

IMPROVING COST OF PRODUCTION CALCULATION AND SIMPLE CASH FLOW REPORTING, TEHNOLOGICAL AND MARKETING STRATEGY: A COMMUNITY SERVICE PROGRAM AT NUTSAFIR COOKIES, MATARAM, LOMBOK

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) in the food-processing sector play a vital role in the Indonesian economy, yet frequently face managerial constraints in production costing and cash flow management. Nutsafir Cookies, a premium healthy-cookie producer based in Mataram, West Nusa Tenggara, faces these constraints despite having received national awards and reached export markets. The enterprise had not implemented a systematic Cost of Production (COP) calculation and lacked a structured cash flow report, creating risks of inaccurate pricing and weak liquidity planning. This community service program aimed to strengthen Nutsafir Cookies' financial management capacity through training and mentoring on COP calculation and simple cash flow reporting. The implementation method comprised needs assessment, training, simulation, mentoring during implementation, and evaluation using pre- and post-activity assessment. Results showed improved partner understanding in classifying production costs, calculating COP per unit, and preparing monthly cash flow statements, which contributed to better pricing decisions and liquidity monitoring. Beyond the managerial accounting intervention, the program also outlined a technology roadmap grounded in Industry 5.0 principles—covering smart sourcing, intelligent production, AI-based quality control, smart packaging, and digital distribution—along with a marketing strategy plan integrating positioning, the marketing mix, and digital marketing technologies. The program affirms that strengthening financial literacy and basic managerial accounting practices is an effective strategy for supporting the competitiveness and sustainability of food-processing MSMEs. Continued mentoring and adoption of digital bookkeeping are recommended to ensure consistent application of the training outcomes in Nutsafir Cookies' future business operations.

Keywords: SMEs; Cost of Production; Cash Flow; Community Service; Financial Literacy

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) constitute the backbone of Indonesia's economy by contributing significantly to employment generation, regional income, and inclusive economic development. In the food processing sector, MSMEs also play an essential role in creating value-added products from local agricultural resources while preserving regional culinary identity. Nevertheless, many MSMEs continue to encounter managerial challenges, particularly in financial management, production costing, and cash flow planning, which limit their business competitiveness and long-term sustainability.

Nutsafir Cookies is a leading food-processing MSME located in Mataram, West Nusa Tenggara (NTB), Indonesia, operating under CV Safir Indo Raya. Established in 2012, the company produces healthy premium cookies made from locally sourced grains and agricultural commodities such as mung beans, kidney beans, cashew nuts, coconut, coffee, corn, peanuts, almonds, and the

indigenous lebu bean. The company differentiates itself by producing preservative-free, halal-certified products that comply with Indonesian food safety standards (BPOM) while promoting local agricultural resources. Over the years, Nutsafir Cookies has received several prestigious national awards, including the Best Indonesian Halal SME Award, and has successfully expanded its market through modern retail channels, e-commerce platforms, and export activities to several countries in Southeast Asia, East Asia, and Latin America. Furthermore, the enterprise employs predominantly local women, thereby contributing to household income and community economic empowerment. (Nusa Fir Lombok)

Despite its remarkable business growth and market expansion, Nutsafir Cookies continues to experience several managerial challenges commonly faced by growing MSMEs. One of the primary issues is the limited implementation of systematic cost accounting practices. Production costs are still largely estimated using conventional approaches without fully allocating direct materials, direct labor, and manufacturing overhead into an accurate Cost of Production (COP). Consequently, selling prices may not accurately reflect the actual production costs, potentially reducing profitability, especially during periods of fluctuating raw material prices and increasing operational expenses. In addition, although financial transactions are routinely conducted, cash inflows and outflows are not consistently organized into a structured cash flow statement that can support short-term liquidity planning and strategic financial decision-making.

The absence of reliable production costing and simple cash flow reporting creates several managerial risks for the enterprise. These include difficulties in determining competitive yet profitable selling prices, evaluating product profitability, planning production capacity, managing working capital, forecasting future cash requirements, and assessing business performance objectively. Such limitations become increasingly critical as Nutsafir Cookies expands its distribution network into national and international markets, where stronger financial accountability and managerial decision support are essential.

