

EXAMINING THE COST OF QUALITY IN THE CALCULATION OF COST OF GOODS OF PRODUCTION OF PALOLO DISTINCTIVE BROWN SUGAR***MENELISIK BIAYA KUALITAS DALAM KALKULASI HARGA POKOK PRODUKSI GULA MERAH KHAS PALOLO***

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ABSTRACT

This study aims to find the concept of quality cost in calculating the cost of goods of typical Palolo brown sugar products in Palolo District, Sigi Biromaru Regency. This research is a qualitative study using an ethnomethodological approach. The research found four groupings in determining the COGS of brown sugar, namely Raw Material Costs, Support Costs, Factory Overhead Costs, and Quality Costs-Prevention Costs. In the brown sugar production process, from four categories of quality costs, the new brown sugar artisans carry out preventive cost activities, which include brown sugar quality planning activities, controlling the production process, and evaluating the quality of brown sugar.

Keywords : Cost Of Quality, Cost Of Good Manufactured

ABSTRAK

Penelitian ini bertujuan menemukan konsep biaya kualitas dalam kalkulasi harga pokok produk gula merah khas Palolo di Kecamatan Palolo Kabupaten Sigi Biromaru. Penelitian ini merupakan penelitian kualitatif dengan menggunakan pendekatan etnometodologi. Penelitian menemukan bahwa empat pengelompokan dalam penentuan HPP gula merah yaitu: Biaya Bahan Baku, Biaya Penolong, Biaya Overhead Pabrik, dan Biaya Kualitas-Biaya pencegahan. Proses produksi gula merah, dari empat kategori biaya kualitas pengrajin gula merah baru melakukan aktivitas biaya pencegahan yang meliputi kegiatan perencanaan kualitas gula merah, pengendalian proses produksi, dan evaluasi terhadap kualitas gula merah.

Kata Kunci : Biaya Kualitas, Harga Pokok Produksi

1. INTRODUCTION

Coconuts can grow at altitudes below 500 m above sea level (asl) and in specific locations, such as in the mountains at an altitude of 900 m asl. Coconut fruit can be used as white copra, raw materials for cosmetics, art trinkets, margarine, activated carbon, shampoo making materials, and raw materials for medicines. In addition to processing coconut fruit into various kinds of high-value economic products as above, other products are no less critical as processed from coconut is nira. Nira products that can be developed include brown sugar, bioethanol, and sugar, as well as food for bees.

Nira is a clear liquid that comes from the cores of coconut trees whose shoots have not yet opened. The tapping process is done twice a day, in the morning and evening. Generally, one punch can be tapped for 10-35 days with a maximum production of only 15 days, depending on the condition of the tree and the type of coconut. Brown sugar is the result of coconut sap processing, has a distinctive taste, and functions as a sweetener and brown color giver in food and beverages. It can also be used as a business for coconut farmers to produce brown sugar.

Every business has a goal to optimize profitability (profit) for the welfare of the company itself. Achieving optimal profit can be done by increasing revenue from the sale of goods or services or by reducing business costs. To get the maximum income, businesses can improve the quality of goods or services produced so that consumer interest in buying these products increases. This is because good product quality can compete in the market while other products will displace low product quality.

Trubus (2010:1) explains that “the problem is not to increase quality, increasing quality is the answer to the problem”. Thus, global competition in the business world includes the ability of a business to understand what consumers want and try to fulfill it at the lowest cost level, provide goods and services needed by consumers with high and consistent quality, keep abreast of technological, political, and social developments that occur in the business environment, and be able to predict what consumers want even for the next decade. Businesses that are able to meet these criteria will be able to maintain their market by increasing profitability.

Technological advances in every sector have a significant impact on business operations. This influence on the economic, social, cultural, security, and industrial sectors, as well as the ones directly affected, are businesses, both those engaged in producing goods and those providing services to the community. This is not an easy thing for businesses to do because companies are required to set business strategies that further enhance competitive advantage. Therefore, making quality a business strategy tool can provide more valuable benefits, so businesses are required to provide high quality, cheaper or affordable prices, and timely completion so that customer satisfaction can be achieved.

As a business strategy tool, the concept of quality cost, which includes prevention cost, assessment cost, and failure cost, is one of the concepts that support quality improvement and improvement for businesses. The quality cost concept provides an opportunity for companies to identify activities and costs that should be incurred to produce quality products. Tracing production costs, including quality costs, must be done accurately to determine the cost of goods manufactured.

The accuracy in determining cost of goods manufactured, in addition to raw material costs, labor costs, and factory overhead costs, also requires the identification of quality costs, which include prevention costs, assessment costs, and failure costs. This is intended not only for accuracy in the calculation of cost of goods manufactured but also to plan quality production activities so as to avoid product failure. Activities that incur prevention costs are included in value-added activities, while assessment costs and failure costs are included in costs that produce non-value-added activities. However, all quality improvement efforts aim to meet customer satisfaction because the focus of quality is the customer.

The concept of quality for businesses, in addition to providing customer satisfaction with the products produced, is also expected to increase business sales ultimately. Increased business sales come from customer loyalty, which always expects quality service products. Increased sales also occur due to the expansion of the market share that consumes/uses business products. If this happens, it will ultimately have an impact on the financial performance of the business, especially the financial condition, namely, business profits. To achieve the desired profit goal, before determining the selling price, the business needs to calculate the cost of goods manufactured carefully so that there are no errors in determining the selling price.

