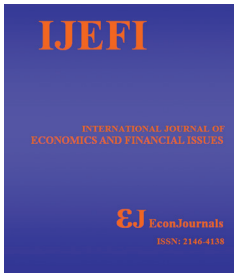

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The Financial Variables of Water Filter Pot Mainly Raw Material Darmasaba Clay in Btikk-Indonesia

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ABSTRACT

The purpose of this study is: to calculate the cost of goods manufactured, determine the selling price, and recognize the value of the inventory of water filter pots made from Darmasaba clay. The results showed that the Pot water filter (DA 28.0-DB 17.5-T 14.0) at BTIKK-BPPT can be made from two different raw material compositions, namely: (a) Darmasaba clay and husk in a ratio of 70%: 30%, hereinafter referred to as water filter pot 70:30; and (b) Darmasaba clay, husks and sawdust in the ratio of 60%: 20%: 20%, hereinafter referred to as water filter pot 60:20:20; (2) The financial variables of water filter pot 70:30 and water filter pot 60:20:20 are focused on three main things, namely the cost of goods manufactured, the selling price, and the ending inventory. The cost of goods manufactured 70:30 water filter pot is Rp. 44,869.50/kg, Rp. 86.09 lower than 60:20:20 water filter pot which is IDR 44,869.50/kg. The selling price of the 70:30 water filter pot is IDR 49,350.00/kg, IDR 100.00 is cheaper than the 60:20:20 water filter pot which is IDR 39,450.00/kg. The estimated value of the ending inventory of 70:30 water filter pot is IDR 25,306,398.12, IDR 48,554.64 lower than the 60:20:20 water filter pot of IDR 25,354,951.16; and (3) The using of Darmasaba clay and husk raw materials in the ratio of 70%: 30% is more appropriate to be used as raw material for water filter pots (DA 28.0-DB 17.5-T 14.0), because it has technical and financial advantages for get porous ceramic standardization.

Keywords: Financial Variables, Water Filter Pots, Darmasaba Clay
JEL Classifications: M41

1. INTRODUCTION

Industrial companies (factories) are companies whose activities are processing raw materials into finished goods and then the finished goods are sold to people in need. Manufacturing companies in Indonesia are the main pillars of industrial development (Rolita, 2014). The increase in manufacturing growth rate is due to a sharp increase in domestic consumption in recent years (Maryam, 2013). Therefore, as a manager, the manager is obliged to give a signal about the condition of the company to the owner (Purwanto, 2012). Processing raw materials into goods in the process and finally into finished products is called the production process.

The production process requires the right technique or production method so that it produces a good output. The right method or technique of production is what is often called technology. Good input, production processes and competent people, tends to produce outputs that meet standards (Gumi et al., 2016. p. 199). The formation of ready-to-use raw materials is one of the stages (parts) of the production process of ceramic objects after the designing stage (Gumi and Normal, 2015). The service of ready-to-use raw materials has been carried out for a long time by creating compositions that meet laboratory test requirements as stoneware required by ASTM or SNI. Many compositions have been produced, one of which is the BL-1 composition which is the flagship of the material field and has been applied to ceramic SMEs in Bali.

Another ready-made material produced by BTIKK is the earthenware body mass (earthenware) whose raw material is

from local Bali, in the form of Darmasaba-Husk Body Mass (MB Darkam). The economic value of the pottery body mass produced by BTIKK is not yet as high as other ceramic products. MB Darkam's ready-to-use material is currently only selling around IDR 4,200/kg. To provide economic value (economic value added) and to make functional objects from the body mass of earthenware vessels, BTIKK conducts continued production of the body mass of earthenware vessels to become higher-value ceramic products in the form of ceramic media water filter pots.

Ceramic Creative Industry Technology Center (BTIKK) as one of the non-ministerial government agencies whose main task is in the field of research and development, study and engineering and service of ceramic and porcelain technology services, in 2019 has conducted research on ready-to-shape materials in the form of porous ceramics made from Darmasaba clay and chaff. This material is prepared as an alternative to the development of ceramic raw material services ready to form for ceramic SMEs in Bali and the main material for making water filter pots. Raw materials used in the manufacture of porous ceramics made from Darmasaba clay and husks in several compositions, namely: clay Darmasaba: husk = 60%: 40%; clay Darmasaba: husk = 65%: 35%; clay Darmasaba: husk = 70%: 30%; clay Darmasaba: husk = 75%: 25%, and clay Darmasaba: husk: wood dust = 60%: 20%: 20%.

This study aims to: (1) Calculate the cost of goods manufactured; (2) Determine the selling price, and (3) Recognize the ending inventory of water filter pots. This research is useful for: (1) BTIKK, as one of the components that can be used to add types of technology services in the form of water filter pots; (2) The Government, as an alternative service that can increase state revenue (PNBP) in the form of water filter pots made from Darmasaba clay; (3) ceramic SMEs, as one of the guidelines and inputs in the production process of their business, independent of raw materials outside Bali; and (4) Researchers, academics, engineers, engineering and other functional technicians, as an initial reference in developing research into creative products such as water filter pots in the future.

2. THEORETICAL REVIEW

The cost of production according to Mulyadi (2013) is a sacrifice of economic resources measured in units of money, which has occurred to obtain a product. Product is an output of a production process. Costs incurred in a production process generally occur from material costs plus Conversion Costs, so that the cost of products includes the same cost elements. The cost of the product is a sacrifice from an economic source measured in units of money, which has occurred to obtain income so that information about the cost of the product can be used as a basis for determining the selling price of the product as well as a basis for determining policies relating to company management. The cost of goods manufactured is reasonable and not much different from competitors for products of the same quality that will determine the marketing program carried out by an organization. An organization is expected to create a lower cost of production than others so as to facilitate the marketing process.

Materials are goods that will be processed or processed into finished products (Supriyono, 2014). Raw materials are materials that will be processed into parts of finished products and their use can be identified or followed in their footsteps or an integral part of certain products. Raw material costs are costs incurred to purchase raw materials that have been used to produce a certain finished product (Rudianto, 2013). Processed goods inventories are raw materials that have been processed to be converted into finished goods, but up to the balance sheet date the production process has not yet been completed (Rudianto, 2013). There are three main elements in the cost of a product, namely: direct raw materials, direct labor, and factory overhead costs (variable and fixed). The production function is a function associated with processing raw materials into finished products that are ready for sale (Supriyono, 2014). The cost of production plus inventory of goods in the initial process minus the inventory of goods in the final process is called the cost of production.

There are many ways to determine prices and handle selling price issues. In small companies, prices are often set by core management, not by marketing or sales. Meanwhile in large companies, price fixing is usually handled by division managers or product line managers (Ahmad, 2013). In the 20th century, tariffs were regulated by the Tariff Commission based on the terms of reference obtained from the local government and the study of the structure of the industry (https://id.wikipedia.org/w/index.php?Title = tariff and oldid = 7100190). Definition of tariff is often interpreted as a list of prices (rent, fees and so on) so that from this understanding it can be concluded that the tariff is the same as the price (www: maribersama-jk.com/index. Php? Target = about.us).

Cost-plus pricing is an approach to pricing based on cost behavior, because cost-plus pricing determinations are the first step, in this case can reduce uncertainty and can also provide information from several other things, for example if the company is faced with orders (orders) in below a predetermined target price, by linking costs and the pluses used decisions can be more easily taken. Cost-plus is a certain cost plus a specified markup. Cost referred to here is the cost of management and cost accounting. The cost and profit reporting method is broadly divided in two ways, namely: absorption (full) cost and variable costing (direct costing/contribution approach).