Community service activities focusing on production costing and simple cash flow reporting are therefore highly relevant and strategically important for Nutsafir Cookies. Accurate calculation of the Cost of Production enables business owners to identify the true cost of each product, establish rational pricing strategies, improve cost efficiency, and strengthen overall financial performance. Meanwhile, a simple cash flow reporting system provides timely information regarding operating cash movements, allowing management to anticipate liquidity shortages, optimize cash utilization, and support sustainable business growth. Previous studies have consistently demonstrated that financial literacy, managerial accounting practices, and simple bookkeeping significantly improve MSME productivity, financial resilience, and long-term competitiveness.

Moreover, this community engagement program aligns with Indonesia's national agenda to strengthen MSME competitiveness through improved financial capability and digital transformation. As Nutsafir Cookies continues to penetrate wider domestic and international markets, strengthening its managerial accounting capacity becomes increasingly important to support transparent financial reporting, better business planning, investment readiness, and sustainable enterprise development. Therefore, this community service program was designed to enhance the financial management capability of Nutsafir Cookies through practical training and mentoring on Cost of Production calculation and the preparation of a simple cash flow statement. It is expected that these interventions will improve managerial decision-making, increase financial efficiency, and contribute to the long-term sustainability and competitiveness of the enterprise.

This community service paper presents a training and mentoring program for Nutsafir Cookies, an SME producing cookies in Mataram, Lombok. The program focused on calculating cost of production and preparing simple cash flow reports to improve managerial decision making and financial sustainability. The activities included training, hands-on practice, mentoring, and

evaluation. Results indicated improved understanding of production costing, pricing, and cash management.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Cost of Production in Manufacturing SMEs

Cost of Production (COP), also referred to as the Cost of Goods Manufactured (COGM), represents the total manufacturing expenditure incurred during the production process. It consists of three principal components: direct materials, direct labor, and manufacturing overhead. Accurate production costing provides a reliable basis for determining selling prices, evaluating profitability, controlling production efficiency, and supporting managerial decision-making. In manufacturing SMEs, particularly food-processing enterprises, an accurate understanding of production costs is essential because fluctuations in raw material prices and labor expenses directly affect product profitability.

Many small businesses continue to estimate production costs using simplified approaches that omit indirect production expenses such as equipment depreciation, packaging materials, utilities, and factory overhead. Consequently, selling prices are often determined based on competitors' prices or managerial intuition rather than objective cost calculations. This practice increases the risk of underpricing products, reducing profit margins, and weakening business competitiveness. Therefore, implementing systematic production costing is considered one of the fundamental managerial accounting practices that strengthens operational efficiency and long-term business sustainability.

From the perspective of management accounting, production costing also functions as an internal control mechanism. By identifying cost drivers and allocating costs appropriately, business owners are able to monitor production efficiency, evaluate resource utilization, and identify opportunities for cost reduction without sacrificing product quality. For SMEs that are expanding into broader domestic and international markets, accurate costing becomes increasingly important because pricing decisions directly influence market competitiveness, customer value perception, and financial performance.

Cash Flow Management for MSMEs

Cash flow management refers to the process of recording, monitoring, and controlling cash inflows and cash outflows to ensure sufficient liquidity for daily business operations. Unlike profit measurement, which is based on accounting principles, cash flow focuses on the actual movement of cash and therefore provides more practical information regarding an enterprise's financial health. Effective cash flow management enables business owners to anticipate liquidity shortages, schedule payments to suppliers, manage receivables, and allocate financial resources efficiently.

Previous studies consistently identify poor cash flow management as one of the leading causes of business failure among SMEs. Many enterprises experience profitable sales but simultaneously face liquidity constraints because cash receipts and cash expenditures are poorly planned. Recent evidence indicates that structured cash flow recording, monthly budgeting, and systematic monitoring of operating cash significantly improve financial control, business resilience, and managerial decision-making.

For community-based SMEs, a simple cash flow statement represents a practical financial management tool because it does not require sophisticated accounting knowledge. Recording daily cash receipts and expenditures enables entrepreneurs to evaluate operational performance, identify unnecessary expenses, forecast future cash requirements, and improve financial discipline. Furthermore, reliable cash flow information enhances business transparency, facilitates access to external financing, and supports investment planning, all of which contribute to sustainable business development.