The phenomenon that occurs in typical Palolo brown sugar craftsmen in Palolo District, Sigi Biromaru Regency, is that the quality and continuity of brown sugar production are still low, so the benefits obtained by brown sugar producers are not maximized. Brown sugar that is good quality usually has an intact, clean, neat shape and no moldy parts. Another thing is that the texture of brown sugar is usually solid and hard, and the color of brown sugar is dark brown and light brown. But sometimes, if the cooking process is not correct, the quality of brown

sugar is not as expected, such as brown sugar that is easily liquid, dirty, and has a bitter taste. In calculating the cost of production, brown sugar craftsmen in Palolo still use intuition and do not consider quality costs in the calculation of the cost of goods manufactured of brown sugar. Quality costs have not been a concern for brown sugar craftsmen.

The results of Masyita (2012) on the Role of Assessment Costs in Increasing the Efficiency of Production Costs at PT Telkom Palu, namely the actual amount of costs incurred by PT Telkom Palu in controlling its quality and what activities cause the most significant costs, namely quality costs from production costs. The results of this study show that quality costs can affect the cost of goods manufactured of typical Palolo brown sugar.

Based on the description above, this research aims to find the concept of quality cost in calculating the cost of goods of typical Palolo brown sugar products in Palolo District, Sigi Biromaru Regency. The contribution of this research is to find empirical evidence of quality costs in calculating the cost of goods sold of typical Palolo brown sugar products. This will also be a reference for the brown sugar home industry in determining the cost of goods improving the quality of production so that it can be competitive in the market.

2. Literature Review

2.1. Cost Concept

The cost has two definitions, namely broad and narrow definitions. Costs, in a broad sense, are sacrifices of economic resources measured in units of money in an effort to get something to achieve specific goals, both those that have occurred and those that have not occurred/are just planned. Costs, in a narrow sense, are sacrifices of economic resources in units of money to acquire assets. Supriyono (2017: 16) states, "cost is the acquisition price that is sacrificed or used in order to obtain income (revenue) and will be used as a reduction in income." Mulyadi (2015: 23) states that "cost is an object processed by cost accounting. In a broad sense, costs are sacrifices of economic resources, measured in units of money, that have occurred or are likely to occur for certain purposes".

The definition of cost, according to Dunia and Abdullah (2012: 22), is "costs are expenses or sacrifice values to obtain goods or services that are useful for the future, or have benefits beyond one accounting period." Meanwhile, the definition of cost, according to Siregar et al. (2014: 23), is "Cost is a sacrifice of economic resources to obtain goods or services that are expected to provide benefits now or in the future." Meanwhile, Bustami and Nurlela (2007: 7) state that costs in accounting are defined in two different terms, namely, costs in the sense of *cost* and costs in the sense of *expense*. Cost in the sense of *cost* is a sacrifice of economic resources, which is measured in units of money that have occurred or are likely to happen to achieve specific goals; this cost has not expired and is classified as an asset that is included in the balance sheet. Meanwhile, costs in the sense of *expense* are those that have provided benefits and are now exhausted. Costs that have not been enjoyed that can provide benefits in the future are grouped as assets. These costs are included in profit and loss as a deduction from income.

According to Carter (2009: 53), cost classification is a process of systematically grouping costs of all existing cost elements into specific groups that are more concise in order to provide more concise and essential information. Commonly used cost classifications are costs in relation to products, production volumes, departments and cost centers, accounting periods, and decision-making.

Mulyadi (2015: 108) Costs can be classified as follows:

- 1) Object of expenditure

This classification is the most straightforward classification, which is based on a brief description of the object of expenditure; for example, telephone-related expenses are called "telephone expenses."

- 2) Main function in the business

Costs can be classified into three groups: production costs, marketing costs, and administrative and general costs.

- 3) Cost relationship with something that is being financed
There are two groups, namely direct costs and indirect costs. *Direct costs (direct costs)* are costs that occur where the only cause is because there is something that must be funded. In relation to the product, direct costs consist of raw material costs and direct labor costs. Indirect costs (*indirect costs*) are costs that occur not only because of something that is financed but also in relation to the product. Indirect costs are known as factory *overhead costs*.
- 4) Cost behavior in relation to changes in the volume of activity
Costs are divided into four parts: fixed costs, variable costs, semi-variable costs, and semi-fixed costs.
- 5) The period of benefit
Costs are divided into two parts, namely capital *expenditure* and revenue *expenditure*.

Cost classification according to (Sujarweni, 2015: 10) as follows:

1. Manufacturing Costs
 - a) Raw material costs are costs incurred to purchase the main raw materials used to produce goods.
 - b) Direct labor is the cost incurred to pay direct labor related to the products produced from raw materials to finished goods.
 - c) Factory overhead costs are costs incurred to produce goods other than raw material costs and direct labor costs, these costs consist of indirect costs and indirect labor. Indirect costs are costs incurred to purchase materials needed to complete a product but little use. Indirect labor costs are costs to pay the salaries of workers who affect the manufacture of finished goods.
2. Cost Behavior
Based on their behavior, costs are classified into 4:
 - a) Variable costs are costs whose amount changes, but the change is proportional to changes in production or sales volume.
 - b) Fixed costs are costs that do not change in amount even if the amount produced changes within normal capacity.
 - c) Semi variable cost is a cost whose amount changes according to the change in quantity and has a fixed rate.
 - d) Multilevel costs are costs that are incurred necessarily within the production time span.
3. Cost Objective
Based on its purpose, costs can be divided into 2, namely:
 - a) *Direct costs* are costs whose benefits can be directly identified in the product being made. Direct production costs consist of raw material costs and direct labor costs.
 - b) Indirect costs (*indirect costs*) are costs whose benefits cannot be identified to the product being made. Indirect production costs are overhead costs.