Earthenware comes from English Earthenware or pottery is the raw material used for the body of ceramics and is suitable for combustion with low temperatures, which is around 1,000°C-1,200°C. Low temperatures are used to prevent the ceramic body from becoming warped or melting. Its characteristics: low body density, high water absorption of about 10%. Porous ceramics are ceramics that have pores with a certain size distribution and relatively high porosity, broadly thermal insulation porous ceramics and as building materials. Materials commonly used as porous ceramic raw material are clay and oxide compounds such as alumina (Al_2O_3), silica (SiO_2), titania (TiO_2), and zirconia (ZrO_2) (file:///F:/1.New/18.WP%202.2,%20Ceramic%20Porous/2.Kerpor%202.pdf, downloaded on March 27, 2019). Zeolites are natural rocks or minerals that are chemically classified as silica minerals and are classified as hydrated delicate silica alumina and are the result

of secondary products that are stable under surface conditions because they originate from the processes of sedimentation, weathering and hydrothermal activation.

Besides clay and zeolite which are used to make porous ceramics, coconut shell is used as an additive. Coconut shell as an alternative raw material is indicated by the large amount found in the area of North Sumatra. Coconut shell contains silicate 21-26%, lignin 35-45%, and cellulose 23-43%, besides these components there are other components including: CaO, MgO, Al_2O_3, and NaO. Coconut shell is the best material that can be made into activated carbon because activated carbon made from coconut shell has a lot of micropores, low ash content, high water solubility and high reactivity, so that the composition of the coconut shell can be used as one of the raw material for making porous ceramics (Pambayun et al., 2013 in file:///F:/1.New/18.WP%202.2,%20Keramik%20 Berpori/2.Kerpor%202.pdf (downloaded on March 27, 2019).

In general the use of porous ceramics with pore sizes around 10-800 μm as filters, while ceramics with pore sizes up to 0.1 nm as membranes use materials with high alumina content because 2 alumina has advantages in strength, hardness and resistance to pressure, heat, and chemicals. The preparation of making porous ceramics that is often done is by slip casting, dry pressing and extrusion forming. Most industries use the extrusion method in the manufacturing of their products, while the slip casting and dry pressing methods are mostly done at the laboratory scale only.

Every company at this time is very concerned about the results of the company's financial statements, because with good financial statements and can generate maximum profits that will be able to attract investors to invest to the company (Agustina, 2014. p. 1173). Financial ratios are guidelines that guide the management of a company to set various targets and standards. Financial ratios greatly assist financial managers in determining profitable long-term strategies and in making effective short-term decisions (Wiagustini, 2014. p. 84). Profitablitas or ability to make a profit is a measure in percentage used to assess the extent to which a company is able to generate profits at an acceptable level. Profitability value is the norm for company health (http://id.Wikipedia.org/w/index.php?Title=Profitabilit y&oldid=4882630"). Profitability is the company's ability to make a profit in relation to sales, total assets or own capital (Astiti, 2015) Profitability ratios are often referred to as business profitability (Kasmir, 2014. p. 234).This ratio is used to measure the level of business efficiency and profitability achieved by the bank concerned. Profitability factors are studied as indicators of cooperative efficiency (Yasa, 2014. p. 32).

Company profits will be a reference in dividend payments (Kherismawati et al., 2016. p. 134). The level of profit will affect the level of dividend payments distributed to shareholders (Idawati, dk, 2014). Several measures of profitability are gross profit margin, operating profit margin and net profit margin. Profitability can also be calculated with the concept of Return on Assets (ROA), which is the ratio of net income after tax to assets to measure the rate of return on total investment. Research conducted by Mahanavami (2013. p. 27) results that the net interest margin (NIM) variable has a positive and significant effect on return on assets (ROA), while the operating cost per operating income (BOPO) variable has a negative effect and is significant on return on assets (ROA). Company profits will be a reference in dividend payments (Kherismawati et al., 2016. p. 134). The level of profit will affect the level of dividend payments distributed to shareholders (Idawati and Sudiartha, 2014). Several measures of profitability are gross profit margin, operating profit margin and net profit margin. Profitability can also be calculated with the concept of return on assets (ROA), which is the ratio of net income after tax to assets to measure the rate of total investment return (Indrayani, 2013. p. 97). Research conducted by Mahanavami (2013. p. 27) results that the net interest margin (NIM) variable has a positive and significant effect on ROA, while the operating cost per operating income (BOPO) variable has a negative effect and is significant on ROA.

3. RESEARCH METHODOLOGY

Types of data consist of: (1) Qualitative data, namely data in the form of words, sentences, schematics, and images. In this study, the qualitative data used are: the history of the establishment of BTIKK, fixed assets, organizational structure, main functions of BTIKK, job descriptions, manufacturing processes, and types of raw materials for making water filter pots; and (2) quantitative data, i.e. data in the form of numbers, or qualitative data that is leveraged (scoring: excellent = 4, good = 3, bad = 2, and bad = 1). In this study, quantitative data used are: depreciation costs of fixed assets in the production process, material quantities, material prices, electricity costs, telephone costs, water costs, labor costs during the production process, material composition, machine hours, direct labor hours, Denpasar City Minimum Wage, operating expenses and other expenses in producing water filter pots.

Data sources consist of: (1) Primary data, i.e. data obtained or collected by a researcher or a particular institution directly from the source, recorded and observed for the first time and the results are used directly by researchers or by the institution itself to solve problems that will be the answer is sought. Primary data used in this study are: fixed assets, depreciation costs, electricity costs, telephone costs, water costs, machine hours, direct labor hours, raw material composition, use of raw materials, maintenance costs, and the number of workers directly involved in making water filter pots; and (2) secondary data, i.e. data obtained by researchers is not from the results of the collection and processing themselves but is carried out by other people or by certain institutions. So the data used by researchers in an effort to find answers to research problems is data published by other people or certain institutions and not by the researchers themselves. Secondary data in this study are: Denpasar city minimum wage from the Department of Manpower and Transmigration, type of raw material for making stoneware from the Bandung Ceramic Industry Center, water permeation standards that qualify as stoneware from the American Standard Testing Material (ASTM).

Data collection is done through: (1) Observation, which is a way of collecting data carried out by researchers by directly observing the object or replacing its object (for example: film, video, reconstruction, etc.). Observations in this study were carried out

by observing the process of forming a water filter pot; and (2) interviews, i.e. data collection techniques by oral means between the interviewer (interviewer) and the interviewee or respondent (interviewee). In this technique face to face interaction between the interviewer and the respondent. Interviews in this study were carried out to the material processing department, treasurer of technical services, technical service managers, engineers, engineering technicians, and techno-economic functional groups.

Data analysis techniques used are: (1) A standard cost system with the full costing method (full costing), proposed by Mulyadi (2013). p. 50) used to calculate the cost of production, with the formula: Cost of production = Cost of raw materials + Costs direct labor + variable factory overhead costs + fixed factory overhead costs; (2) the selling price is calculated using the cost-plus pricing method, with the formula: Selling price = A certain cost plus a specified markup. The costs referred to here are direct raw material costs, direct labor costs, indirect factory costs (fixed and variable); and (3) identification method based on cost of goods sold is used to calculate the value of ending inventory, the formula of which is: initial inventory + amount of production - total sold = Unit of ending inventory, then the value of ending inventory = unit of ending inventory x cost of production.

4. RESULTS AND DISCUSSION

4.1. Research Result

4.1.1. Financial variables water filter pot made from raw clay Darmasaba and husk

4.1.1.1. Cost of goods manufactured

The activities carried out in the calculation of the cost of production of the Pot Water Filter (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay and husk with a ratio of 70%: 30% are: (a) collecting data, tabulating data, and calculating tabulations raw material cost data, (b) collecting data, tabulating data, and calculating direct labor cost data tabulations, (c) collecting data, tabulating data, and calculating variable factory overhead data tabulations, (d) collecting data, tabulating data, and calculating tabulations fixed factory overhead data, (e) collecting data, tabulating data, and calculating the cost of production data tabulation, (f) collecting data, tabulating data, and calculating selling price data tabulations, and (g) collecting data, tabulating data, and calculating data tabulations Inventory value of water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay and husk at a ratio of 70%: 30%.

