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ASSISTANCE IN SUPPLY CHAIN MANAGEMENT AND COST OF QUALITY (COQ) CONTROL FOR COFFEE SMES AS HOTEL AND RESTAURANT SUPPLIERS IN LABUAN BAJO

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Abstract

This community engagement initiative aims to enhance the capabilities of coffee Small and Medium Enterprises (SMEs) in Labuan Bajo, focusing on Supply Chain Management (SCM) and Cost of Quality (CoQ) control. The rapid growth of the tourism industry in Labuan Bajo has significantly increased the demand from the Hotel, Restaurant, and Catering (Horeca) sector, which requires a consistent and high-quality supply of local products, particularly coffee. The target audience for this program was coffee SMEs that are current or potential suppliers to the Horeca industry. The implementation method involved a pre-assessment, interactive workshops, on-site coaching to map supply chains, and practical guidance on identifying and calculating CoQ components (prevention, appraisal, and failure costs). The results indicate a substantial improvement in participants' understanding of SCM principles and the strategic importance of CoQ. Participants successfully mapped their value chains and began implementing simple quality checkpoints. This program provides SMEs with the practical tools to become more reliable and competitive suppliers, strengthening the local economic ecosystem by linking small producers to the high-value tourism market.

Keywords: *Supply Chain Management, Cost of Quality (CoQ), Coffee SMEs, Labuan Bajo, Horeca*

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of Indonesia's economy, representing more than 99% of businesses nationwide and contributing significantly to job creation, poverty alleviation, and GDP growth. The role of Micro Small Medium Enterprises (MSMEs) in addressing unemployment is significant, especially in OECD countries where they make a substantial contribution to employment and income (Octasylva, 2022). Despite their importance, MSMEs face various challenges such as limited resources, marketing issues, low productivity, and lack of innovation. Within this landscape, the coffee industry stands out as one of the most promising sectors. Indonesia is the world's fourth-largest coffee producer, with vast potential to supply the growing global demand for specialty coffee. However, while this potential is substantial, many coffee-based MSMEs face persistent challenges such as limited access to financing, inadequate financial management, and lack of technological adaptation. These issues often prevent them from scaling up and competing effectively in international markets.

Databajo Coffee, located in Labuan Bajo, East Nusa Tenggara, exemplifies both the opportunities and challenges of Indonesian coffee MSMEs. Founded by local entrepreneur Afrianus Jebaut, Databajo Coffee specializes in high-quality beans processed through semi-washed and full-washed methods to preserve distinctive flavors. Beyond producing premium coffee, the enterprise supports local farmers by providing market access and contributes to the regional economy through job creation. Situated in a rapidly growing tourist destination, the company is uniquely positioned to attract both domestic and international consumers. Despite these strengths, the absence of structured financial management practices has constrained Databajo Coffee's ability to achieve sustainable growth and global competitiveness.

Zahwa, et al (2025) confirms the crucial role of digital literacy and company resources in driving digital innovation and enhancing business performance in MSMEs, with digital innovation acting as a pivotal mediator in improving business outcomes. Financial management is a pivotal factor in determining the long-term success of MSMEs. For businesses like Databajo Coffee, weak financial practices manifest in inefficient cash flow, poor cost allocation, and limited access to credit. These constraints not only reduce profitability but also hinder the ability to invest in production, marketing, and innovation. In contrast, the adoption of modern financial strategies—including digital accounting tools, structured budgeting, and financial forecasting—can enable MSMEs to optimize operations, enhance transparency, and build credibility with investors and lenders. For Databajo Coffee, such a transformation is essential to strengthen its competitive advantage, expand its market reach, and ensure sustainable global expansion.

Against this background, the present community service initiative is designed to support Databajo Coffee in transforming its financial management practices. By integrating mentorship, training, and the implementation of digital financial tools, the project seeks to empower the business to achieve financial resilience and long-term sustainability. Furthermore, this effort aims to serve as a replicable model for other Indonesian coffee MSMEs facing similar challenges. Strengthening financial literacy and management among coffee enterprises is not only vital for individual business success but also contributes to Indonesia's broader goal of enhancing the global presence of its coffee industry.

METHOD

This community engagement program was structured as a participatory and coaching-based initiative, prioritizing practical application over pure theory.