From the above opinions, it can be concluded that cost classification is the process of systematically classifying costs for all existing cost elements into groups such as objects of expenditure, main functions in the business, cost relationships with something that is costed, cost behavior in relation to changes in the volume of activities, and the period of benefits.

2.2. Cost of Quality

With the factors that can affect product quality, the company must incur a number of quality costs if it wants to maintain its production. The definition of the cost of quality itself has been widely stated by experts, including Hansen and Mowen (2000: 7), who define that: “The *cost of quality* is the cost incurred because it may or has produced products that are of low quality.” Amin Widjaja Tunggal (2009:786) defines quality costs as follows: “Quality costs are costs that arise because products cannot or in fact fail to meet design specifications (and are therefore related to quality conformity).” Meanwhile, Fandy Tjiptono and Anastasia Diana (2003: 34) define quality costs as costs that occur or may occur when quality is poor, and quality costs can also be said to be costs associated with the creation, identification, repair, and prevention of damage.

The above definitions imply that quality costs are closely related to two subcategories of two forces pertaining to product quality, namely quality control activities and failed product activities. Quality control costs are costs incurred by the company to carry out product quality control activities, which include prevention costs and assessment costs. Meanwhile, the cost of failed products is the cost that the company must incur due to the occurrence of a failed product, which consists of internal failure costs and external failure costs.

Fandy Tjiptono and Anastasia Diana (2003: 34) state that quality costs can be grouped into four groups, each of which is explained as follows:

1) Prevention costs (prevention cost)

Prevention costs are costs incurred to prevent the production of goods or services that are not in accordance with specifications. Prevention costs include:

- a) Market research costs. Costs incurred in the collection and continuous evaluation of the needs and quality perceptions of customers and users that affect the satisfaction of users of the company's goods or services.
- b) Quality planning costs, for example, the cost of setting the desired quality targets and the cost of planning how to control them so that the quality targets for goods or services that have been set can be achieved.
- c) Cost of designing products and production processes. This cost occurs to translate the needs of customers and users into standards and requirements of *reliable* quality.
- d) Cost of training programs
- e) The cost of working with suppliers to improve the quality of raw materials delivered and the cost of selecting suppliers. Sub-elements of this cost are *supplier review*, *supplier rating review*, purchase order technical data, and product quality planning.
- f) Maintenance costs of equipment and machinery for making production.

2) Appraisal cost

Appraisal costs are costs incurred in detecting which product units do not conform to specifications. In other words, costs incurred due to efforts to ensure raw materials and products meet quality standards. Appraisal costs include:

- a) Purchasing appraisal costs. This cost includes inspection and testing of raw materials and testing of purchased equipment or services to determine whether or not they are acceptable for use.
- b) Operation cost (manufacturing or services). This cost is incurred for inspection, test, or audit activities required to determine and confirm whether or not a product of goods or services is acceptable to continue into each separate step in the company's operating plan from the start of production until the product is delivered to the customer.
- c) External appraisal cost. This cost is generally incurred whenever it is necessary to set up or install the field and inspect the product before the customer accepts it, as well as when it is needed to field test a new product or service.

- d) Review of test and inspection data. This cost is incurred to review inspection results and test data on a regular basis before products are released for shipment, such as to determine whether existing product quality has been met.
 - e) Miscellaneous quality evaluation. This cost covers all quality evaluations (audits) of support areas to ensure their continued ability to provide support to the production process.
- 3) Internal failure cost
- Internal failure costs are costs that occur due to a mismatch and requirements that are detected before the product or service is sent to the outside or into the hands of consumers. Internal failure costs include:
- a) Rework, spoilage, and scrap costs. These costs represent a significant portion of the overall cost of quality. They can generally be costs associated with goods or services that do not meet the quality standards found during the production process.
 - b) The cost of stopping the production process or the cost of repairing production process facilities due to product failure.
 - c) Product or service design failure cost (internal). This cost is generally considered an unplanned cost resulting from inadequate design in the documentation issued for the production process.
 - d) Sales rebate costs for costs for products that do not meet quality standards.
- 4) External failure cost
- External failure cost is the cost incurred because the product fails to meet known requirements after the product is delivered to consumers. External failure costs include:
- a) The cost of handling customer complaints and claims. This cost consists of the total cost of investigating, troubleshooting, and responding to individual customer or user complaints or inquiries, including specific services required.
 - b) Warranty replacement costs (*return goods*). This cost covers the total cost of evaluating and repairing or replacing goods that customers do not accept due to quality-related problems.
 - c) Repair costs and shipping costs of returned products. This cost covers the total cost of claims paid to customers or users after the agreement to cover costs, including repair costs, such as removing defective *hardware* from a system.
 - d) The cost of further claims from customers for receiving a product that does not meet quality standards. Costs paid by the company due to liability claims, including the cost of insurance for goods or services.
 - e) *Penalties*. *Penalty* costs are costs incurred due to the implementation of goods or services that do not meet the conditions applied in contracts with customers or government regulations.
 - f) *Lost sales* are the value of contribution to *profit* lost due to reduced sales caused by quality problems with goods or services.