The cost of raw material for water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay and husk with a ratio of 70%: 30% is IDR 9,100.72/unit. That amount consists of: standard use of raw materials 4.50 kg/unit and the standard price of raw materials is IDR 4,244.60/kg. The calculations are shown in Appendix 1.

Direct labor costs of water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay and husks at a ratio of 70%: 30% are IDR 11,652.90/unit, consisting of: formation power IDR 7,978.13, refining power IDR 1,595.63, drying power IDR 1,595.63, and biscuit combustion power IDR 483.52. The formation was carried out by 2 people within 0.25 h at a rate of IDR 15,956.25/h. Refinement is done by 1 person within 0.10 h at a rate of IDR 15,956.25/h. Drying is carried out by 1 person within 0.25 h at a rate of IDR 15,956.25/h. The arson was carried out by 2 people within 0.50 h at a rate of IDR 15,956.25/h. The calculation is shown in Appendix 2.

Variable manufactured overhead cost of water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay and husk with a ratio of 70%: 30% is IDR 6,772.00 per unit, which consists of: indirect wages IDR 789.11, supporting material costs IDR 5,601.83, and electricity costs IDR 381.06. Indirect wages consist of: designing and developing staff IDR 63.83, storage staff IDR 483.52, and supervisory staff IDR 241.76. The cost of supporting materials consists of: IDR 5,00 pencil use, IDR 10,000 paper usage, IDR 4,00 eraser usage, IDR 5,00 ruler usage, IDR 100.00 plywood use, IDR 8,38 water use, IDR 8,38 using water sponge IDR 25.00, and the use of LPG IDR 5.44.46. Electricity costs consist of: the use of a press machine for 025 h at a rate of IDR 1,524.24/h. The calculation is shown in Appendix 3.

Fixed manufactured overhead cost of water filter pot (DA 28.0-DB 17.5-T 14,0) made from Darmasaba clay and husk with a ratio of 70%: 30% is IDR 7,343.88 per unit, consisting of: depreciation cost the factory remains IDR 1,944.72, the factory electricity costs IDR 64.58, and the maintenance costs of the factory fixed assets are IDR 5,334.59. Depreciation costs consist of depreciation of plant fixed assets which consist of: depreciation of fine tables, fine chairs, press machines, furnaces, regulators, thermocouples, burners, burn plates, long racks, short racks, production buildings, machineries, and storage buildings. Electricity costs consist of the use of electricity subscriptions for the use of press machines in accordance with the comparison of electric power. The cost of maintaining the plant's fixed assets consists of: the use of plant's fixed assets to produce ceramic filter pots to maintain the fixed assets to function as they should, which is set at 5% of the acquisition price. The calculation is shown in Appendix 4.

The cost of good manufactured water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay and husk with a ratio of 70%: 30% is IDR 44,869.50 per unit (Table 1), which consists of: raw material costs IDR 19,100.72, direct labor costs IDR 11,652.90, variable factory overhead costs IDR 6,772.00, and fixed factory overhead costs IDR 7,343.88. The cost of production is calculated using the costing method based on full cost (full costing) which takes into account all costs both fixed and variable costs into the calculation of cost of goods. The cost of production is the costs incurred in producing body mass (raw material costs + direct labor costs + variable factory overhead costs + fixed factory overhead costs) plus inventory of goods in the initial process minus inventory in the final process. In this study it is assumed that there is no inventory of goods in the initial and final processes, so that the cost of production is equal to the cost of production. The calculation is shown in Appendix 5.

4.1.1.2. Selling price

The selling price of water filter pot (DA 28.0-DB 17.5-T 14.0) at BTIKK in 2019 was determined using the cost-plus pricing method. The use of the cost-plus pricing method resulted in a

selling price of IDR 49,356.45 (rounded to IDR 49,350.00) per fruit (Table 2). The selling price consists of: cost of production of IDR 44,869.50, expected operating profit margin of IDR 897.39, marketing expenses of IDR 2,243.48, and general and administrative expenses of IDR 1,346.09.

4.1.1.3. Inventory value

Final inventory valuation uses a special identification method based on cost of goods. The formula is: Initial Inventory + Purchasing Unit or Production Unit = Sold Unit + End Inventory. End Inventory = Initial Inventory + Purchasing Unit or Production Unit − Sold Unit. Assuming there is no inventory in the beginning and end of the process, the cost of production = cost of goods sold. Production capacity of a month water filter pots = 160 h: 1.70 h = 94 pieces. The yearly production capacity is 1,128 units. Based on the estimate, that for beginners 50% of the product was sold, the final inventory value is estimated at 50% x 1,128 x IDR 44,869.50 = IDR 25,306,398.12 (Table 3).

4.1.2. Financial variables water filter pot made from raw clay Darmasaba, husk, and sawdust

Activities carried out in the calculation of financial variables Pot Water Filter (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk, and sawdust with a ratio of 60%: 20%: 20% are: (a) Collecting data, tabulating data, and calculating raw material cost tabulation data, (b) collecting data, tabulating data, and calculating direct labor cost data tabulation, (c) collecting data, tabulating data, and calculating variable factory overhead data, (d) collecting data, tabulating data, and calculating fixed factory overhead data tabulations, (e) collecting data, tabulating data, and calculating the cost of production cost data, (f) collecting data, tabulating data, and calculating selling price data tabulations, and (g) collecting data, tabulating data, and calculate the data tabulation of the value of the Pot Water Filter inventory (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk, and sawdust with a ratio of 60%: 20%: 20%.

4.1.2.1. Cost of goods sold

The cost of raw material for water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk, and sawdust with a ratio of 60%: 20%: 20% is Rp. 19,186.81 per unit, which consists of from the standard use of raw materials 4.50 kg and the standard price of raw materials IDR 4,263.73. The calculation is shown in Appendix 8. Direct labor cost for water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk, and sawdust with a ratio of 60%: 20%: 20% is IDR 11,652.90 per unit, consisting of: IDR 7,978.13 of formation staff, IDR 1,595.63 of refining power, IDR 1,595.63 of drying power, and IDR 483.52 biscuit burner. The formation was carried out by 2 people within 0.25 h at a rate of IDR 15,956.25/h. Refinement is done by 1 person within 0.10 h at a rate of IDR 15,956.25/h. Drying is carried out by 1 person within 0.25 h at a rate of IDR 15,956.25/h. The arson was carried out by 2 people within 0.50 h at a rate of IDR 15,956.25/h. The calculation is shown in Appendix 9.

Variable manufactured overhead cost water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk, and sawdust with a ratio of 60%: 20%: 20% is IDR 6,772.00 per unit, consisting of: indirect wages of IDR 789.11, costs for supporting materials IDR 5,601.83, and electricity costs IDR 381.06. Indirect wages consist of: designing and developing staff IDR 63.83, storage staff IDR 483.52, and supervisory staff IDR 241.76. The cost of supporting materials consists of: IDR 5,00 pencil use, IDR 10,000 paper usage, IDR 4,00 eraser usage, IDR 5,00 ruler usage, IDR 100.00 plywood use, IDR 8,38 water use, IDR 8,38 using water sponge IDR 25.00, and the use of LPG IDR. 5.44.46. Electricity costs consist of: the use of a press machine for 25 h at a rate of IDR 1,524.24/h. The calculation is shown in Appendix 10.