Financial Literacy and Managerial Capability

Financial literacy refers to the knowledge, skills, and confidence required to understand financial information and apply sound financial decisions in business activities. Within the context of MSMEs, financial literacy encompasses budgeting, bookkeeping, production costing, working capital management, financial reporting, pricing decisions, and investment evaluation. Business owners possessing adequate financial literacy are generally better equipped to allocate resources efficiently, control operational risks, and respond to changing market conditions.

Recent empirical studies demonstrate that financial literacy significantly enhances business performance by improving financial management practices, strengthening access to financing, encouraging fintech adoption, and supporting strategic decision-making. Financial literacy also contributes indirectly to business sustainability through better financial planning and improved managerial capability.

The importance of financial literacy has become increasingly prominent as SMEs undergo digital transformation. Digital bookkeeping applications, electronic payment systems, and financial management software require entrepreneurs to possess both accounting knowledge and digital competencies. Consequently, community service programs focusing on practical financial education have become an effective intervention strategy for improving managerial capacity among SMEs. Systematic literature reviews further conclude that financial literacy serves as a fundamental capability that strengthens financial resilience, promotes business continuity, and increases the ability of SMEs to adapt to uncertain economic conditions.

MSME Sustainability

MSME sustainability refers to the capability of an enterprise to maintain its economic viability, operational continuity, competitiveness, and social contribution over the long term. Sustainable SMEs continuously generate profits while adapting to market dynamics, technological changes, resource constraints, and environmental uncertainty. Financial capability has consistently been identified as one of the most important determinants of sustainable enterprise development.

Recent studies indicate that sustainable MSMEs are characterized by effective financial management, efficient operational processes, innovation capability, digital adoption, and continuous learning. Financial sustainability is strengthened through accurate financial reporting, sound cash flow management, appropriate production costing, and improved financial literacy, all of which enhance managerial decision-making and organizational resilience.

Within manufacturing SMEs, production costing and cash flow management represent complementary managerial practices. Production costing provides information regarding operational efficiency and product profitability, whereas cash flow reporting ensures that sufficient liquidity is available to sustain business operations. The integration of these two accounting tools enables business owners to establish competitive selling prices, manage working capital effectively, evaluate business performance objectively, and prepare for future business expansion.

Conceptual Framework of the Community Service Program

Based on the preceding literature, this community service program adopts the premise that strengthening managerial accounting capability constitutes an effective strategy for enhancing MSME competitiveness. The intervention focuses on two practical components that are highly relevant for Nutsafir Cookies: (1) accurate Cost of Production calculation and (2) preparation of a simple operating cash flow statement. These complementary financial management practices are expected to improve pricing accuracy, operational efficiency, financial transparency, liquidity management, and evidence-based managerial decision-making.

Accordingly, the program assumes that improving financial literacy through practical training and mentoring will increase the owner's ability to apply basic managerial accounting concepts in daily operations. Enhanced production costing and systematic cash flow reporting are therefore expected to contribute to stronger financial performance, greater business resilience, and the long-term sustainability of Nutsafir Cookies as a competitive food-processing MSME.

Situation Analysis

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Proposed Solution

Based on the preceding literature, this community service program adopts the premise that strengthening managerial accounting capability constitutes an effective strategy for enhancing MSME competitiveness. The intervention focuses on two practical components that are highly relevant for Nutsafir Cookies: (1) accurate Cost of Production calculation and (2) preparation of a simple operating

METHODS

Methods consisted of needs assessment, training, mentoring, simulation, implementation, and evaluation using pre-post assessment.

RESULTS AND DISCUSSION

Participants successfully calculated production costs. Example: Direct materials IDR 3,500,000; direct labor IDR 1,500,000; overhead IDR 1,000,000; total manufacturing cost IDR 6,000,000. If 1,000 packs are produced, HPP equals IDR 6,000 per pack. Example monthly cash flow: Opening 5,000,000; inflow 18,000,000; outflow 15,500,000; ending balance 7,500,000. The SME reported better pricing decisions and improved cash monitoring.

