

## THE RELATIONSHIP BETWEEN THE IMPLEMENTATION OF QUALITY COSTS AND EFFORTS TO IMPROVE PRODUCT QUALITY (A CASE STUDY AT PT INDUSTRI JAMU DAN FARMASI SIDO MUNCUL TBK)

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### ABSTRACT

*The use of herbal medicine products has seen a decline in trust due to a lack of scientific evidence proving their effectiveness, perceptions of unsafe or unhygienic ingredients, and the negative stigma that views herbal medicine as an outdated form of treatment. However, herbal medicine is believed to have fewer side effects due to the use of natural ingredients passed down through generations. Despite this, many herbal products with chemical ingredients and easily accessible imported herbal products negatively impact the development of traditional herbal medicines, especially in small-scale industries that lack standardization in line with Good Traditional Medicine Manufacturing Practices. Quality costs are the expenses incurred to perform all activities related to the development of product quality. These costs include prevention, appraisal, internal failure, and external failure costs. Quality costs serve as an indicator of product quality success and competitive advantage. PT Industri Jamu dan Farmasi Sido Muncul, the largest herbal medicine producer in Indonesia, strives to improve product quality through consistent supervision and quality enhancement. This study employs a case study method to analyze the relationship between the implementation of quality costs and efforts to improve product quality at PT Sido Muncul. The findings indicate that effective quality cost control contributes to product quality improvement, reduces defective products, lowers costs, and increases profits. Sido Muncul emphasizes the use of science, technology, and research to create high-quality products. Thus, significant investments in product quality improvement provide the company with a competitive advantage, enabling it to maintain and increase its market share.*

**Keywords:** Cost Concept, Product Quality, Quality Costs

### INTRODUCTION

In recent years, herbal medicine products have generally been less trusted because of the lack of scientific evidence proving their effectiveness, perceptions that the ingredients used are unsafe or unhygienic, and the negative stigma that views herbal medicine as a form of traditional treatment that is less relevant in modern times. On the other hand, the use of traditional medicine is also believed to be an effort to maintain health, prevent diseases, and provide healthcare because the quality of herbal medicine tends to have fewer side effects with the use of natural ingredients passed down from generation to generation.

However, many herbal products with chemical ingredients are still circulating, potentially damaging the development of traditional herbal medicines. Moreover, imported herbal products, which are easily found in the domestic market, also

negatively impact competition and the image of herbal medicine, especially in small-scale industries. This is because of the capability and competitiveness of small businesses that produce herbal products that still need to be standardized according to Good Traditional Medicine Manufacturing Practices. Therefore, oversight is needed to improve product quality by increasing expenditure on quality costs so that the public becomes more confident and trusting when using traditional herbal medicine.

Quality costs are the costs used to carry out all activities undertaken by a company in relation to the development of the quality of a produced good; the company must incur costs to perform its quality activities (Fadilah, Nurleli, et al., 2021). According to Blocher (2007), "Quality costs are costs related to preventing, identifying, improving, and correcting low-quality products and the opportunity cost of lost production and sales time due to low quality." Quality costs are categorized into four categories: prevention, appraisal, internal failure, and external failure (Amran et al., 2021; Fadilah, Maemunah, Lim, et al., 2019; Izzaturahman et al., 2023; Lestari et al., 2022; Nurcholisah et al., 2023; Nurhayati, Hartanto, Paramita, et al., 2023; Nurhayati, Hartanto, & Pramono, 2023; Oktaroza, Purnamasari, et al., 2022; Purnamasari, Amran, Nu'man, et al., 2022; Purnamasari, Rahmani, et al., 2020; Purnamasari & Umiyati, 2019; Rahayu, 2023). Prevention and appraisal costs are incurred before defective products occur, whereas internal and external failure costs are incurred after goods or services are marketed.