Fixed manufactured overhead cost water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk, and sawdust with a ratio of 60%: 20%: 20% is IDR 7,343.88 per unit, consisting

Table 1: Cost of goods manufactured water filter pot (DA 28.0-DB 17.5-T 14.0) made raw material from 70%: 30% (in IDR)

Creative Product	Cost element				Cost of good Manufactured
	Raw material cost	Direct labor cost	Variable manufacturing overhead cost	Fixed manufacturing overhead cost	
Water filter pot (DA 28.0-DB 17.5-T 14.0)	19,100.72	11,652.90	6,772.00	7,343.88	44,869.50

Sources: Appendix 1, Appendix 2, Appendix 3, and Appendix 4, 2019

Table 2: Selling price water filter pot (DA 28.0-DB 17.5-T 14.0) made raw material from 70%: 30% (IDR)

Creative Product	Selling price element				Selling Price
	Cost of good manufactured	Expected operating profit margin	Marketing expense	General and Adm. expense	
Pot filter air (DA 28.0-DB 17.5-T 14.0)	44,869.50	897.39	2,243.48	1,346.09	49,356.45

Source: Appendix 6, 2019

Table 3: Ending inventory estimates water filter pot (DA 28.0-DB 17.5-T 14.0) made raw material from 70%: 30% (IDR)

Creative product	Beginning inventory	Production	Product available to sold	Cost of good sold estimated	Ending inventory
Water filter pot (DA 28.0-DB 17.5-T 14.0)	-	50,612,796.00	50.612.796,00	25,306,398.12	25,306,398.12

Source: Appendix 7, 2019

of: depreciation cost of plant fixed assets IDR 1,944.72, factory electricity costs IDR 64.58, and maintenance costs of plant fixed assets IDR 5,334.59. Depreciation costs consist of depreciation of plant fixed assets which consist of: depreciation of fine tables, fine chairs, press machines, furnaces, regulators, thermocouples, burners, burn plates, long racks, short racks, production buildings, machineries, and storage buildings. Electricity costs consist of the use of electricity subscriptions for the use of press machines in accordance with the comparison of electric power. The cost of maintaining the plant's fixed assets consists of: the use of plant's fixed assets to produce ceramic filter pots to maintain the fixed assets to function as they should, which is set at 5% of the acquisition price. The calculation is shown in Appendix 11.

The cost of good manufactured water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk and sawdust with a ratio of 60%: 20%: 20% is Rp. 44,955.59 per unit (Table 4), consisting of: raw material costs IDR 19,186.81, direct labor costs IDR 11,652.90, variable factory overhead costs IDR 6,772.00, and fixed factory overhead costs IDR 7,343.88. The cost of good manufactured is calculated using the costing method based on full cost (full costing) which takes into account all costs both fixed and variable costs into the calculation of cost of goods. The cost of production is the costs incurred in producing body mass (raw material costs + direct labor costs + variable factory overhead costs + fixed factory overhead costs) plus inventory of goods in the initial process minus inventory in the final process. In this study it is assumed that there is no inventory of goods in the initial and final processes, so that the cost of production is equal to the cost of production. The calculation is shown in Appendix 12.

4.1.2.2. Selling price

The selling price of water filter pot (DA 28.0-DB 17.5-T 14.0) made from Darmasaba clay, husk and sawdust with a ratio of 60%: 20%: 20% at BTIKK in 2019 was determined using the cost-plus pricing method. The use of the cost-plus pricing method resulted in a selling price of IDR 49,451.15 (rounded to IDR 49,450.00) per piece (Table 5). The selling price consists of: cost of production of IDR 44,955.59, expected operating profit margin of IDR 899.11, marketing expenses of IDR 2,247.78, and general and administrative expenses of IDR 1,348.67.

4.1.2.3. Inventory *v*alue

Final inventory valuation uses a special identification method based on cost of goods sold. The formula is: Initial inventory + Purchasing unit or production unit = Sold unit + Ending inventory. Ending inventory = Beginning inventory + Purchasing unit or production unit − Sold unit. Assuming there is no inventory in the beginning and end of the process, the cost of production = cost of goods sold. Production capacity of a month water filter pots = 160 h: 1.70 h = 94 pieces. The yearly production capacity is 1,128 units. Based on the estimation, that for beginners 50% of the product was sold, the final inventory value is estimated at 50% × 1,128 × IDR 44,955.59 = IDR 25,354,952.76 (Table 6).

5. DISCUSSION

The water filter pot is a creative ceramic product produced by BTIKK in the 2019 activities. The water filter pot produced by BTIKK has a top diameter (surface) of 28.0 cm - bottom diameter (butt) of 17.5 cm - height of 14.0 cm. This pot was made to realize one of BTIKK's main tasks in the engineering section to help the community use water that was previously not or could not be drunk into potable water because of the touch of ceramic technology by creating ceramic objects in the form of ceramic-based pots that can filter water for drinking.

The usefulness of the water filter pot is largely determined by the composition of the raw materials used. The composition of raw materials plays a role in filtering water seepage out of the filter

Table 4: Cost of good manufactured water filter pot (DA28.0-DB 17.5-T 14.0) made raw material from 60%: 20%: 20% (IDR)

Product	Cost element				Cost of good
Kreatif	Variable manufacturing overhead cost	Fixed manufacturing overhead cost	Variable manufacturing overhead cost	Fixed manufacturing overhead cost	Products
Pot filter air (DA 28.0-DB 17.5-T 14.0)	19,186.81	11,652.90	6,772.00	7,343.88	44,955.59

Sources: Appendix 8, Appendix 9, Appendix 10, and Appendix 11, 2019

Table 5: Selling price water filter pot (DA 28.0-DB 17.5-T 14.0) made raw material from 60%: 20%: 20% (in IDR))

Creative	Selling price element				Selling
Product	Cost of good manufactured	Expected profit margin	Marketing expense	General and Adm. expense	Price
Walter filter pot (DA 28.0-DB 17.5-T 14.0)	44,955.59	899.11	2,247.78	1,348.67	49,451.15

Source: Appendix 12, 2019

Table 6: Estimated ending inventory of water filter pot (DA 28.0-DB 17.5-T 14.0) made from 60%: 20%: 20% (in IDR)

Creative product	Beginning inventory	Production	Available inventory to sold	Estimated cost of good sold	Ending inventory
Water filter pot (DA 28.0-DB 17.5-T 14.0)	-	50.612.796,00	50.612.796,00	25.354.952,76	25.354.952,76

Source: Appendix 13, 2019

Table 7: The comparison of financial variable water filter pot 70:30 and water filter pot 60:20:20

Financial	Ceramic creative product		Difference
Variable	Water filter pot 70%:30%	Water filter pot 60%:20%:20%	More (Less)
Cost of good manufactured	44,869.50	44,955.59	(86.69)
Selling price	49,350.00	49,450.00	(100.00)
Ending inventory	25,306,398.12	25,354,952.76	(48,554.64)

Source: Appendix 5, Appendix 6, Appendix 7, Appendix 12, Appendix 13, and Appendix 14, 2019

pot, thereby reducing impurities and particles that are not suitable for drinking. Raw materials also play a role in forming the filter pot body, because errors in determining the composition result in the pot body collapsing, gaping, not coalescing, and even fail to form the desired pot body. For this reason, several experiments have been carried out by researchers, engineers, engineering engineers and other personnel to form a body pot that is suitable for its function.