1. **Target Audience and Location**

   The activity was conducted in Labuan Bajo, West Manggarai. The target audience consisted of 10 coffee SMEs (including small roasteries and processed coffee bean producers) identified through collaboration with the local Cooperatives and SME Office (Dinas KUKM). The selection criteria were: (1) already operating for at-least one year, (2) processing local Flores coffee, and (3) expressed interest in supplying the Horeca market.
2. **Module and Material Development**

   Simple, bilingual (Indonesian and English) educational modules were developed, focusing on visual aids and simple calculations. The materials covered:
   a. Introduction to SCM: Basic concepts, the "farm-to-hotel" flow, and the importance of reliability.
   b. SCM Mapping: A practical guide to visually mapping their own supply chain.
   c. Introduction to CoQ: Defining the four categories (Prevention, Appraisal, Internal Failure, External Failure) with coffee-specific examples.
   d. Practical CoQ: How to identify and track "hidden costs" (e.g., re-roasting, spoilage, customer complaints).
3. **Implementation Stages** The program was executed in three main stages over two months:
   a. Initial Assessment and Pre-Test: A pre-test was administered to gauge baseline knowledge of SCM and CoQ. This was combined with a qualitative interview to understand their current business processes, challenges, and relationships with farmers and buyers.
   b. Workshop and Simulation: A one-day intensive workshop was held to deliver the core concepts. This session was interactive, using simulations in which SMEs practiced mapping a supply chain and identifying different CoQ costs using case studies.
   c. On-Site Coaching: This was the most critical phase. The service team visited each SME individually to provide one-on-one coaching. This allowed for customized assistance, helping each owner map their *specific* supply chain and identify their unique quality checkpoints and failure costs.
4. **Evaluation** Program effectiveness was measured using a mixed-methods approach:
   a. Pre-test and Post-test: To quantitatively measure the increase in participants' understanding.
   b. Practical Output: Evaluation of the SCM maps and CoQ tracking sheets developed by the participants during the on-site coaching.
   c. Qualitative Feedback: A concluding focus group discussion to gather feedback on the program's relevance, clarity, and perceived benefits.

RESULT AND DISCUSSION

The implementation of the assistance program yielded significant, measurable results, primarily by enhancing the operational literacy of the 10 participating coffee SMEs. The initial assessment confirmed a very low baseline understanding of the program's core concepts. The pre-test results showed that only 20% of participants (2 SMEs) could correctly define Supply Chain Management beyond simple "logistics," and none (0%) were familiar with the concept or term "Cost of Quality" (CoQ).

The quantitative evaluation, using pre-test and post-test scores, demonstrated substantial knowledge gain. After the workshop and coaching sessions, the average post-test score on SCM principles (including inventory, supplier relations, and traceability) rose from an initial 22% to 78%. This indicates a significant improvement in theoretical understanding, providing a necessary foundation for practical implementation.

A similar positive trend was observed in the understanding of CoQ. In the pre-test, no participant could correctly categorize different quality costs. In the post-test, 80% of participants (8 SMEs) were able to correctly identify and differentiate between Prevention costs (e.g., farmer training), Appraisal costs (e.g., cupping/tasting), Internal Failure costs (e.g., re-sorting bad beans), and External Failure costs (e.g., a hotel rejecting a batch).

The most tangible result of the program was the successful development of practical tools during the on-site coaching. All 10 participating SMEs completed a visual map of their specific supply chain, from the farmer or collector to their processing unit and finally to their customer (Horeca or retailer). This exercise was reported by many as the first time they had ever visualized their entire business process flow, which immediately highlighted bottlenecks and risks.

In terms of CoQ application, the coaching helped SMEs identify their most significant "hidden" costs. For example, 7 out of 10 SMEs identified "Internal Failure" (specifically, the time and material wasted on re-sorting or re-roasting inconsistent raw beans) as their most considerable quality-related cost. Previously, this was accepted as a "cost of doing business" rather than a manageable expense.

Participant feedback collected during the final focus group discussion was overwhelmingly positive. One participant, a small roastery owner, stated, "The CoQ concept, especially 'failure costs,' changed my perspective. I now understand that paying more for better-sorted green beans (a Prevention cost) is actually cheaper than wasting time and gas re-roasting a bad batch (a Failure cost)." This change in mindset is a critical precursor to behavioral change in business operations.