According to Blocher and Dycmat (2000: 220), the cost of quality is divided into four components, namely:

- 1) Prevention costs, namely costs incurred to prevent the production of products that are not in accordance with predetermined specifications, which aim to reduce the number of products that do not meet predetermined quality specifications so as to reduce failure costs. Examples of preventive costs are the costs of quality training, quality planning, quality maintenance, raw material inspection costs, production equipment maintenance costs, production salaries, and laboratory salaries.

- 2) Assessment costs, which are costs incurred in the process of detecting products that do not conform to established specifications. The primary purpose of this assessment function is to prevent the delivery of products that do not meet the requirements of customers. For example, inspection testing costs, testing equipment maintenance costs, and *quality control* salaries.
- 3) Internal failure costs, which are costs incurred when products that do not meet specifications can be detected before they are shipped to consumers. For example, corrective action costs, rework costs, process costs, inspection costs, and retesting costs.
- 4) External failure costs, which are costs incurred when products that do not conform to specifications are detected after being shipped to consumers. For example, the cost of re-managed raw materials, transportation costs for recalling failed products, and sales lost due to unsatisfactory products.

Based on the description above, quality costs are costs that occur or may occur when quality is poor. Quality costs are also associated with the creation, identification, repair, and prevention of damage.

As for the initial information obtained from the CV. Berkas Media Bersama (2015) the quality costs incurred by the company are as follows:

- 1) Prevention costs, which are costs incurred to prevent the production of service products that are not in accordance with predetermined specifications (quality planning and maintenance).
- 2) Assessment costs, namely costs incurred in detecting products that are not in accordance with established specifications and the main objectives of the function (cost of assessing service products that have been produced).
- 3) Failure costs, namely costs incurred for service products produced that turn out to be problematic (repair costs for customer complaints/complaint *cases*).

2.3. Selling Price

In pricing policy, management must determine the base price of its products, then determine policies regarding marketing costs, distribution of shipping costs, and price-related matters. The definition of price, according to Kotler and Armstrong (2008: 73), is "Price is the amount of money that customers have to pay to get a product." According to Swasta (2008: 147), "Price is the amount of money (plus some goods if possible) needed to get a number of combinations of goods and services." Tjiptono (2006: 59) states that: "At a certain price level, if the benefits perceived by consumers increase, the value will also increase." This is because in determining the value of a product or service, consumers often compare the ability of the goods or services to meet their needs and desires with the ability of substitute goods or services.

Price is one of the crucial attributes that consumers evaluate, so company managers need to really understand this role in influencing consumer attitudes. This is in accordance with the opinion of Mowen and Minor (2002: 115), which states that price is a diverse concept that has different meanings for each consumer, depending on the consumer, situation, and product characteristics. In other words, at a certain price level that has been spent, consumers can feel the benefits of the product they have bought. Consumers will feel satisfied if the benefits they get are comparable or even higher than the nominal money they spend.

There are many things related to price that underlie why consumers choose a product to own. Consumers choose products for various reasons, including because they really want to feel the value and benefits of the product because they see the opportunity to have the product they need at a lower price than usual so that it is more economical, because there is an opportunity to get a gift from purchasing the product, or because they want to be

considered by other consumers that they know a lot about the product and want to be considered loyal.

Tjiptono (2006:62) states that prices have two prominent roles in the decision-making process of buyers, namely the allocation role and the information role." The price allocation role is the function of price in helping buyers decide how to obtain the highest expected benefit or utility based on their purchasing power. Thus, prices can help potential buyers decide how to allocate their purchasing power to various types of goods and services. Buyers compare the prices of different available alternatives and then decide on the desired allocation of funds.

The role of price information is the function of price in 'educating' consumers about product factors, such as quality. This will be very useful in situations where potential buyers need help objectively assessing product factors or benefits. Tjiptono (2006: 64) also states that the perception that often prevails is that high prices reflect high quality." Therefore, special adjustments to prices can be made with value-based pricing, namely prices that offer the right combination of good quality and service at a reasonable price.

Value-based pricing means redesigning the company's existing brand to offer other products that are of higher quality and have brand value in the eyes of consumers at a certain price level or offering the same quality product at a lower price. Thus, based on this phenomenon, consumers will get more value by bringing quality products at economical prices accompanied by significant benefits.

Based on the discussion above, the price must be determined rationally and commensurate with the benefits provided by the product in order to influence the increase in sales volume of a type of product or service. According to Saladin (2002: 146), there are several methods or techniques for setting selling prices, namely:

- a. *Mark-up Pricing*
Pricing according to this method is based on the overall costs that the company has incurred with a specific *mark-up* as profit.
- b. *Target Return Pricing*
The company sets the selling price based on the desired percentage of the investment invested in a number of product units that are expected to be sold.
- c. *Pricing According to Consumer Views (Perceived Value Pricing)*
Setting the selling price of a product based on the value perceived by consumers of the product.
- d. *Pricing Based on Market Price (Going Rate Pricing)*
Setting the selling price based on the price set by market competitors.
- e. *Sealed Bid Pricing*
This pricing is usually done in a *tender*, where several companies are invited by one agency or the private sector to submit offers in a sealed envelope.