The first water filter pot uses raw materials of 70% Darmasaba clay and 30% husk, hereinafter referred to as water filter pots (da 28.0-db 17.5-t 14.0) made from 70:30 raw materials. The second water filter pot uses 60% Darmasaba clay raw material, 20% husk and 20% swdust, hereinafter referred to as water filter pot (da 28.0-db 17.5-t 14.0) made from 60:20: 20. The 70:30 water filter pot is characterized by stronger pot body, lower fragility, smoother surface, slower water seepage rate, higher filter strength, less body gap than the 60:20:20 water filter pot. For that in terms of physical characteristics, a 70:30 water filter pot is more suitable for use as a ceramic water filter pot for drinking.

The study of financial variables in this study is focused on three important parts which are very much needed information, which is related to: cost of goods sold, selling price, and ending inventory. The cost of producing 70:30 water filter pots is IDR 44,869.50 per unit, while 60:20:20 water filter pots are IDR 44,955.59 per unit. The basic cost of producing a 70:30 water filter pot is IDR 86.09 lower than a water filter pot 60:20:20. This difference is caused by differences in the types, quantities and prices of raw materials used in forming water filter pots. The 70:30 water filter pot uses two types of raw materials, namely Darmasaba clay and husk, while the water filter pot 60:20:20 uses three types of raw material, namely Darmasaba clay, husk, and sawdust. Water filter pot 70:30 uses a more homogeneous amount of raw materials, namely Darmasaba clay 70% and husk 30%, while water filter pot 60:20:20 uses more heterogeneous raw material, namely Darmasaba clay 60%, husk 20% and 20% sawdust. The 70:30 water filter pot uses cheaper raw material prices, namely Darmasaba clay IDR 1,000.00/kg and IDR 1,000.00 husk, while the 60:20:20 water filter pot uses one of the more expensive raw material prices, namely Darmasaba clay IDR 1,000.00/kg, husk IDR 1,000.00/kg, and wood dust IDR 1,100.00/kg.

The selling price of a 70:30 water filter pot is IDR 49,350.00/kg and the selling price of a water filter pot 60:20:20 is IDR 49,450.00/kg. The selling price of a 70:30 water filter pot is Rp. 100.00 cheaper than a 60:20:20 water filter pot. The difference is caused by the determination of the selling price using cost-plus pricing with the cost of production as the main element by assuming other factors are fixed. The lower cost of production of 70:30 water filter pots makes lower selling prices too.

The estimated value of the ending inventory of 70:30 water filter pots is IDR 25,306,398.12/kg and the selling price of 60:20:20 water filter pots is IDR 25,354,952.76/kg. The final inventory of a 70:30 water filter pot is IDR 48,554.64 lower than a water filter pot of 60:20:20. The difference is caused by the valuation of ending inventory using a special identification method with cost of production as the main element by assuming other factors are fixed. The lower cost of producing a 70:30 water filter pot results in lower end inventory values as well. The comparison of financial variables of the water filter pot 70:30 and the water filter pot 60:20:20 can be explained in Table 7.

6. CONCLUSIONS AND SUGGESTIONS

Based on the results and discussion it can be concluded: (1) Water filter pot (DA 28.0-DB 17.5-T 14.0) at BTIKK-BPPT can be made from two different raw material compositions, namely: (a) Darmasaba clay and husk in the ratio of 70%: 30%, hereinafter referred to as water filter pot 70:30; and (b) Darmasaba clay, husks and sawdust in the ratio of 60%: 20%: 20%, hereinafter referred to as water filter pot 60:20:20; (2) The financial variables of water filter pot 70:30 and water filter pot 60:20:20 are focused on three main things, namely the cost of goods manufactured, the selling price, and the ending inventory. The cost of good manufactured 70:30 water filter pot is IDR 44,869.50/kg, consisting of: raw material costs IDR 19,100.72, direct labor costs IDR 11,652.90, variable factory overhead costs IDR 6,772.00, and fixed factory overhead costs IDR 7,343.88. The selling price of a 70:30 Pot Water Filter is IDR 49,350.00/kg, which consists of a cost of good manufactured IDR 44,869.50, an expected profit margin of IDR 889.39, a marketing expense of IDR 2,243.48, and an administrative and general expense of IDR 1,346.09. The estimated value of the ending inventory of the 70:30 water filter pot is IDR 25,306,398.12, consisting of: an estimated final inventory unit of 564.00 and unit cost of production of IDR 44,869.50. The cost of good manufactured 60:20:20 water filter pot is IDR 44,869.50/kg, consisting of: raw material costs IDR 19,186.81, direct labor costs IDR 11,652.90, variable factory overhead costs IDR 6,772.00, and costs fixed factory overhead of IDR 7,343.88. The selling price of 60:20:20 water filter pot is IDR 49,450.00/kg, which consists of the production cost of IDR 44,955.59, an expected profit margin of IDR 899.11, marketing expenses of IDR 2,247.78, and administrative and general expenses IDR 1,348.67. The estimated value of the ending inventory of 60:20:20 water filter pot is IDR 25,354,951.16, consisting of: estimated final inventory unit of 564.00 and unit cost of good manufactured of IDR 44,955.59; and (3) The cost of good manufactured a 70:30 water filter pot is IDR 86.09 lower than a water filter pot 60:20:20, due to different types,

quantities and prices of raw materials used in forming a water filter pot. The selling price of a water filter pot is 70:30 cheaper IDR 100.00 than a water filter pot 60:20:20, because the determination of the selling price using cost-plus pricing with the cost of good manufactured as the main element that results in lower cost of production for the pot water filter 70:30. The ending inventory of water filter pots is 70:30 lower IDR 48,554.64 than the water filter pots 60:20:20, because the final inventory valuation that uses a special identification method with the cost of goo manufactured as the main element produces the cost of production of the filter pot 70:30 which lower.

Based on the conclusions, it can be suggested: (1) To BTIKK-BPPT, to use Darmasaba clay and husk raw materials in the ratio of 70%: 30% as raw material for water filter pots (DA 28.0-DB 17.5-T 14.0), because it has technical and financial advantages compared to using Darmasaba clay raw materials, husks and sawdust at a ratio of 60%: 20%: 20%; (2) to ceramics artisans or entrepreneurs, in order to immediately increase the economization, effectiveness and efficiency of the production process of ceramic objects, through the selection of competent material suppliers by sticking to economic principles, namely obtaining certain benefits (standards) from a number of inputs or the lowest costs, and producing prototype ceramic water filters for drinking water needs in rural areas with many water sources; and (3) to researchers, engineering engineers, engineers, and other academics (continued), to continue evaluating costs and selling prices (tariffs) based on cost accounting services not only in water filter pots, but in other ceramic creative products more specifically, so that each type of ceramic product can be determined its benefits and costs more accurately.

REFERENCES

Agustina, R. (2014), Real earning management with production cost approach based on industry sector in manufacturing companies. Scientific Journal of Accounting and Humanika, 3(2), 1172-1192.

Ahmad, K. (2013), Management Accounting Fundamentals of the Concept of Costs and Decision Making. Jakarta: PT Rajagrafindo Persada.

Astiti, N.P.Y. (2015), The effect of profitability and asset structure on capital structure in property and real estate companies listed on the Indonesia stock exchange. JUIMA Journal of Management Science, 5(2), 59-73.

Available from: http://www.id.mari Together-jk.com/index.php?target=about.us.

Available from: http://www.File:///F:/1.New/18.WP%202.2,%20Keramik%20Porous/2.Kerpor%202.Pdf. [Last accessed on 2019 Mar 27].

Available from: http://www.id.wikipedia.org/w/index.php?title=Profitability&oldid=4882630.

Available from: http://www.id.wikipedia.org/w/index.php?title=Tarif&oldid=7100190.

Gumi, W.S., Normal, I.N. (2015), Evaluation of darmasaba color bodied earthenware processing services (BWD) tariffs based on the 2015 cost elements. Journal of Business and Entrepreneurship, 11(3), 268-280.

