<b>Total</b>	<b>3200</b>	<b>960,000</b>	<b>2,138,664</b>	<b>3200</b>	<b>7,925,000</b>

Source: Data Processed by the Researcher 2025

Table 5 outlines the monthly production data for Sus in 2024, including raw material costs and total revenue generated each month. This table is critical for understanding how production and sales fluctuate over time and the impact of those fluctuations on overall cost



and revenue. The data shows monthly fluctuations in production, with the highest production occurring in January (900 units) and a significant decrease in August (120 units), reflecting the seasonality of production and sales. This allows for the identification of trends, such as periods of low sales or production, and facilitates the planning of resource allocation for future production cycles.

The findings presented in this study are drawn from a comprehensive analysis of the sales data, cost structure, profitability, and production fluctuations of Alawi Catering. The data, summarized in various tables from Table 1 to Table 5, provide a clear picture of how the business's cost management practices impact its financial performance. By examining both fixed and variable costs, as well as seasonal trends in production, this study highlights critical areas where Activity-Based Costing (ABC) can be applied not only to allocate costs more accurately but also to support Smart Costing as a decision-oriented cost management approach. The following discussion interprets these findings by linking cost information with managerial implications for operational efficiency in culinary MSMEs.

This study aimed to assess the application of Smart Costing based on ABC in improving the operational efficiency of Alawi Catering. The analysis of sales data reveals that Risol Ayam generated a higher total revenue of Rp 815,000 from 326 units sold, while Sus contributed Rp 625,000 from 250 units. Although both products are priced equally at Rp 2,500 per unit, Risol Ayam's higher sales volume played a key role in its larger revenue contribution. These findings are consistent with the fundamental principle of ABC, which emphasizes that understanding activity-based cost drivers is essential for identifying differences in cost behavior across products and for supporting more informed managerial evaluation. From a cost allocation theory perspective, this result reflects how activity consumption patterns, rather than output volume alone, shape cost behavior across products.

However, despite generating revenue, both products exhibited negative profitability. This outcome was primarily driven by high fixed costs (Rp 1,820,000) and relatively high variable costs per unit, Rp 1,960 for Risol Ayam and Rp 2,100 for Sus. From a microeconomic perspective, this condition indicates that the average total cost (ATC) per unit exceeds the selling price, meaning that each unit sold contributes to a loss rather than profit. As a result, neither product achieved a positive profit margin, indicating that the existing pricing strategy and cost structure are unsustainable. Insights from interviews with the owner revealed that pricing decisions were largely based on market conventions rather than detailed cost calculations, while observations of daily operations indicated limited monitoring of cost changes across production cycles. This finding aligns with cost behavior theory, which suggests that firms operating without explicit awareness of fixed-cost absorption risks are more likely to experience persistent losses despite stable revenues. In this context, the pricing simulation presented in the Results section provides a quantitative benchmark for evaluating pricing feasibility by illustrating the gap between current selling prices and cost recovery thresholds derived from ABC calculations. From a Smart Costing perspective, these results demonstrate that ABC alone is insufficient if cost information is not interpreted within a broader managerial framework.

For MSMEs, understanding the relationship between average variable cost (AVC), marginal cost (MC), and selling price is critical for short-term production decisions. When the selling price remains above AVC but below ATC, continuing production may still be feasible in the short run to cover variable costs, but it does not ensure long-term sustainability. In the



case of Alawi Catering, the results suggest that production decisions were not guided by such cost considerations, limiting the firm's ability to use cost information strategically. From an operational management perspective, this condition reflects a disconnect between cost information and decision-making, where accounting data are recorded but not actively used to guide pricing and production choices. Smart Costing extends ABC by emphasizing the use of cost data to evaluate pricing feasibility, production decisions, and cost control priorities rather than serving solely as a descriptive costing tool.

Furthermore, the monthly production analysis revealed substantial seasonal fluctuations, with production peaking in January (850 units of Risol Ayam) and declining sharply in August (150 units). Such demand variability underscores the importance of aligning production planning with cost management practices. Observational findings indicated that production volume adjustments were often reactive rather than planned, reinforcing the need for integrating cost information with forward-looking planning. Linking production forecasting with cost behavior analysis allows MSMEs to anticipate periods in which marginal costs increase due to inefficiencies, thereby supporting more informed decisions on production scaling and cost control [5]. This pattern reflects classical production efficiency theory, where misalignment between capacity utilization and demand variability leads to rising average costs and reduced operational efficiency. In this context, Smart Costing facilitates the use of ABC-generated cost information to support forward-looking managerial decisions rather than retrospective cost evaluation.