The specific tariff to be set will depend on the type of customer for whom the service market is intended. In brief, in the principles of pricing, as stated by Kotler in Zeithaml and Bitner (2001: 436), companies must consider a number of factors in setting prices, including the selection of pricing objectives, determining the level of demand, estimating costs, analyzing prices set and products offered by competitors, selecting pricing methods, and determining the final price. Companies do not always have to seek maximum profit through maximum pricing, but can be achieved by maximizing current revenue, market share, or other possibilities.

Price is the second most crucial variable after a product because price is the only component of the marketing mix that generates revenue for the company and determines sales volume. In contrast, the other three components are cost drivers. Therefore, the price set determines the level of income and sales results of a company's business.

According to Tjiptono (2006: 193-194), there are three categories of specific service pricing objectives, namely:

- a. Revenue-Oriented Objectives
Private sector companies are usually profit-seeking companies. Within certain constraints, companies of this kind try to maximize the surplus of revenue over expenses.
- b. Capacity-Oriented Objectives
Some organizations seek to align demand and supply to achieve the optimal level of productive capacity utilization at any given time.
- c. Customer-Oriented Objectives
Not all service organizations face the problem of short-term capacity constraints. Many new services need help attracting customers. Price discounts accompanied by promotional activities (such as direct gifts and lucky draws) are commonly used to stimulate *product trials*.

According to Kotler and Keller (2009: 63), states that the price dimension consists of:

- a) Price List is information about the price of the product offered so that consumers consider buying. Offered so that consumers consider buying. The price list is also appropriate at the time of payment.
- b) Discount (Rebate / Discount) is the level of discount/discount given by the seller to consumers. Discounts are given to all customers in accordance with applicable regulations.
- c) *Allowance* (Special discount), which is the discount given by the seller to consumers during events. By sellers to consumers during certain events.
- d) *Payment Period* (Payment period) is the ease of payment provided by the seller to his consumers in the purchase transaction. Ease can be a type of payment transaction other than cash payments.

3. Research Methods

This research is a qualitative study using an ethnomethodology approach; this research uses an ethnomethodology approach because the ethnomethodology approach is a research method that observes the behavior of individuals in taking actions that they are aware of, how to take their actions, or how they learn to take these actions. Within the framework of qualitative research, ethnomethodology is positioned as a theoretical foundation (Moleong, 2004). Ethnomethodology seeks to understand how a person or group of people perceive, then explain and describe the reality of everyday life by observing every social interaction (Sa'idah, S.L, 2019).

This research was conducted in the home industry of typical Palolo brown sugar artisans in Palolo District, Sigi Biromaru Regency, Central Sulawesi. The types of data used are quantitative and qualitative data. The source of data in this study comes from direct interviews with brown sugar artisans, sellers or agents, and consumers of the production of typical Palolo brown sugar artisans home industry, namely Mr. Rusdi, Mr. Wak Caddi, Mrs. Caddi, and Mrs. Tampang. Secondary data from this study is in the form of data in the form of documents, reports, or other documentation that correlates with the quality costs of the production process and the level of consumption of brown sugar from the production of the typical Palolo brown sugar artisan home industry.

Researchers collected data through observations (surveys), in-depth interviews, active engagement with informants, and formal confirmation with parties involved in the brown sugar production industry in Palolo village. After that, the data were analyzed using the interaction of Miles and Huberman (1992), who stated that qualitative research begins with data collection

and then continues with data reduction, data presentation, and conclusion drawing or verification.

This type of qualitative study is to explain a phenomenon in the deepest possible way by collecting the most profound possible data, which shows the importance of the depth and detail of the data under study. Therefore, the qualitative analysis in this research requires direct observation and participation in order to obtain social facts from the specific phenomenon of quality cost treatment in determining the cost of production of typical Palolo brown sugar.

4. Results and Discussions

Through in-depth observations and interviews, the researcher found a variety of information on how quality costs are treated in determining the COGS of typical Palolo brown sugar. During the interview and observation process, the researcher found various things, such as the uniqueness and mindset of the brown sugar, when artisans viewed the production costs charged to the COGS. The interview results were poured into manuscripts to be analyzed by referring to Miles and Huberman (1992). After data reduction, the researcher found the following themes:

Table 4.1 Theme Analysis

Term	Theme Analysis
Palolo brown sugar	Made from sap, popular
Shape of brown sugar	Round tends to be large compared to brown sugar from other regions
Equipment	Rope, bamboo sticks, jergen, pot, pot lid, sap water filter, firewood
Raw materials	Nira water, lime
Supporting materials	Honey from nira water, lime, jackfruit tree trunk
Working method	The quality of the juice is strictly maintained, the cooking time of the juice, the setting of the fire during the cooking process, the molding of the juice.
Unit price determination	Collector's power
Workforce	Handmade by craftsmen

Source: Interview and observation results.

After analyzing the themes, the next step is to explore the sub-themes. At this stage of sub-theme analysis, the researcher determines the focus by making categories and conclusions from the 8 themes found. The sub-theme analysis was carried out more specifically to better describe the cost of quality in the practice of determining the COGS of typical Palolo brown sugar. Table 4.2 is the result of the sub-theme analysis of this research.

