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Calculation of Production Costs and Operating Profit of MSME in Terms of Accounting Standards

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***Abstract*—This study uses a survey technique with a mixed method which aims to evaluate the understanding of MSME actors in calculating production costs to calculating profits. Respondents of this study were 47 SMEs in the food and beverage business sector. This research was conducted by means of an online survey by distributing questionnaires, the results of which were further analyzed qualitatively and hypotheses were tested using a paired sample t test. The results of this study indicate that the level of understanding of respondents in calculating production costs to operating profit is low, this is evidenced by the results of hypothesis testing. The first hypothesis shows that there is no significant difference between the calculation of production costs calculated by MSME actors and calculations in accordance with accounting standards. While the second hypothesis shows that there is a significant difference between the calculation of profits calculated by MSME actors and calculations in accordance with accounting standards. The results of this study indicate that MSME actors need to be given assistance in determining production costs to determining profits, so that the accounting information produced can be trusted and can be used as decision making.**

Keywords—MSME, production costs, operating profits, accounting, standards

I. INTRODUCTION

Indonesia is a developing country that focuses on growth and economic development in a better direction. Micro, Small and Medium Enterprises (MSMEs) have made the most important and largest contribution in providing employment and income for the wider community. The number of MSME in Indonesia has increased from year to year. According to data from the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia [1] in 2017 the number of MSMEs in Indonesia was 62,922,617 business units and in 2018 it increased to 64,194,057 business units. The existence of MSMEs in Indonesia affects economic growth and the provision of employment so that it can reduce the unemployment rate in Indonesia. The challenge faced by MSME actors is in managing funds [2]. Good fund management is a key factor in the success of MSMEs [3].

The method of managing funds that can be applied by MSME actors is to apply good accounting in order to obtain important financial information in running their business [2]. Accounting information can be an accurate basis for small businesses in making decisions on market development, pricing, and others [4].

The Indonesian Institute of Accountants issues financial accounting standards for MSMEs, namely the Financial Accounting Standards for Micro, Small and Medium Entities which are effective starting January 1, 2018. The accounting records must comply with the applicable Financial Accounting Standards. Accounting Standards have accounting treatment starting from recognition, measurement, presentation or disclosure which is the basis for preparing financial statements [5]. Many small entrepreneurs in Indonesia do not use accounting information in managing their business [6], this is reinforced by a statement which states that small entrepreneurs do not have accounting knowledge and do not understand the importance of recording and bookkeeping for their business [7]. In addition to a lack of accounting knowledge, MSME actors in calculating production costs are only based on estimates, there is no special record in determining production costs [8]. Errors in the calculation of production costs will affect the selling price and will also have an impact on recorded profits.

Given the importance of accounting for business actors, it is necessary to conduct a survey on the accounting knowledge of MSME actors. The first objective of this research is to see the extent of accounting knowledge of MSME actors and how the accounting recording process has been carried out so far. The second objective is to measure the difference between the calculation of production costs and the calculation of profit carried out by MSME actors with calculations that are in accordance with accounting standards. The results of the research will be drawn conclusions and taken into consideration for the next steps.

II. Literature Review and Hypotheses

Production costs consist of direct material costs, labour costs, and overhead costs [9]. Information on the cost of production functions as a determinant of product selling prices, monitors the realization of production costs, calculates periodic profit/loss, determines the cost of finished goods and work-in-progress inventories which are presented in the statement of financial position [10]. Cost is the main object in cost accounting that is used as the basis for determining product prices, planning and controlling costs, and making decisions [11]. Reliable accounting records are needed for business actors to find out accurate financial information. In carrying out accounting records, it must be in accordance with transactions and need to be recorded in accordance with applicable accounting standards [5]. The current accounting records carried out by MSME do not reflect actual financial information. The biggest weakness of MSMEs lies in the inability to calculate costs which results in determining product prices without any basis and without certain considerations [11]. Determination of production costs carried out without a basis will result in the calculation of selling prices to inaccurate profit calculations. In order to record production costs accurately, it is necessary to calculate production costs in accordance with accounting standards, which are obtained from adding up the costs of direct materials, direct labour costs, and overhead costs. Adequate and reliable accounting records will reflect the real financial situation [2].

Based on the theory and previous research above, the following hypotheses are formulated:

H1: There is a significant difference between the calculation of production costs calculated by MSME actors and production costs calculated according to accounting standards

H2: There is a significant difference between the profit calculation calculated by MSME actors and the profit calculated according to accounting standards

III. Research Methods

This research is a survey research using mixed method. Mixed method is a research approach that combines qualitative and quantitative forms [12]. The qualitative approach in this study is in the form of respondents' answers to survey questionnaires distributed regarding understanding the calculation of production costs to calculating profits. The questionnaire distributed is an open type of questionnaire to get more in-depth results regarding understanding the calculation of production costs to calculating profit.