Discussion

The significant jump in post-test scores (from 22% to 78% in SCM) validates the initial assumption that the knowledge gap is a primary barrier. This finding aligns with broader research on SME development, which identifies low operational and financial literacy as a key constraint to growth (Nugraha et al., 2025). The low initial scores were not due to a lack of intelligence, but a lack of exposure to these formal business concepts, which are rarely, if ever, part of informal SME training.

The on-site coaching method proved far more effective than the classroom workshop alone. While the seminar introduced the "what" (the concepts), the coaching addressed the "how" (the application). This practical, customized approach is essential for adult learners, particularly micro-entrepreneurs who are often time-poor and prefer context-specific, actionable solutions. (Bismala et al., 2019). The SCM mapping, for instance, moved SCM from an abstract academic term to a tangible tool for business planning.

The discussion on Cost of Quality (CoQ) was a paradigm shift for the participants. The framework, as pioneered by Crosby (1979), re-conceptualizes quality spending as an investment, not an expense. For the Labuan Bajo SMEs, grasping that "Internal Failure" (like wasted beans) was a *cost* they could *control* was revelatory. This moves them from a reactive (fixing problems) to a proactive (preventing problems) management style, which is precisely what Horeca buyers, who value consistency above all, are looking for.

This program's integration of SCM and CoQ is particularly relevant in the Labuan Bajo context. The Horeca industry's demand for traceability (an SCM function) is inextricably linked to its demand for consistent quality (a CoQ function). A hotel's purchasing manager needs to know *both* where the coffee came from (SCM) and that every batch will taste the same (CoQ). This program demonstrated that SMEs must address both issues simultaneously to be considered professional suppliers.

Several challenges were encountered during the implementation. First, many SMEs had inconsistent or non-existent bookkeeping, making it challenging to attach "rupiah" values to the CoQ categories. The initial calculations were therefore based on estimates of time and materials (e.g., "how many hours per week do you spend re-sorting?"). Second, there was initial resistance to sharing information, which was overcome by building trust during the one-on-one coaching sessions.

The results of this engagement suggest that for SMEs to link with high-value markets successfully, assistance must go beyond generic "how to sell" training. It must focus on building robust internal systems (SCM) and a managerial mindset concentrate on efficiency and quality (CoQ). The success of this integrated model provides a template for replicating in other local commodities (e.g., horticulture, fisheries) seeking to penetrate the demanding Horeca supply chain in Labuan Bajo and other tourism-priority destinations.

CONCLUSION

This community engagement program was designed with the clear objective of enhancing the operational capabilities of coffee SMEs in Labuan Bajo, specifically focusing on Supply Chain Management (SCM) and Cost of Quality (CoQ) control. The program can be concluded as a success, having effectively met this primary goal. It provided a targeted, hands-on intervention that moved participants from informal operational habits toward a more structured and professional management approach, a necessary step for sustainable business growth in a high-demand tourism environment.

The initiative's success is rooted in its direct response to a critical gap: the disconnect between the high standards of the Horeca sector and the capabilities of local SME suppliers. The rapid growth of tourism in Labuan Bajo has created a demand for reliable, *consistent* local products, yet local SMEs have historically been unable to meet these procurement standards. This program acted as a crucial bridge, directly addressing the knowledge and skills deficit that previously prevented these small businesses from accessing high-value contracts.

The significant improvement in participant knowledge quantitatively demonstrates the program's effectiveness. Pre-test results confirmed a low baseline understanding of both SCM and CoQ. However, the post-test scores, administered after the workshop and coaching, showed a substantial increase in comprehension. This measurable gain in theoretical understanding of SCM principles and the four CoQ categories provided the essential foundation for building practical skills, validating the educational component of the intervention.

Beyond theoretical knowledge, the program's most significant achievement lies in translating these concepts into tangible, practical applications. The on-site coaching component was pivotal. It ensured that the learning was not merely academic but was immediately applied to each SME's unique operations. The successful mapping of their individual supply chains by all participants and their initial identification of internal failure costs were direct, practical outcomes that demonstrated this applied learning.

Ultimately, this program catalyzed a critical shift in participants' managerial mindset. SMEs moved from viewing quality as an abstract goal or an unavoidable cost to understanding it as a measurable and manageable business variable. By learning to track and control their "failure costs," they unlocked a new perspective on profitability and efficiency. By equipping these SMEs with the tools and the mindset to improve their reliability, this program directly supports their individual competitiveness. It contributes to a more inclusive, robust local tourism economy where small producers can participate meaningfully.

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