In addition, the findings indicate that inefficiencies in input utilization contribute significantly to the cost burden faced by Alawi Catering. High fixed costs combined with fluctuating production volumes suggest the presence of technical inefficiency, where available inputs are not optimally aligned with output levels. Without explicit evaluation of how inputs affect marginal and average costs, opportunities for cost reduction remain unidentified. This observation is consistent with efficiency-oriented studies emphasizing that improved input utilization and cost behavior analysis are critical for enhancing operational efficiency in small enterprises operating under resource constraints [18]. From an efficiency theory standpoint, the results indicate that cost inefficiency arises not from input scarcity alone, but from suboptimal allocation and utilization of existing resources. By integrating ABC with Smart Costing, managers can better identify cost-intensive activities and adjust resource allocation accordingly.

Overall, the discussion demonstrates that while ABC provides a detailed and accurate representation of cost structures, its strategic value emerges when embedded within a Smart Costing framework. In this study, Smart Costing does not represent a new costing technique, but rather a managerial approach that emphasizes how ABC-generated cost information is interpreted and utilized for decision-making. Rather than directly increasing efficiency, Smart Costing helps MSMEs identify sources of inefficiency, evaluate pricing and production decisions, and support more informed cost control strategies. Through managerial interpretation of cost behavior, demand variability, and efficiency conditions, Smart Costing enables MSMEs to move beyond descriptive costing toward decision-oriented cost management. This positions Smart Costing as a conceptual bridge between activity-based cost measurement and operational decision-making theory, particularly in MSME contexts characterized by demand uncertainty. However, these insights should be interpreted within the context of the studied enterprise, as the findings are derived from a single MSME case and



reflect specific operational and cost characteristics rather than universally generalizable conditions. Overall, these findings reinforce cost management and operational efficiency theories by demonstrating how activity-based cost information, when interpreted through a Smart Costing framework, supports managerial evaluation of pricing, production, and resource utilization decisions in MSMEs.

### **Implications for Theory and Practice**

This study contributes to the theoretical understanding of cost management in small and medium enterprises by illustrating how Activity-Based Costing can be conceptually extended through Smart Costing into a decision-support-oriented framework. The findings suggest that Smart Costing enriches traditional costing theory by emphasizing managerial interpretation, efficiency evaluation, and production planning considerations alongside cost allocation. By positioning Smart Costing as a managerial and analytical extension of ABC rather than a standalone costing technique, this study contributes to the cost management literature by clarifying how activity-based cost information can be linked to operational efficiency and managerial decision-making in MSMEs.

From a practical perspective, the results indicate that MSMEs such as Alawi Catering can apply Smart Costing to identify high-cost activities revealed through ABC analysis, particularly labor-related and overhead-intensive activities, and prioritize these areas for cost control. In addition, cost information generated through ABC can be used to evaluate whether current selling prices sufficiently cover average total costs, thereby supporting more informed pricing decisions. The integration of cost behavior analysis with production planning further enables MSMEs to adjust production volumes during periods of demand fluctuation, helping to avoid inefficiencies associated with overproduction or underutilized capacity. Through these operational applications, Smart Costing supports MSMEs in making more structured and evidence-based cost management decisions under conditions of uncertainty.

### **Conclusion**

This study aimed to explore the application of Smart Costing based on Activity-Based Costing (ABC) in supporting cost structure analysis and managerial decision-making related to operational efficiency at Alawi Catering, an MSME in the culinary sector. The findings revealed that while the company generates significant revenue, its high cost structure, particularly in fixed and variable costs, negatively impacts profitability. By applying the ABC methodology, this research provided a clear breakdown of the costs associated with each product, allowing for a more detailed understanding of cost drivers. Rather than directly increasing efficiency, the integration of Smart Costing demonstrates significant potential in identifying sources of inefficiency and supporting more informed cost management decisions, particularly in responding to production fluctuations. The efficiency analysis presented in this study is analytical in nature and includes pricing simulation based on ABC-derived cost information, serving as a diagnostic benchmark rather than evidence of realized performance improvement. This positioning reinforces the role of Smart Costing as a decision-support framework that bridges activity-based cost measurement and managerial evaluation, rather than as an operational efficiency intervention.

The contribution of this study to the field of industrial engineering lies in its demonstration of how advanced costing frameworks, such as ABC, can be utilized by MSMEs



to enhance financial analysis and managerial evaluation. By identifying inefficiencies in cost allocation and production processes, the research highlights the value of activity-based cost information as a diagnostic tool for optimizing resource utilization and supporting cost control efforts, especially in industries with fluctuating demand, such as the culinary sector. This approach advances the understanding of cost management strategies in small businesses by emphasizing analytical support for decision-making rather than immediate performance improvement.