Tabel 1 Financial Plan: Based on a conservative scenario

Year	Units	Revenue (IDR)	Cost	Profit
2027	18000	270,000,000	180,000,000	90,000,000
2028	21600	324,000,000	216,000,000	108,000,000
2029	25920	388,800,000	259,200,000	129,600,000

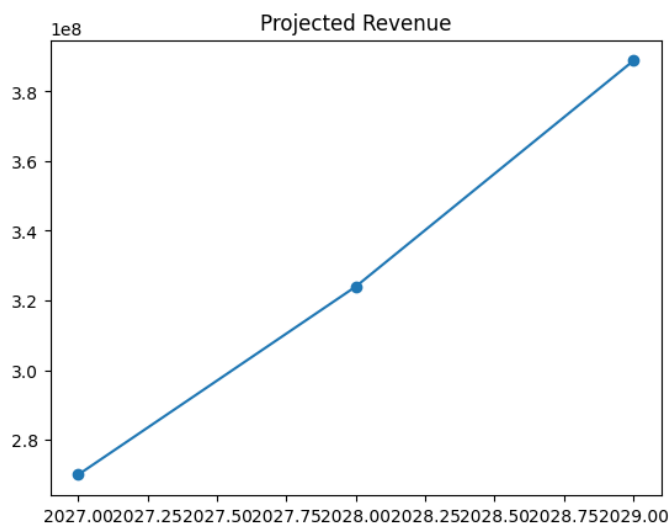


Figure 1 Projected Revenue of Nutsafir Cookies

Table 2. Simple Monthly Cash Flow Report for Nutsafir Cookies (Illustrative)

Cash Inflows	Amount (IDR)
Cash Sales	18,500,000
Credit Sales Collection	6,000,000
Other Operating Income	500,000
Total Cash Inflows	25,000,000

Cash Outflows	Amount (IDR)
Raw Material Purchases	9,500,000
Direct Labor Wages	4,000,000
Packaging Materials	1,200,000
Electricity and Water	700,000
Transportation and Distribution	900,000
Marketing Expenses	800,000
Administrative Expenses	600,000
Equipment Maintenance	300,000
Miscellaneous Expenses	500,000
Total Cash Outflows	18,500,000

Cash Position	Amount (IDR)
Beginning Cash Balance	5,000,000
Add: Total Cash Inflows	25,000,000
Less: Total Cash Outflows	(18,500,000)
Ending Cash Balance	11,500,000

The simple cash flow report indicates that Nutsafir Cookies generated total operating cash inflows of IDR 25,000,000 during the reporting period, primarily from product sales. Total cash expenditures amounted to IDR 18,500,000, with the largest proportion allocated to raw material purchases and labor costs. Consequently, the business generated a positive net operating cash flow of IDR 6,500,000, increasing the cash balance from IDR 5,000,000 at the beginning of the month to IDR 11,500,000 at month-end.

The implementation of this simple cash flow reporting system enabled the business owner to monitor daily cash movements more systematically, identify major expenditure categories, and evaluate monthly liquidity. During the mentoring sessions, participants learned to distinguish between cash receipts and cash payments, reconcile ending cash balances, and utilize cash flow information for short-term operational planning. Compared with previous manual records, the new reporting format provides clearer financial information for budgeting, purchasing decisions, and working capital management.

Overall, the adoption of simple cash flow reporting improved financial discipline and managerial decision-making. The owner reported greater confidence in planning production schedules, anticipating future cash requirements, and maintaining sufficient liquidity to support business expansion. These findings suggest that practical cash flow management training contributes to strengthening the financial sustainability and operational resilience of MSMEs, consistent with the objectives of the community service program.

The Technological Plan

Figure 2 illustrates the proposed Technology Plan for Nutsafir Cookies based on the principles of Industry 5.0, which emphasizes the integration of advanced digital technologies with human creativity, sustainability, and business resilience. Unlike Industry 4.0, which primarily focuses on automation and efficiency, Industry 5.0 places humans at the center of technological innovation while promoting environmentally responsible manufacturing practices.