Gumi, W.S., Normal, I.N., Mahanavami, G.A. (2016), Adjustment of BJN-4 ceramic material technology services rates in accordance with 2016 cost elements on BTIKK-BPPT. Journal of Management Science, 6(2), 199-220.

Idawati, I.A.A., Sudiartha, G.M. (2014), Effects of profitability, liquidity, company size on. dividend policy of manufacturing companies on the IDX. E-Journal at Udayana University, 3(6), 1-10.

Indrayani, K.C. (2013), The effect of corporate social responsibility on financial performance and market performance on banking companies listed on the Indonesia Stock Exchange. Krisna Journal Collection of Accounting Research, 2(1), 97-102.

Kasmir. (2014), Analysis of Financial Statements. Jakarta: PT Raja Grafindo Persada.

Kherismawati, N.P.E. (2016), Profitability and leverage as predictors of dividend policy and company value study of manufacturing companies on the Indonesia stock exchange. JUIMA Journal of Management Science, 6(2), 132-141.

Mahanavami, G.A. (2013), Factors influencing the profitability of banking companies on the Indonesia stock exchange. Scientific Journal of Management Forum, 11(2), 17-29.

Maryam, S. (2013), 2013 Manufacturing Industry Growth Targeted at 7.14%. Iceland: Industrial Media.

Mulyadi, M. (2013), Management Accounting Concepts, Benefits, and Engineering. Yogyakarta: UGM BPFE.

Purwanto, P. (2012), Relationship of Information Asymmetry with Earnings Management Actions as Implications of Agency Relations. Tegal: Thesis. Accounting Study Program, Faculty of Economics, Pancasila University.

Regional Minimum Wages. (2014), Available from: http://www.id.wikipedia-indonesia.

Rolita, R. (2014), Relationship of capital structure and investment decisions in manufacturing companies. Journal of Finance and Banking, 18(3), 370-383.

Rudianto, S. (2013), Management Accounting Information for Strategic Decision Making. Jakarta: Erlangga.

Supriyono, S. (2014), Cost Accounting Collecting Costs and Determining Cost of Goods. 1st ed. Yogyakarta: Faculty of Economics, Gadjah Mada University.

Wiagustini, N.L.P. (2014), Financial Management. Denpasar: Udayana University Press.

Yasa, I.M.S. (2014), Financial performance analysis in multipurpose cooperatives in Buleleng regency. Journal of Business and Entrepreneurship JBK, 10(1), 1-10.

APPENDIX

Appendix 1: Calculation of raw material cost water filter pot made from raw material 70%: 30%

Raw material name	Raw material using (kg/unit)	Raw material price (IDR/kg)	Raw material cost (IDR/unit)	Information
Darkam 70-30	4.50	4,244.60	19,100.72	
Standard cost of raw material (IDR/unit)			19,100.72	

Source: Data processing results, 2019

Appendix 2: Calculation of direct labor cost water filter pot made from raw material 70%: 30%

Processing step	Processing time (h/unit)	Number of worker (people)	Total processing time (h/unit)	RMW Denpasar city for a month (IDR)	Normal working hours a month (h)	RMW Denpasar city tariff for a month (IDR/h)	Direct labor cost (IDR/unit)	Inf.
Formation	0.2500	2.00	0.50	2,553,000.00	160.00	15,956.25	7,978.13	-
Smoothing	0.1000	1.00	0.10	2,553,000.00	160.00	15,956.25	1,595.63	
Drying	0.1000	1.00	0.10	2,553,000.00	160.00	15,956.25	1,595.63	-
Biscuit burning	0.5000	2.00	1.00	2,553,000.00	160.00	15,956.25	483.52	-
	0.9500		1.7000					-
Standard cost of direct labor (IDR/unit)							11,652.90	

Source: Data processing results, 2019

Appendix 3: Calculation of variable manufacturing overhead cost water filter pot made from raw material 70%: 30%

a. Indirect labor cost

Description of indirect labor	Processing time (h/unit)	RMW Denpasar city for a month (IDR)	Normal working hours a month (h)	RMW Denpasar city tariff for a month (IDR/h)	Indirect labor cost (IDR/unit)	Information
Designing and development personnel	2.0000	2,553,000.00	160.00	15,956.25	63.83	500 pieces in 2.0 h
Storage power	1.0000	2,553,000.00	160.00	15,956.25	483.52	33 pieces in 1 h
Supervisor	0.5000	2,553,000.00	160.00	15,956.25	241.76	33 pieces in 0.5 h
	3.5000					
Standard cost of indirect labor (IDR/unit)					789.11	

b. Helpful material

Helpful material name	Usage amount (kg, m^3, KWH, pieces, etc.)	Price (IDR/kg, m^3, KW, pieces, dll)	Cost estimate (IDR)	Product amount (unit)	Cost (IDR/ unit)	Information
Pencil using	1.0000	2,500.00	2,500.00	500.00	5.00	
Paper using	1.0000	5,000.00	5,000.00	500.00	10.00	
Eraser using	1.0000	2,000.00	2,000.00	500.00	4.00	
Ruler using	1.0000	2,500.00	2,500.00	500.00	5.00	
Plywood using	1.0000	50,000.00	50,000.00	500.00	100.00	
Water using	0.0050	1,675.00	8.38	1.00	8.38	
Sponge using	1.0000	2,500.00	2,500.00	100.00	25.00	
LPG using	16.6667	10,780.00	179,667.03	33.00	5,444.46	2.0833 kg/h for 8 h
Helpful material cost					5,601.83	

c. Electrical cost

Electrical cost component	Usage amount (kg, m^3, KWH, pieces, etc.)	Using time (h)	Price (IDR/kg, m^3, KW, pieces, etc.)	Cost estimate (IDR)	Product amount (unit)	Electrical cost (IDR/Unit)	Information
Electrical using	1.2000	0.2500	1,524.24	381.06	1.00	381.06	
Electrical cost						381.06	

Source: Data processing results, 2019

Appendix 4: Calculation of fixed manufacturing overhead cost water filter pot made from raw material 70%: 30%

a. Depreciation cost

No	Cost description	Quantity (unit)	Price (IDR/ unit)	Cost (Rp.)	Depreciation tariff	Month in a year (month)	Monthly cost depreciation (IDR)	Resulted product a month (unit)	Depreciation cost (IDR/ unit)
1	Table	1.0000	500,000.00	500,000.00	0.1000	12.00	4,166.67	40,000.00	0.10
2	Chair	1.0000	300,000.00	300,000.00	0.1000	12.00	2,500.00	40,000.00	0.06
3	Press machine	1.0000	30,000,000.00	30,000,000.00	0.0667	12.00	166,666.67	640.00	260.42
4	Firing stove	1.0000	50,000,000.00	50,000,000.00	0.0667	12.00	277,777.78	660.00	420.88
5	Regulator	1.0000	500,000.00	500,000.00	0.1000	12.00	4,166.67	660.00	6.31
6	Thermocopel	1.0000	5,000,000.00	5,000,000.00	0.1250	12.00	52,083.33	660.00	78.91
7	Burner	2.0000	1,000,000.00	2,000,000.00	0.2000	12.00	33,333.33	660.00	50.51
8	Firing plat	1.0000	7,800,000.00	7,800,000.00	0.2000	12.00	130,000.00	660.00	196.97
9	Long shelf	2.0000	3,000,000.00	6,000,000.00	0.1000	12.00	50,000.00	192.00	260.42
10	Short shelf	2.0000	2,000,000.00	4,000,000.00	0.1000	12.00	33,333.33	128.00	260.42
11	Depreciation of production building	16.0000	1,000,000.00	16,000,000.00	0.0500	12.00	66,666.67	505.26	131.94
12	Depreciation of designing building	4.0000	1,000,000.00	4,000,000.00	0.0500	12.00	16,666.67	240.00	69.44
13	Depreciation of storing building	12.0000	1,000,000.00	12,000,000.00	0.0500	12.00	50,000.00	240.00	208.33
Amount				138,100,000.00		12.00			
Normal working time						160.00			
Designing–storing time						4.4500			
Frequency of production a month						35.96			
Resulted product for one process						1.00			
Resulted product for a month						35.96			
Depreciation cost per unit product									1,944.72