Tabel 4.2. Sub-theme Analysis

Category	Theme Analysis	Cost group	conclusion
Quality costing practices in the determination of brown sugar COGS	Nira water	Raw Material Cost	HPP-BBB
	Firewood Honey from sap water	Cost of auxiliary materials	HPP-BBP
	Rope Bamboo rod Jergen Pot Pot lid Sap water filter	Equipment Depreciation Expense	Period Cost
	Chalk Bamboo sticks	Cost of auxiliary materials	HPP-BOP
	Workforce	Labor Cost	HPP-BTKL
	The quality of the nira water is strictly maintained, Cooking time of the juice Flame setting during the cooking process, molding	The process of making brown sugar	

Source: Data processed (2022)

After analyzing the sub-themes, the next step is to analyze the cost of quality in determining the HPP of typical Palolo brown sugar. The last stage is drawing conclusions. This process serves to describe and explain the grouping that has been done at the sub-theme analysis stage. Overall, this process will conclude the cost of quality in determining the COGS of brown sugar based on the habits of brown sugar craftsmen in Palolo.

Based on the sub-theme analysis, four groupings were found in determining the COGS of brown sugar, namely: Raw Material Costs, Support Costs, Factory Overhead Costs, and Quality Costs-Prevention Costs. The four groupings as forming the brown sugar COGS are explained in detail as follows:

1. Raw material cost

The raw material for palm sugar, especially in Palolo village, comes from the tapping of sap from palm trees by the palm sugar craftsmen themselves. The craftsmen do the tapping every morning and evening. The method is that in the morning the craftsmen will install the jergen and leave the jergen to be taken in the afternoon. In the afternoon when the craftsmen take the results of tapping sap water the craftsmen will reinstall the jergen to be taken the next day. This method is repeated every day. The yield of nira water is different every day depending on the amount of nira contained in the palm tree. In the craftsmen that the researchers met

both Mr. A, Mr. B, and Mr. C every one time the results of the tapping craftsmen on average obtained between 20 to 40 liters of nira water from three palm trees.

An important note that researchers encountered was that craftsmen put jackfruit wood on the bamboo used as a flow of nira water into the jergen. The use of jackfruit wood aims to maintain the level of sweetness of nira. After the nira water is harvested and transferred into the jergen, the craftsmen will mix the nira water with lime. This aims to prevent the nira from becoming sour. Acidic nira will affect the quality of brown sugar produced. Acidic nira can also cause the failure of brown sugar production. The provision of lime must also be considered not to be too much because the provision of excessive lime will affect the color and taste of brown sugar. To prevent the failure of brown sugar production, the nira that has been harvested must be cooked immediately and not allowed to stand, because the nira that is allowed to stand will turn into tuak, which is a type of alcoholic beverage.

The manufacture of brown sugar principally consists of the processes of filtering, cooking, stirring and molding. The nira to be cooked is filtered first to separate impurities from the nira water, then the nira is cooked using firewood with a stable fire myala. In the cooking process, the craftsman will stir the nira once in a while so that the nira cooks evenly. The cooked nira will be left for one day and one night to get nira honey. Honey nira will be mixed with nira after collecting nira for four days. So the craftsmen will print brown sugar once every four days.

Based on the results of interviews with informants, basically the raw material for brown sugar is nira water. The addition of lime is considered a supporting material to maintain the quality of the brown sugar produced. There are no other ingredients besides nira in brown sugar production. So it is not excessive if the craftsmen will greatly maintain the quality of nira to produce good quality brown sugar. According to the craftsmen, the quality of brown sugar can be seen from the color, aroma, taste, and texture of the brown sugar itself. Brown sugar with a brownish orange color with a smooth texture indicates brown sugar with unquestionable quality. Palolo brown sugar is known by the people of Palu city because of its quality.

2. Cost of auxiliary materials

Auxiliary materials are materials that are not a major part of the finished product or materials that, although part of the finished product, are relatively small in value when compared to the cost of the production product. In addition to nira water as the raw material of brown sugar, in the production process brown sugar also requires supporting materials to maintain the quality of brown sugar. Jackfruit wood and lime are used by craftsmen to maintain the quality of nira before it is processed into brown sugar.

Jackfruit wood is used by craftsmen during the process of tapping sap water. Jackfruit wood is cut into small pieces and then attached to bamboo to maintain the quality of nira water. Lime will be mixed with the nira just before the cooking process. The use of namgka wood and lime aims to make the nira clean and sweet. Sweet nira will produce good quality brown sugar.

Accounting treatment of the use of auxiliary materials is as an accumulation of COGS. According to the craftsmen, the price of lime purchased in the traditional market is still quite cheap, ranging from Rp. 9,000; to Rp. 10,000; per kg and is used for several productions. Meanwhile, jackfruit wood is cut into small pieces and used for one time tapping. Jackfruit wood is obtained from plants grown by the craftsmen themselves. So that in the view of the craftsmen there is no charge for the purchase of jackfruit wood because it is obtained free of charge.