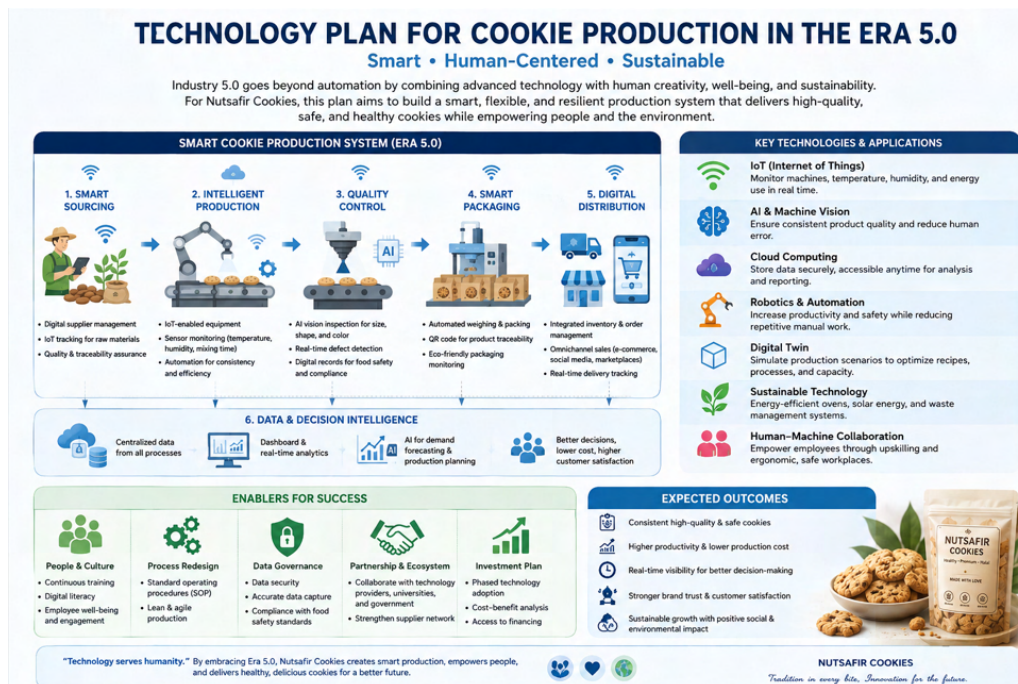


Figure 2. Technology Plan for Cookie Production in the Industry 5.0 Era

The production system begins with Smart Sourcing, where raw materials are procured through digital supplier management systems supported by Internet of Things (IoT) technology. IoT-enabled traceability allows the enterprise to monitor the quality, origin, and availability of locally sourced agricultural products in real time, ensuring food safety and supply chain transparency.

The second stage, Intelligent Production, incorporates IoT sensors and semi-automated production equipment to monitor critical processing parameters such as temperature, humidity, mixing time, and baking conditions. These technologies improve production consistency, reduce process variability, and increase operational efficiency while allowing workers to supervise and optimize production activities rather than replace them.

Quality assurance is strengthened through AI-powered Quality Control, where machine vision technology automatically inspects cookie size, color, shape, and packaging integrity. Artificial intelligence assists employees by rapidly identifying product defects, thereby improving product consistency, minimizing waste, and ensuring compliance with food safety standards.

The production process continues with Smart Packaging, which integrates automated weighing and packaging systems with QR-code-based traceability. Each product package can be digitally tracked throughout the distribution chain, enabling consumers and distributors to verify product authenticity, production dates, and quality certifications. The use of environmentally friendly packaging materials also supports sustainable manufacturing practices.

The final operational stage is Digital Distribution, where inventory management systems are integrated with e-commerce platforms, social media marketplaces, logistics providers, and digital

payment systems. This digital ecosystem enables real-time inventory monitoring, faster order fulfillment, accurate demand forecasting, and improved customer service across domestic and international markets.

At the center of the framework is Data and Decision Intelligence, which functions as the organization's digital brain. Production, inventory, sales, financial, and customer data are consolidated into cloud-based dashboards, allowing managers to perform real-time monitoring and predictive analytics. Artificial intelligence supports demand forecasting, production planning, and strategic decision-making, enabling more responsive and evidence-based management.

Successful implementation of the technology plan depends on several organizational enablers, including continuous employee training, process standardization, cybersecurity and data governance, collaboration with technology providers and universities, and phased investment planning. These supporting factors ensure that digital transformation remains financially feasible and aligned with organizational capabilities.

Overall, the proposed Industry 5.0 technology roadmap is expected to generate multiple benefits for Nutsafir Cookies, including improved production efficiency, consistent product quality, lower operational costs, enhanced food safety, stronger supply chain visibility, better managerial decision-making, and higher customer satisfaction. More importantly, the framework demonstrates that technology should complement rather than replace human capabilities by empowering employees to make better decisions while simultaneously supporting sustainable business growth. Consequently, the adoption of Industry 5.0 technologies provides a strategic pathway for strengthening the competitiveness and long-term sustainability of Nutsafir Cookies in increasingly digital and global food markets.