b. Electrical cost

Electrical cost component	The power of electric wheel (KW)	Total electrical power (KW)	Electrical Abonemen monthly (IDR)	Normal production capacity monthly (unit)	Electrical cost (IDR/Unit)	Information
Electrical Abonemen	1.2000	41.50	1,020,900.00	457.14	64.58	
Electrical cost					64.58	

c. Fixed asset maintenance cost

No	Cost description	Quantity (unit)	Price (IDR/ unit)	Cost (Rp.)	Estimate fixed asset maintenance cost	Month in a year	Maintenance cost monthly (Rp.)
1	Table	1.0000	500,000.00	500,000.00	0.0500	12.00	2,083.33
2	Chair	1.0000	300,000.00	300,000.00	0.0500	12.00	1,250.00
3	Press machine	1.0000	30,000,000.00	30,000,000.00	0.0500	12.00	125,000.00
4	Firing Stove	1.0000	50,000,000.00	50,000,000.00	0.0500	12.00	208,333.33
5	Regulator	1.0000	500,000.00	500,000.00	0.0500	12.00	2,083.33
6	Thermocopel	1.0000	5,000,000.00	5,000,000.00	0.0500	12.00	20,833.33
7	Burner	2.0000	1,000,000.00	2,000,000.00	0.0500	12.00	8,333.33
8	Firing plat	1.0000	7,800,000.00	7,800,000.00	0.0500	12.00	32,500.00
9	Long shelf	2.0000	3,000,000.00	6,000,000.00	0.0500	12.00	25,000.00
10	Short shelf	2.0000	2,000,000.00	4,000,000.00	0.0500	12.00	16,666.67
11	Depreciation of production building	16.0000	1,000,000.00	16,000,000.00	0.0500	12.00	66,666.67
12	Depreciation of designing building	4.0000	1,000,000.00	4,000,000.00	0.0500	12.00	16,666.67
13	Depreciation of storing building	12.0000	1,000,000.00	12,000,000.00	0.0500	12.00	50,000.00
Amount				138,100,000.00			575,416.67
Normal working time						480.00	
Designing – storing time						4.4500	
Frequency of production a month						107.87	
Resulted product for one process						1.00	
Resulted product a month						107.87	
Maintenance cost per unit product							5,334.59

Source: Data processing results, 2019

Appendix 5: Calculation of cost of good manufactured water filter pot made raw material from 70%: 30%

No	Description	Raw material cost Baku (IDR)	Cost element			
			Direct labor cost (IDR)	Variable manufacturing overhead cost (IDR)	Fixed manufacturing overhead cost (IDR)	Cost of good manufactured (IDR)
1	Raw material cost	19,100.72				19,100.72
						19,100.72
2	Direct labor cost		11,652.90			11,652.90
						11,652.90
3	Variable manufacturing overhead cost					
	a. Indirect labor			789.11		789.11
	b. Helpful material			5,601.83		5,601.83
	c. Electrical cost			381.06		381.06
						6,772.00
4	Fixed manufacturing overhead cost					
	a. Depreciation cost				1,944.72	1,944.72
	b. Electrical cost				64.58	64.58
	c. Fixed asset maintenance cost				5,334.59	5,334.59
						7,343.88
	Amount	19,100.72	11,652.90	6,772.00	7,343.88	44,869.50

Source: Appendix 1, Appendix 2, Appendix 3, and Appendix 4, 2019

Appendix 6: Calculation of selling price water filter pot made raw material from 70%: 30%

Creative product	Cost description				Tariff
	Cost of good manufactured	Expected profit margin (IDR)	Marketing expense (IDR)	General and Adm. expense (IDR)	(Selling price) (IDR)
	1.00	0.02	0.05	0.03	1.10
Water filter pot (DA 28.0-DB 17.5-T 14.0)	44,869.50	897.39	2,243.48	1,346.09	49,356.45

Source: Appendix 5, 2019

Appendix 7: Calculation of ending inventory water filter pot made raw material from 70%: 30%

Creative product	Beginning inventory (unit)	Yearly production (unit)	Inventory available to sold (unit)	Estimate for inventory sold (unit)	Estimate for ending inventory (unit)	Cost of good manufactured (IDR/unit)	Estimate for ending inventory value (IDR)
Walter filter pot (DA 28.0-DB 17.5-T 14.0)	-	1,128.00	1,128.00	564.00	564.00	44,869.50	25,306,398.12

Source: Appendix 6, 2019

Appendix 8: Calculation of raw material cost water filter pot made from raw material 60%: 20%: 20%

Raw material name	Raw material using (kg/unit)	Raw material price (IDR/kg)	Raw material cost (IDR/unit)	Information
Water filter pot (DA 28.0-DB 17.5-T 14.0)	4.50	4,263.73	19,186.81	
Standard cost of raw material (IDR/unit)			19,186.81	

Source: Data processing result, 2019

Appendix 9: Calculation of direct labor cost water filter pot made from raw material 60%: 20%: 20%

Processing step	Processing time (h/unit)	Number of worker (people)	Total processing time (h/unit)	RMW Denpasar city for a month (IDR)	Normal working hours a month (h)	RMW Denpasar city tariff for a month (IDR/h)	Direct labor cost (IDR/unit)	Inf.
Formation	0.2500	2.00	0.50	2,553,000.00	160.00	15,956.25	7,978.13	-
Smoothing	0.1000	1.00	0.10	2,553,000.00	160.00	15,956.25	1,595.63	
Drying	0.1000	1.00	0.10	2,553,000.00	160.00	15,956.25	1,595.63	-
Biscuit burning	0.5000	2.00	1.00	2,553,000.00	160.00	15,956.25	483.52	-
	0.9500		1.7000					-
Standard cost of direct labor (IDR/unit)							11,652.90	

Source: Data processing results, 2019

Appendix 10: Calculation of variable manufacturing overhead cost water filter pot made raw material from 60%: 20%: 20%

a. Indirect labor						
Description of indirect labor	**Processing time (h/unit**	**RMW Denpasar city for a month (IDR)**	**Normal working hours a month (h)**	**RMW Denpasar city tariff for a month (IDR/h)**	**Indirect labor cost (IDR/unit)**	**Information**
Designing and development personnel	2.0000	2,553,000.00	160.00	15,956.25	63.83	500 unit in 2.0 h
Storage power	1.0000	2,553,000.00	160.00	15,956.25	483.52	33 unit in 1 h
Supervisor	0.5000	2,553,000.00	160.00	15,956.25	241.76	33 unit in 0.5 h
	3.5000					
Standard cost of indirect labor IDR/unit)					789.11	

b. Helpful material						
Helpful material name	**Usage amount (kg, m^3, KWH, pieces, etc.)**	**Price (IDR/kg, m^3, KW, pieces, dll)**	**Cost estimate (IDR)**	**Product amount (unit)**	**Cost (IDR/ unit)**	**Information**
Pencil using	1.0000	2,500.00	2,500.00	500.00	5.00	
Paper using	1.0000	5,000.00	5,000.00	500.00	10.00	
Eraser using	1.0000	2,000.00	2,000.00	500.00	4.00	
Ruler using	1.0000	2,500.00	2,500.00	500.00	5.00	
Plywood using	1.0000	50,000.00	50,000.00	500.00	100.00	
Water using	0.0050	1,675.00	8.38	1.00	8.38	
Sponge using	1.0000	2,500.00	2,500.00	100.00	25.00	
LPG using	16.6667	10,780.00	179,667.03	33.00	5,444.46	2.0833 kg/h for 8 h
Helpful material cost					5,601.83	

c. Electrical cost							
Electrical cost component	**Usage amount (kg, m^3, KWH, pieces, etc.)**	**Using time (h)**	**Price (IDR/kg, m^3, KW, pieces, etc.)**	**Cost estimate (IDR)**	**Product amount (unit)**	**Electrical cost (IDR/unit)**	**Information**
Electrical using	1.2000	0.2500	1,524.24	381.06	1.00	381.06	
Electrical cost						381.06	