Product quality is a need that cannot meet consumer expectations and must be promptly addressed by the company—that is, by developing products according to certain consumer expectations (Gajewska et al., 2020). Through efforts to improve products by increasing quality costs, it is hoped that the public will be attracted to herbal medicinal products. According to Maryati (2022), product quality is a totality of the characteristics of a product or service that can meet stated or implied needs. Customer experience in purchasing good or bad products influences consumers to make repeat purchases (Fadilah, Rosidana, et al., 2021). Therefore, product quality is a product's ability to meet all consumer needs according to consumer needs and desires. Companies use quality costs as an indicator of product quality success, which can be linked to their competitive advantage in efforts to improve product quality or achieve established quality standards. When implementing quality improvement programs, companies must also pay attention to cost efficiency; they must be able to produce quality products while maintaining competitive selling prices.

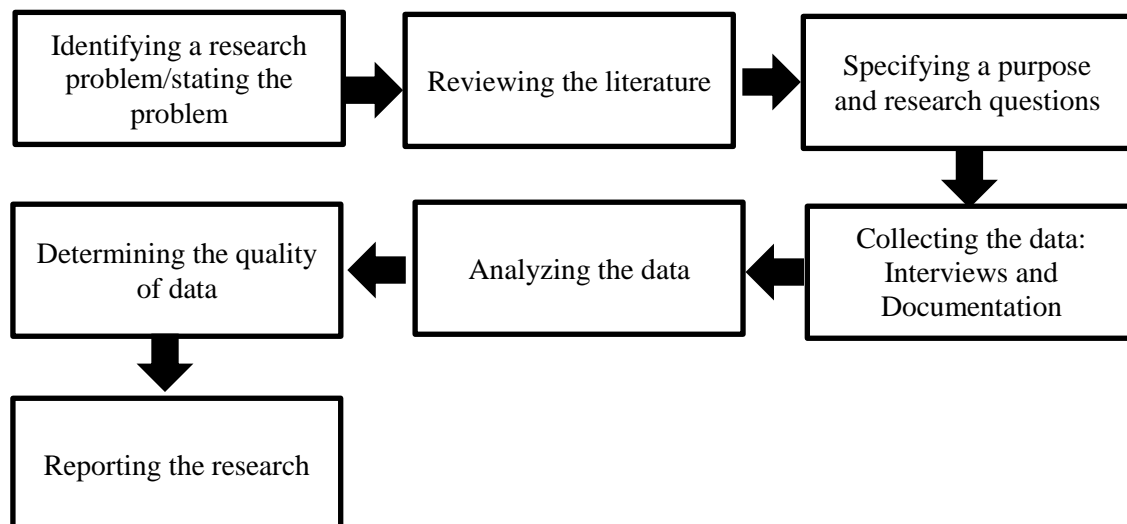
Quality costs in product quality can be used to determine the extent to which the company implements the quality control system functions. The lower the quality costs, the better the product quality improvement program implemented by the company. The better the quality produced, the higher the market share and sales value. In another study, namely, in a printing company, quality costs significantly affected the improvement of product quality in the Trinity Printing Manado. This means that the better the determination of quality cost usage, the higher the quality of the product produced (Ransun, 2016). PT Industri Jamu dan Farmasi Sido Muncul is a company operating in the pharmaceutical and herbal medicine industry, consistently striving to improve its product quality. Quality costs (cost of quality) include prevention, appraisal, internal failure, and external failure. Understanding how the allocation of quality costs affects the products produced is crucial. This study aims to determine the relationship between the implementation of quality costs and efforts to improve product quality. Therefore, the researcher raises the question of the relationship between quality costs

and product quality.

## RESEARCH METHODS

This research was conducted at PT Industri Jamu dan Farmasi Sido Muncul Tbk, the largest and most modern herbal medicine producer in Indonesia, with the largest market share in the traditional herbal product category. This research uses a case study method. A case study is a research strategy where the author carefully investigates a program, event, activity, process, or group of individuals. This research explores a case over a certain period through in-depth and detailed data collection from various reliable information sources (Roosinda et al., 2021). The purpose is to analyze the relationship between the implementation of quality costs and efforts to improve product quality at PT Industri Jamu dan Farmasi Sido Muncul Tbk, allowing the researcher to conduct an in-depth analysis of the relationship between quality costs and product quality improvement in the company's context. This method is conducted through direct observation, interviews with managers and staff, and analysis of published data (Fadilah, Maemunah, & Hernawati, 2019).