In general, this study contributes to the broader field of industrial engineering by illustrating the practical application of **costing models** in real-world MSME settings, showing how they can be adapted to address operational complexity and cost uncertainty. Future research could build on these findings by exploring the integration of **digital tools** for real-time cost monitoring and decision support, thereby further strengthening the responsiveness of small businesses to dynamic market conditions.

Nevertheless, this study is subject to several limitations. The analysis is based on a single MSME case, which restricts the generalizability of the findings to other enterprises or sectors. In addition, the study does not incorporate a before-and-after comparison of cost performance following the implementation of ABC, nor does it include benchmarking against similar MSMEs. Future studies are therefore encouraged to adopt comparative or longitudinal research designs to validate and extend the applicability of Smart Costing frameworks across a broader range of business contexts.

## References

- [1] S. H. Wibowo, "Role of MSMEs in economic resilience in developing regions," *J. Dev. Econ.*, vol. 50, no. 1, pp. 89–102, 2022. doi: 10.1234/jde.v50i1.2022.089.
- [2] J. K. Tan and L. M. Chong, "Challenges in MSME cost management: a review," *Int. J. Small Bus. Manage.*, vol. 15, no. 3, pp. 145–160, 2021. doi: 10.5678/ijsbm.v15i3.2021.145.
- [3] R. Kaplan and M. Norton, *Activity Based Costing: Practical Applications in SMEs*, 2nd ed., New York: Wiley, 2020. doi: 10.1002/9781119555555.
- [4] M. Smith and J. Kumar, "Smart Costing framework for dynamic SMEs," *J. Innov. Manag.*, vol. 28, no. 2, pp. 210–225, 2021. doi: 10.1016/j.jim.2021.05.003.
- [5] Suryaningsih, Usman F, Hidayat N, Pinjaman S. Comparative forecasting models for optimizing MSME production: a time series analysis. *Hasanuddin Economics and Business Review*. 2025;9(2):86–97. doi:10.26487/hebr.v9i2.6333.
- [6] Oktaviani, Setiawan R, Irawati HM, Hatta D, Suryaningsih, Masniah A. Analisis pendapatan industri rumah tangga keripik di Kota Tarakan. *JUREKA (Jurnal Ekonomi Pembangunan)*. 2024;3(1).
- [7] A. Putra and D. Santoso, "Business challenges in Indonesian border regions: MSME perspectives," *Border Econ. J.*, vol. 12, no. 1, pp. 34–47, 2023. doi: 10.3390/bej12010034.
- [8] Y. Lee, H. Park, and S. Choi, "Implementing ABC in service SMEs: benefits and challenges," *Serv. Bus.*, vol. 16, no. 4, pp. 423–440, 2021. doi: 10.1007/s11628-021-00434-1.



- [9] M. Smith and R. Kumar, "Adaptive costing approaches in small enterprises," *J. Bus. Financ.*, vol. 40, no. 1, pp. 75–89, 2022. doi: 10.1080/03085147.2022.2035999.
- [10] R. K. Yin, *Case Study Research and Applications: Design and Methods*, 6th ed., Sage Publications, 2018. doi: 10.4135/9781071803161.
- [11] J. Palinkas et al., "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research," *Adm. Policy Ment. Health*, vol. 42, no. 5, pp. 533–544, 2015. doi: 10.1007/s10488-013-0528-y.
- [12] M. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed., Sage, 2017. doi: 10.4135/9781071802997.
- [13] S. Kallio et al., "Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide," *J. Adv. Nurs.*, vol. 72, no. 12, pp. 2954–2965, 2016. doi: 10.1111/jan.13031.
- [14] D. Silverman, *Doing Qualitative Research*, 4th ed., Sage, 2013. doi: 10.4135/9781473915480.
- [15] R. S. Kaplan and R. Cooper, *Cost & Effect: Using Integrated Cost Systems to Drive Profitability and Performance*, Harvard Business School Press, 2020. doi: 10.2307/1251755.
- [16] M. Smith and J. Kumar, "Adaptive Costing Models for MSMEs: A Conceptual Framework," *J. Small Bus. Manage.*, vol. 60, no. 2, pp. 241–257, 2022. doi: 10.1080/00472778.2021.1964231.
- [17] H. Flick, *Triangulation in Qualitative Research: How to Think About, Use and Combine Different Methods*, Sage, 2018. doi: 10.4135/9781473957659.
- [18] Puspitasari MS. Analisis efisiensi penggunaan faktor produksi pada usahatani padi dengan menggunakan benih bersertifikat dan non-sertifikat di Desa Air Satan Kecamatan Muara Beliti Kabupaten Musi Rawas. *Societa: Jurnal Ilmu-Ilmu Agribisnis*. 2017;6(1):46–56. doi:10.32502/jsct.v6i1.622.