Marketing Plan

Figure 3 presents the proposed Marketing Strategic Plan for Nutsafir Cookies based on the principles of Industry 5.0, where marketing extends beyond digitalization by integrating advanced technologies with human-centered innovation, sustainability, and customer value creation. The strategic framework emphasizes that technology should support meaningful customer relationships, enhance operational efficiency, and promote sustainable business growth rather than merely increasing automation.



Figure 3 The proposed Marketing Strategic Plan for Nutsafir Cookies

The first component of the framework defines the company's vision and market positioning. Nutsafir Cookies aims to become a leading Indonesian premium healthy cookie brand recognized for product quality, innovation, halal assurance, and sustainability. The strategic positioning is supported by a Segmentation–Targeting–Positioning (STP) analysis that identifies health-conscious consumers, premium gift buyers, tourists, young professionals, and international customers as the primary target markets. The company positions itself as a producer of healthy, premium, locally sourced cookies that combine nutritional value with authentic Indonesian ingredients.

The second component describes the core marketing strategies that characterize the Industry 5.0 approach. These include human-centered value creation, data-driven marketing intelligence, omnichannel customer experience, sustainable marketing, and technology-enabled customer engagement. Rather than replacing human interaction, digital technologies such as artificial intelligence (AI), big data analytics, and customer relationship management (CRM) systems are employed to better understand customer preferences, personalize marketing communications, and strengthen long-term customer relationships.

The framework also highlights the company's value proposition, which differentiates Nutsafir Cookies from competing products. The cookies are produced from locally sourced grains, nuts, and beans without preservatives, providing healthier alternatives for consumers seeking nutritious snack options. Halal certification, compliance with Indonesian food safety standards (BPOM), environmentally friendly packaging, and support for local farmers further reinforce the company's commitment to quality, trust, and sustainability.

The Marketing Mix (Enhanced 4P) has been redesigned to align with Industry 5.0 principles. Product strategies focus on continuous innovation using local ingredients and attractive sustainable packaging. Pricing adopts value-based approaches reflecting premium quality while remaining competitive in domestic and export markets. Distribution combines physical outlets with digital marketplaces, e-commerce platforms, and international distribution channels to maximize accessibility. Promotional activities emphasize digital storytelling, influencer collaboration, social media engagement, content marketing, and community-based campaigns that communicate the company's social and environmental values.

Digital transformation is further supported through marketing technology utilization, where AI, big data analytics, IoT, social commerce, and marketing automation enhance customer engagement and business performance. Customer data collected across multiple digital channels are integrated into analytical dashboards that provide real-time insights into purchasing behavior, campaign effectiveness, inventory status, and market trends. These technologies enable personalized marketing campaigns, improve demand forecasting, and facilitate evidence-based managerial decision-making.

To ensure systematic implementation, the figure presents a three-stage implementation roadmap. The short-term phase focuses on strengthening digital channels, establishing CRM systems, and optimizing marketplace operations. The medium-term phase emphasizes AI-driven customer analytics, omnichannel integration, branding enhancement, and product diversification. The long-term phase targets international market expansion, sustainable innovation, ecosystem collaboration, and the establishment of Nutsafir Cookies as a globally recognized Indonesian healthy food brand.

Performance evaluation is represented through a set of Key Performance Indicators (KPIs), including annual sales growth, customer satisfaction, online sales contribution, export sales growth, repeat purchase rates, and sustainable packaging adoption. These indicators enable management to monitor strategic progress while ensuring that financial, customer, operational, and sustainability objectives are achieved simultaneously.

Overall, the Industry 5.0 marketing strategic plan demonstrates how advanced digital technologies and human-centered values can be integrated to create a resilient and competitive

marketing ecosystem. By combining personalized customer experiences, sustainable business practices, digital innovation, and strong community engagement, Nutsafir Cookies is expected to strengthen brand equity, expand into international markets, increase customer loyalty, and achieve long-term business sustainability. The framework reflects the central philosophy of Industry 5.0 that technology should empower people, create shared value, and contribute positively to society and the environment.

CONCLUSION

The community service program enhanced financial management capacity at Nutsafir Cookies through practical costing and cash-flow reporting. Continued mentoring and digital bookkeeping adoption are recommended. The intervention improved financial capability by introducing practical accounting tools. Accurate costing reduced underpricing risk while cash-flow reporting supported liquidity planning.

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