The quantitative approach in this study is the data on the calculation of production costs and profits that have been calculated by the respondents on the given case questions. The results of the respondents' answers are compared with the calculation of production costs and profits in accordance with accounting standards. To compare the results of these calculations, a different test was performed using a paired sample t test.

The sample of this research is the food and beverage cluster SMEs in Bekasi, Yogyakarta, and East Java. The survey was conducted online by distributing case questions through the WhatsApp group and answer sheets using the google form. Respondents were asked to answer questions according to their knowledge and according to the records that have been carried out so far. From the results of the survey, it will be analysed whether the records that have been carried out by MSME actors are in accordance with accounting standards. The number of respondents in this study were 47 respondents. In the survey questionnaire, respondents will be asked questions about the cost of production to the calculation of profit and questions to calculate the cost of goods sold to profit. The measurement indicators of this research are:

TABLE I. Indicator and Question

Indicator	Question
Production cost	Calculation of production costs Elements used in calculating production costs
Profit percentage	What percentage of profit is taken What is the selling price How to determine the selling price
Income and profit	How much income do you get How much profit did you get What elements are used in calculating profit?

IV. Results and Discussion

A. Discussion of Questionnaire Results

1) Production cost: All respondents have answered the case questions given. Respondents' answers to survey questions varied, so the responses of these respondents needed to be grouped to facilitate evaluation. The following is a summary of the survey results regarding the understanding of the calculation of production costs that have been grouped:

TABLE II. Summary of Survey Results on Understanding Production Cost Calculation

No	Respondent's Answer	Number of Respondents
1.	Raw materials plus labor and overhead costs	4
2.	The total amount of expenses that have been incurred	43
Total		**47**

There are 4 respondents or 8.5% answered correctly, namely the production costs obtained from the cost of raw materials, labor costs, and overhead costs. Other respondents' answers as much as 91.5% are still not correct. 91.5% of these respondents do not separate overhead costs from other expenses that are not related to production activities. Like the purchase of equipment such as stoves and ovens charged to production costs. Referring to accounting standards, the purchase of the equipment is not appropriate if it is included in the production costs. Equipment that has been purchased should be included in the equipment account which will appear on the statement of financial position.

2) Profit percentage: The average respondent takes a profit of 70% of the cost of production. The following is a summary of the survey results regarding the determination of the grouped selling prices:

TABLE III. SUMMARY OF SURVEY RESULTS ON SELLING PRICE DETERMINATION

No.	Respondent's Answer	Number of Respondents
1.	Production costs divided by the number of production then added the desired profit	28
2.	Capital plus profit percentage	4
3.	Production costs plus employee salaries plus desired profit	15
Total		47

Based on table 3, in determining the selling price as many as 28 respondents have answered correctly, but the calculation is still not correct because in calculating production costs an error occurred, resulting in an error also in the calculation of the selling price. A total of 4 other respondents answered that the determination of the selling price was obtained from capital plus a percentage of profit. In accounting, capital cannot be used in determining the selling price. The capital referred to in the respondent's answer is all expenditures that have occurred. This is not true in accounting, because the expenses incurred are expenses, not capital. A total of 15 other respondents answered that the determination of the selling price was obtained from production costs plus employee salaries plus the desired profit. Evaluating the answer, in determining the selling price, there is an imbalance in the costs charged, namely the labor costs that have been determined to calculate the production costs are added again to determine the selling price, as a result the selling price determined is too high.

3) Income and profit: Overall, all respondents have answered how to determine income correctly. There is no difficulty for respondents when determining how to calculate income, it's just that the nominal amount of income that should be received is not appropriate because the recording from the beginning when calculating production costs has occurred, resulting in errors in subsequent recordings. In calculating profit, as many as 8.5% of respondents have understood the profit calculation process, namely income minus cost of goods sold and operating expenses. As many as 91.5% of other respondents do not understand the profit calculation process. The following is a summary of the survey results regarding the understanding of profit calculation:

TABLE IV. SUMMARY OF SURVEY RESULTS ON PROFIT CALCULATION

No.	Respondent's Answer	Number of Respondents
1.	Revenue minus COGS and Operating Expenses	4
2.	Income minus capital	3
3.	Income minus all expenses	26
4.	Revenue minus production costs and unsold production	14
Total		**47**

Based on the summary table 4 of respondents' answers above, as many as 4 respondents have answered the question correctly, while the other 43 respondents are less precise in answering the question. A total of 3 respondents answered that profit was obtained from income minus the capital issued. In accounting, capital is not an expense that is used as a deduction from income to calculate profit. Capital is the equity of a business to carry out operating activities. In addition, 26 other respondents answered that profit was obtained from income minus all expenses, this statement was not correct because not all expenses were a burden for the business unit. Just as expenditure on the purchase of stoves and ovens is an addition to business assets in the equipment account and a reduction in business assets in the cash account, so that equipment expenses cannot be included in the income statement to determine the amount of profit. The purchase of such equipment is included in the statement of financial position. A total of 14 other respondents answered that profit was derived from income minus production costs and unsold production.