Source: Data processing results, 2019

Appendix 11: Calculation of fixed manufacturing overhead cost water filter pot made raw material from 60%: 20% 20%

a. Biaya penyusutan									
No	**Cost description**	**Quantity (unit)**	**Price (IDR/ unit)**	**Cost (Rp.)**	**Depreciation tariff**	**Month in a year (month)**	**Monthly cost depreciation (IDR)**	**Resulted product a month (unit)**	**Depreciation cost (IDR/ unit)**
1	Table	1.0000	500,000.00	500,000.00	0.1000	12.00	4,166.67	40,000.00	0.10
2	Chair	1.0000	300,000.00	300,000.00	0.1000	12.00	2,500.00	40,000.00	0.06
3	Press machine	1.0000	30,000,000.00	30,000,000.00	0.0667	12.00	166,666.67	640.00	260.42
4	Firing stove	1.0000	50,000,000.00	50,000,000.00	0.0667	12.00	277,777.78	660.00	420.88
5	Regulator	1.0000	500,000.00	500,000.00	0.1000	12.00	4,166.67	660.00	6.31
6	Thermocopel	1.0000	5,000,000.00	5,000,000.00	0.1250	12.00	52,083.33	660.00	78.91
7	Burner	2.0000	1,000,000.00	2,000,000.00	0.2000	12.00	33,333.33	660.00	50.51
8	Firing plat	1.0000	7,800,000.00	7,800,000.00	0.2000	12.00	130,000.00	660.00	196.97
9	Long shelf	2.0000	3,000,000.00	6,000,000.00	0.1000	12.00	50,000.00	192.00	260.42
10	Short shelf	2.0000	2,000,000.00	4,000,000.00	0.1000	12.00	33,333.33	128.00	260.42
11	Depreciation of production building	16.0000	1,000,000.00	16,000,000.00	0.0500	12.00	66,666.67	505.26	131.94
12	Depreciation of designing building	4.0000	1,000,000.00	4,000,000.00	0.0500	12.00	16,666.67	240.00	69.44
13	Depreciation of storing building	12.0000	1,000,000.00	12,000,000.00	0.0500	12.00	50,000.00	240.00	208.33
Amount				138,100,000.00		12.00			
Normal working time						160.00			
Designing – stroring time						4.4500			
Frequency of production a month						35.96			
Resulted product for one process						1.00			
Resulted product a month						35.96			
Maintenance cost per unit product									1,944.72

b. Electrical cost						
Electrical cost component	**The power of electric wheel (KW)**	**Total electrical power (KW)**	**Electrical abonemen monthly (IDR)**	**Normal production capacity monthly (unit)**	**Electrical cost (IDR/unit)**	**Information**
Electrical abonemen	1.2000	41.50	1,020,900.00	457.14	64.58	
Electrical cost					64.58	

c. Fixed asset maintenance cost							
No	**Cost description**	**Quantity (unit)**	**Price (IDR/ unit)**	**Cost (IDR)**	**Estimate fixed asset maintenance cost**	**Month in a year**	**Maintenance cost monthly (IDR)**
1	Table	1.0000	500,000.00	500,000.00	0.0500	12.00	2,083.33
2	Chair	1.0000	300,000.00	300,000.00	0.0500	12.00	1,250.00
3	Press machine	1.0000	30,000,000.00	30,000,000.00	0.0500	12.00	125,000.00
4	Firing stove	1.0000	50,000,000.00	50,000,000.00	0.0500	12.00	208,333.33
5	Regulator	1.0000	500,000.00	500,000.00	0.0500	12.00	2,083.33
6	Thermocopel	1.0000	5,000,000.00	5,000,000.00	0.0500	12.00	20,833.33
7	Burner	2.0000	1,000,000.00	2,000,000.00	0.0500	12.00	8,333.33
8	Firing plat	1.0000	7,800,000.00	7,800,000.00	0.0500	12.00	32,500.00
9	Long shelf	2.0000	3,000,000.00	6,000,000.00	0.0500	12.00	25,000.00
10	Short shelf	2.0000	2,000,000.00	4,000,000.00	0.0500	12.00	16,666.67
11	Depreciation of production building	16.0000	1,000,000.00	16,000,000.00	0.0500	12.00	66,666.67
12	Depreciation of designing building	4.0000	1,000,000.00	4,000,000.00	0.0500	12.00	16,666.67
13	Depreciation of storing building	12.0000	1,000,000.00	12,000,000.00	0.0500	12.00	50,000.00
Amount				138,100,000.00			575,416.67
Normal working time						480.00	
Designing – stroring time						4.4500	
Frequency of production a month						107.87	
Resulted product for one process						1.00	
Resulted product a month						107.87	
Maintenance cost per unit product							5,334.59

Source: Data processing results, 2019

Appendix 12: Calculation of cost of good manufactured water filter pot made raw material from 60%: 20%: 20%

No	**Description**	**Raw material cost (IDR)**	**Cost element**			**Cost of good manufactured (IDR)**
			Direct labor cost (IDR)	**Variable manufactured overhead cost (IDR)**	**Fixed manufactured overhead cost (IDR)**	
1	Raw material cost	19,100.72				19,100.72
						19,100.72
2	Direct labor cost		11,652.90			11,652.90
						11,652.90
3	Variable manufactured overhead cost					
	a. Indirect labor			789.11		789.11
	b. Helpful material			5,601.83		5,601.83
	c. Electrical cost			381.06		381.06
						6,772.00
4	Fixed manufactured overhead cost					
	a. Depreciation cost				1,944.72	1,944.72
	b. Electrical cost				64.58	64.58
	c. Fixed asset maintenance cost				5,334.59	5,334.59
						7,343.88
	Amount	19,100.72	11,652.90	6,772.00	7,343.88	44,869.50

Source: Appendix 8, Appendix 9, Appendix 10, and Appendix 11, 2019

Appendix 13: Calculation of selling price water filter pot made raw material from 60%: 20%: 20%

Creative product	Cost of good manufactured (IDR)	Cost description			Tariff (selling price) (IDR)
		Expected profit margin (IDR)	Marketing expense (IDR)	General and Adm. expense (IDR)	
	1.00	0.02	0.05	0.03	1.10
Water filter pot (DA 28.0-DB 17.5-T 14.0)	44,955,59	899.11	2,247.78	1,348.67	49,451,15

Source: Appendix 12, 2019

Appendix 14: Calculation of ending inventory water filter pot made raw material from 60%: 20%: 20%

Creative product	Beginning inventory (unit)	Yearly production (unit)	Inventory available to sold (unit)	Estimate for inventory sold (unit)	Estimate for ending inventory (unit)	Cost of good manufactured (IDR/unit)	Estimate for ending inventory value (IDR)
Water filter pot (DA 28.0-DB 17.5-T 14.0)	-	1,128.00	1,128.00	564.00	564.00	44,955.59	25,354,951.16

Source: Appendix 13, 2019