According to Sugiyono (2011), a case study is a type of qualitative research that delves into individuals, groups, institutions, and others over a certain period. The purpose of a case study is to find meaning, examine processes, and gain a deep and comprehensive understanding of specific individuals, groups, or situations. Data in case studies are collected through interviews, observations, and analysis of various documents relevant to the research topic. Case study research is exploratory. Its object of study is very specific and is used as the main consideration by researchers to conduct in-depth exploration (Purnamasari, Amran, & Hartanto, 2022).



**Figure 1.** Research Methodology Case Study at PT Sido Muncul Tbk

## RESULTS AND DISCUSSION

To achieve high-quality products, the company consistently supervises and improves product quality to ensure optimal results. Quality Control is an essential part of Good Manufacturing Practices to ensure that the product consistently meets its intended use quality. PT Sido Muncul has established policies related to quality costs, in line with the theories presented, such as:

a) Prevention Cost

The prevention costs undertaken by PT Industri Jamu & Farmasi Sido Muncul, Tbk aim to reduce quality cost issues and product quality problems through the highly effective Quality Control (QC) and Research & Development (R&D) divisions. PT Industri Jamu & Farmasi Sido Muncul, Tbk aspires to maintain quality standards that the public can enjoy and prioritize food safety to eliminate the stigma of allergies to herbal medicine. To perform quality control and research and development functions, the QC and R&D divisions have laboratories with ISO 17025 standards.

b) Appraisal Cost

PT Sido Muncul not only relies on high-quality and fresh natural ingredients but also emphasizes research, science, and technology in its production processes. Sido Muncul is committed to adhering to local and international food safety standards and certifications, particularly in terms of quality and food safety, such as Good Manufacturing Practices (GMP), Good Manufacturing Practices for Traditional Medicines (CPOTB), ISO 9001, ISO 22000, HACCP, and Halal certification systems. They ensure that the information on products and labels complies with government regulations and the Food and Drug Monitoring Agency (BPOM). The packaging used in Sido Muncul products meets the regulations and standards of the Indonesian Government for food and medicine products. To achieve high-quality products, the company must consistently supervise and improve quality to ensure optimal outcomes. This quality improvement will reduce the number of defective products, lower costs, and ultimately increase profits (Fadilah, Nurleli, et al., 2021).

c) Internal Failure Cost

Costs incurred by PT Sido Muncul due to product nonconformance with established quality standards but identified before the product is shipped to customers fall under internal failure costs. This includes all costs arising because the product does not meet quality standards and is detected before reaching consumers. Components of Internal Failure Costs include:

- 1) Disposal Costs: Products that do not meet quality requirements must be disposed of. This includes raw material and production costs for unusable products.
- 2) Reprocessing Costs: Products that do not meet quality standards must be repaired or reprocessed to meet specified requirements. This includes labor costs, additional materials, and extra production time.
- 3) Additional Inspection and Testing Costs: Additional inspections and testing are often required to detect nonconforming products. This involves additional time and resources for further inspections.
- 4) Production Downtime Costs: Production downtime occurs when the production process must be halted to address quality issues. This includes production losses during downtime.
- 5) Additional Material Costs: These are additional costs for obtaining raw materials used in reprocessing or replacing damaged materials.

Internal failure costs reflect the various types of expenses PT Sido Muncul incurs to handle products that do not meet quality standards before they reach customers. By detecting and handling these issues internally, the company can reduce the larger negative impacts and additional costs that might arise if defective products reach consumers.

d) External Failure Cost

Costs incurred by PT Sido Muncul due to product nonconformance with established quality standards but only discovered after the product is in the hands of customers fall under external failure costs. The impact is very detrimental as it can directly disrupt the company's reputation, cause customer loss, and decrease market share. This includes the need to recall nonconforming products from customers, covering return shipping costs, return processing, and product replacement, all of which incur additional costs and increase customer dissatisfaction.