3. Labor Cost

Labor is the physical or mental effort expended by a person to process a product. Labor cost is the price charged for the use of human labor. Brown sugar craftsmen in Palolo do their work without the help of others. All stages of production from tapping nira, cooking nira, to molding are done by the craftsmen themselves. So when researchers asked questions related to the determination of labor costs, craftsmen stated that there was no charging of labor costs. According to the craftsmen they will not attract wages for themselves. Brown sugar craftsmen do not take into account wages in determining COGS. This practice has been carried out for generations. According to craftsmen, if there is help in the process of producing brown sugar, it usually comes from their own family, whether it is a child or wife. If this happens according to craftsmen labor wages are also still not taken into account. According to craftsmen there are no special skills required in producing brown sugar. They only capitalize on experience and inheritance from generation to generation.

The concept of accounting should be labor in the production process although done directly by the owner is still taken into account into the COGS in accordance with the principle of separation of personal property with the business. But the reality in the field craftsmen set HPP in a very simple way that is calculating costs with no separation of BBB, BBP, BTK, and BOP. This should be realized considering the craftsmen have not done the process of bookkeeping (accounting).

4. Factory Overhead Costs

Factory Overhead Costs (BOP) are cost elements other than raw materials, indirect labor costs, and other costs that are not easily identified or charged directly to products. Factory overhead has two characteristics that must be considered in properly charging it to production. These characteristics concern the special relationship between factory overhead and the product itself (Carter and Usry, 2006: 411. In the context of the Palolo palm sugar industry, BOP has not been found to be the activity that triggers the generation of BOP. There is no activity of building rent, insurance, or indirect labor that triggers the generation of BOP.

5. Cost of Quality in the Calculation of Cost of Goods of Production of Palolo Distinctive Brown Sugar

The last stage of this research is how the treatment of quality costs in COGS charging is made based on the results of the previous analysis with the facts that occur in the practice of determining the COGS of Palolo brown sugar. In this case the researcher stands as a midpoint that will provide an explanation of the identification of costs found by researchers in the field and carried out by the brown sugar craftsmen. The data that has been collected by researchers will then be tested using the method of calculating the cost of production. In manufacturing companies, there are three elements of recording and assessing costs, namely raw material costs, labor costs and factory overhead costs. These three costs are the main raw materials / materials in the company.

Quality costs are basically actions related to preventive activities that occur in inner and outer disappointment, which are further reduced by the cost of inner disappointment and the cost of outer disappointment. In general, quality costs are costs associated with preventing, identifying, and repairing low-quality products (failed products). Products can be said to be of quality if the product is in accordance with the standards or specifications that have been set, with the cost of quality can find out the quality control activities that exist so that they can maximize quality and reduce costs which in turn can streamline production costs.

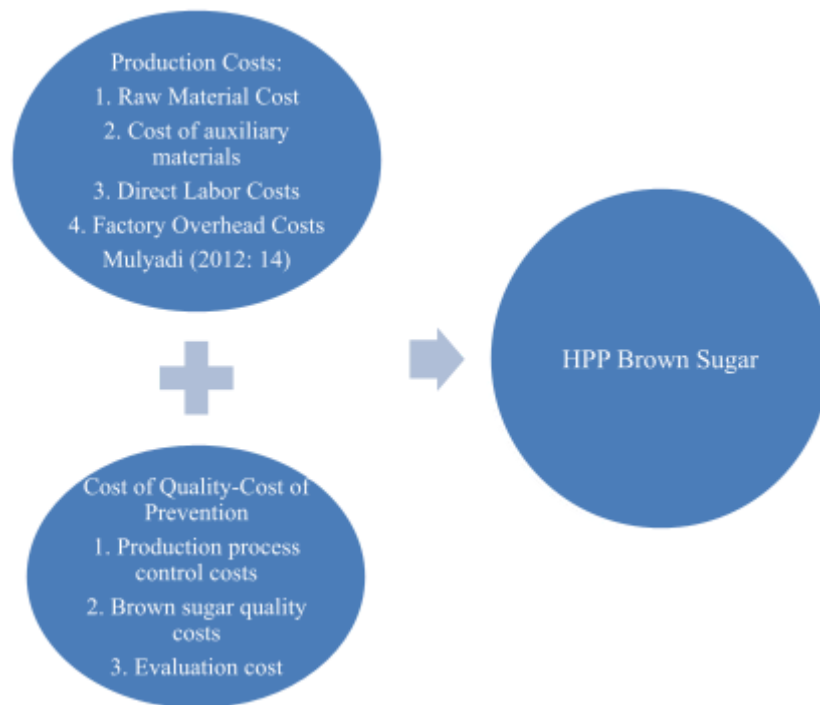
Based on the results of interviews and data analysis, according to researchers' observations in the brown sugar production process, of the four categories of quality costs, brown sugar craftsmen only carry out preventive cost activities which include brown sugar quality planning activities, controlling the production process, and evaluating the quality of brown sugar. While the other three categories have not been done by craftsmen.

Table 4.3 Cost of Quality in Palolo Typical Brown Sugar Craftsmen

No	Cost of prevention
1.	Control of the brown sugar production process. The efforts of brown sugar craftsmen in organizing the production process starting from tapping sap to the process of cooking sap to run well.
2.	Planning for brown sugar quality. Planning for the overall quality of palm sugar includes the use of jackfruit wood in the nira tapping process, mixing lime into the nira, measuring the cooking time of the nira water, and methods for producing good quality palm sugar.
3	Evaluation of brown sugar quality. Brown sugar that is ready to be sold to suppliers is evaluated by the craftsmen whether the brown sugar is suitable for sale according to the quality of the brown sugar.