The occurrence of revenue loss as customers switch to competitors due to negative experiences with nonconforming products is also a significant impact. Additionally, the company's reputation can be tarnished in the eyes of customers and the broader public, leading to long-term revenue decline and difficulties in restoring the company's image (Lestari, R. & Purnamasari, P. 2023). External failure costs are highly detrimental to PT Sido Muncul due to their direct impact on the company's reputation, customer loss, and market share. Therefore, it is crucial for the company to invest in an effective quality control system to prevent product nonconformities that could lead to substantial external costs. The Quality Control process at PT. Sido Muncul begins with raw material inspection and continues through to the finished product. This inspection includes:

- 1) Raw Material Inspection: Ensuring that raw materials for production meet specified identity, quality, and safety requirements. Packaging materials are also inspected for size, weight, thickness, and design.
- 2) In-Process Control (IPC): Ensuring that production stages follow existing procedures. Products must meet specified standards before distribution to consumers. IPC supervision includes: (A) Organoleptic inspection including color, smell, and taste; (B) pH, moisture content, brix, viscosity, and disintegration time inspection; (C) Active ingredient inspection; (D) Support facility inspection including production environment, water, and production equipment; (E) Secondary final packaging inspection, including inner box coding check, sachet quantity in inner box/outer roll, and box coding; (F) Microbial contamination, aflatoxin, and heavy metal contamination inspection.
- 3) Retained Sample: Each production batch will have a number of samples retained for storage until one year past the expiration date as retained samples. This is done to check stability and for comparison in case of consumer complaints.

In addition to good Quality Control, PT. Sido Muncul also places great importance on science and technology, as well as a strong research base, to create high-quality products (Nurhayati & Susanto, 2017; Purnamasari, Pramono, et al., 2020). Therefore, PT Sido Muncul equips its factories with facilities that support pharmaceutical standards. Some of these include laboratories certified by the International Standard



Organization (ISO) 17025 and production facilities with CPOB and CPOTB standards. Even the pipes used are of international standards, ensuring very good product quality according to all standards. Besides supporting facilities, employees at PT. Sido Muncul are required to use personal protective equipment such as face masks, hair masks, and footwear to maintain product hygiene. The quality costs used by PT. Sido Muncul are undoubtedly significant. Other costs used for product improvement also focus on R&D for continuous innovation. Besides continuously creating new products, PT. Sido Muncul also innovates existing products, including formula, packaging, taste, and marketing strategies to remain relevant in the community. Therefore, R&D at PT. Sido Muncul must be adept at analyzing cycles. Moreover, to balance the company's profit, PT. Sido Muncul continues to manage expenses with existing income through profit substitution. PT. Sido Muncul will substitute profit by taking profits from high-profit products (such as Tolak Angin and Kuku Bima) to support products with lower profits so that these products can still be produced.

PT Sido Muncul has established policies related to prevention costs, in line with the theory. PT Sido Muncul applies a cautious approach to prevent these risks by monitoring, analyzing, and making strategic decisions on findings that pose potential risks that may inhibit business growth based on the company's values, vision, and mission by identifying risks and making correct strategic decisions (Izzaturahman et al., 2023; Oktaroza, Maemunah, et al., 2022). Disruption in the production system can result in finished products not meeting the company's production standards. This risk can arise from inaccuracies ranging from raw material procurement to packaging. Considering that the products produced are closely related to health issues and healthcare, to avoid the risk of product damage, the Company is obliged to recall products circulating in the market if there are problems with the product.

## **CONCLUSION**

PT Industri Jamu dan Farmasi Sido Muncul is the largest and most modern herbal medicine producer in Indonesia, with the largest market share in the traditional herbal product category. Sido Muncul is committed to growing in line with the principles of People, Planet, and Profit to create a sustainable and responsible company (Fadilah et al., 2020). Overall, it has shown a strong awareness of the importance of product quality in facing a competitive market. The significant investments made in product quality improvement have provided the company with an advantage, enabling it to maintain and increase its market share. Although other costs also impact profits, reports indicate that the improvement in product quality is a worthwhile investment for the company. Therefore, the company may have successfully applied the of quality sequencing broadly within its value chain. PT Sido Muncul needs to enhance the management of quality costs more effectively and improve the overall quality of its products to ultimately increase customer satisfaction and competitiveness in the market.

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