Source: Data processed (2024)

The prevention costs in table 4.2 above consist of the activities of controlling the brown sugar production process, planning the quality of brown sugar, and evaluating the quality of brown sugar products. In accounting science, each activity will trigger the cost of the activity. An illustration of the calculation of COGS for brown sugar production can be seen in the following figure.

**Gambar 4.1. Ilustrasi biaya kualitas dalam perhitungan HPP gula merah**

Production costs consisting of BBB are costs incurred for the acquisition of nira, BTKL are wages that should be charged to laborers who carry out the production process. Supporting material costs are costs consisting of the cost of brown sugar packaging, the purchase price of lime, nagkan wood, and firewood. Meanwhile, BOP are costs other than BBB and BTKL such as electricity costs, equipment depreciation costs and other costs. The quality costs include prevention costs, which are costs that should be charged to control the production process, product quality costs, and product evaluation costs.

The calculation of COGS for typical palolo brown sugar is in fact difficult to identify in rupiah. This is due to the craftsmen's view that they do not spend any money to obtain raw materials, auxiliary materials, BOP, and do not need to pay labor wages because the entire production process is done by the craftsmen themselves. When this was asked by researchers they considered that raw materials were obtained for free, firewood was obtained by searching in the forest, there were no electricity costs, and labor wages did not need to be paid. When researchers asked how craftsmen could find out the profit earned from the sale of brown sugar, they calculated the profit in a very traditional way. When they get the proceeds from the sale of brown sugar, they assume that is the profit they get. However, the researchers tried to identify the costs that should be calculated into the HPP of brown sugar as follows.

Table 4.4 Costs that Should be Accounted for in the COGS of Brown Sugar

No	Cost Category	Activity Cost driver	Cost Type
1.	Raw material cost	Use of sap water	Biaya Bahan Baku
2.	Labor Cost	Labor that performs the work of tapping nira, cooking nira, printing brown sugar Direct Labor Costs	Biaya Tenaga Kerja Langsung
3.	Cost of auxiliary materials	Use of lime material Use of jackfruit wood Use of firewood	Cost of auxiliary materials
4.	Quality Cost	Production process control Control of brown sugar quality Product evaluation	Training Cost

Quality costs arise as an effort to prevent the occurrence of low quality, damaged, or failed products (Tjiptono, F and Diana, A, 2000: 36). According to experts, preventive costs are budgeted more than other costs with the assumption that preventive action is better done so that the production process can run effectively and efficiently. Preventive action will also have an impact on reducing other quality costs. According to the researcher's observations, palm sugar craftsmen in Palolo village have taken precautions against the palm sugar production process, this can be seen from their methods of processing nira into palm sugar, for example from the way they tap the nira using bamboo with jackfruit wood attached to make the nira water taste sweeter or cook the nira immediately after harvesting to avoid the sour taste of the nira water.

If a red thread is drawn in accounting science according to Blocher et.,al (2000: 221) states that the best way for a business to avoid product failure is to invest in preventive costs to produce quality products. With the production of quality products, it will minimize costs associated with product failures both internal and external.

Brown sugar craftsmen in Palolo need to take into account the cost of quality in producing brown sugar. When preventive measures are taken, the opportunity to produce quality brown sugar is wide open, but if preventive measures are not maximized, the same opportunity for failed products occurs. This will certainly affect the COGS of brown sugar itself. As explained earlier, brown sugar craftsmen in Palolo do not charge several items of production costs because they consider that they do not spend any money on these activities. Supriyono (2001:16) explains that the acquisition price or cost of goods is the amount that can be measured in units of money in the form of cash paid, the value of other assets delivered or sacrificed and the value of services.

Craftsmen's activities such as the acquisition of jackfruit wood, firewood, labor spent on the production process, depreciation of equipment used should be activities that can be measured in units of money. Charging a certain amount of rupiah can be done by looking at the

fair price or market price. For example, craftsmen use one bundle of firewood in one production, so craftsmen can charge firewood costs for one bundle of firewood in the market. If the price of one bundle of firewood is Rp. 5000; then the cost of firewood can be charged at Rp.5000.

The accuracy in charging quality costs in the COGS calculation will certainly affect the selling price of the product. When COGS is charged too low or too high, it will certainly have an impact on the wrong selling price. So it is not excessive if every business needs to pay attention to the production process by maximizing preventive actions to produce good quality products. Thus, in the calculation of COGS, it is also necessary to pay attention to the charging of all activities that can generate costs including quality costs so that there are no errors in the calculation of COGS. As stated by Faridah (2015) which states that quality costs greatly affect the determination of the cost of goods manufactured.

5. Conclusion

Based on the previous explanation, this study can draw the conclusion that there are four groupings in determining the COGS of brown sugar, namely: Raw Material Costs, Support Costs, Factory Overhead Costs, and Quality Costs-Prevention costs. The process of producing brown sugar, from four categories of quality costs, new brown sugar craftsmen carry out preventive cost activities which include brown sugar quality planning activities, controlling the production process, and evaluating the quality of brown sugar. Based on the results of this study, it can be suggested that brown sugar business actors should still take into account the costs in the production process, so that they can determine the exact cost of production. So that the income can be measured and profitable.

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