B. Hypothesis testing

The data used in this hypothesis test is the calculation of production costs and profit calculations that have been calculated by MSME actors according to their knowledge and compared with production cost calculation data and profit calculations that have been calculated according to accounting standards. Table 5 shows the results of the normality test of production cost data. The production cost data has been normally distributed so that the next test can be carried out, namely the paired sample t test.

TABLE V. NORMALITY TEST OF PRODUCTION COSTS

		Unstandardized Residual
N		***47***
Normal Parameters[a,b]	Mean	0,000
	Std. Deviation	3002464,112
Most Extreme Differences	Absolute	0,210
	Positive	0,210
	Negative	-0,134
Test Statistic		0,210
Asymp. Sig. (2-tailed)		0,000[c]

Table 6 describes the results of the paired sample statistics test which shows that the difference in the average value of the calculation of production costs carried out by MSMEs with production costs is in accordance with accounting standards. The calculation of production costs carried out by MSMEs is indicated by "Before" and the calculation of production costs in accordance with accounting standards is indicated by "After". The average of After is higher than Before, namely for After of 6662877,660 and Before of 4357494,360. These results indicate that descriptively there is an average difference between after and before.

TABLE VI. TEST OF PAIRED SAMPLE STATISTICS

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before	4357494,36	47	3007139,342	438636,355
	After	6662877,66	47	11332514,240	1653017,093

Table 7 describes the paired sample test which shows that the sig. (2 tailed) of 0.190 which means above 0.05. Due to the value of sig. (2 tailed) above 0.05, it can be stated that the first hypothesis is not supported, namely there is no significant average difference between the calculation of production costs calculated by MSMEs and calculations in accordance with accounting standards. There is no significant difference because in the questions done by the respondents the total value of production costs is not much different from the total value of the costs incurred.

TABLE VII. PAIRED SAMPLE TEST

		Paired Differences			Sig. (2-tailed)
		Mean	*Std. Deviation*	*Std. Error Mean*	
Pair 1	Before After	-2305383,298	11885615,91	1733695,26	0,190

Table 8 shows the results of the normality test of profit calculation data. The profit calculation data has been normally distributed so that the next test can be carried out, namely the paired sample t test.

TABLE VIII. PROFIT NORMALITY TEST

		Unstandardized Residual
N		*47*
Normal Parameters[a,b]	Mean	0,000
	Std. Deviation	3103263,322
Most Extreme Differences	Absolute	0,169
	Positive	0,169
	Negative	-0,106
Test Statistic		0,169
Asymp. Sig. (2-tailed)		0,002[c]

Table 9 explains the results of the paired sample statistics test which shows that the difference in the average value of profit calculations carried out by MSMEs with profit calculations is in accordance with accounting standards. The calculation of profit made by MSMEs is indicated by "earning_before" and the calculation of profit in accordance with accounting standards is indicated by "earnings_after". Average Profit_after is lower than Profit_before, namely for Profit_after which is 2466217.230 and Profit_before is 3983872.83. These results indicate that descriptively there is an average difference between BP_after and BP_before.

TABLE IX. PAIRED SAMPLE STATISTICS TEST

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	earning_before	3983872,83	47	3539703.82	516318,86
	earnings_after	2466217,23	47	1427979.18	208292,17

Table 10 describes the paired sample test which shows that the sig. (2 tailed) of 0.02 which means below 0.05. Due to the value of sig. (2 tailed) below 0.05, it can be stated that the second hypothesis is supported, namely that there is a significant average difference between the calculation of profit calculated by MSMEs and the calculation in accordance with accounting standards. This second hypothesis is supported because the recording of profits made by MSME actors has an imbalance in cost calculations, namely labor costs that have been calculated in production costs are recalculated to reduce income. In addition, the selling price determined is too high because the calculated basis for calculating the selling price (production cost) that has been calculated is too high from the actual production cost, resulting in the calculation of the income received is also too high.

TABLE X. PAIRED SAMPLE TEST

		Paired Differences			Sig. (2-tailed)
		Mean	*Std. Deviation*	*Std. Error Mean*	
Pair 1	earning_before - earnings_after	1517655,59	3115401,49	454428,013	0,002

V. CONCLUSIONS

Proper accounting records are needed by business actors, one of which is micro, small and medium enterprises. In accounting records, especially entrepreneurs engaged in the manufacturing sector, it is necessary to understand manufacturing accounting records ranging from production cost calculations to operating profit calculations. In this study, a survey was conducted on MSMEs engaged in the manufacturing sector such as food and beverage actors. Accounting is a recording process that relates one account to another, so that if there is a recording error at the beginning of the accounting process, then the calculation or accounting records for the future will be an error.

The results show that MSMEs do not understand how to determine the cost of production, so that it will result in miscalculation of the selling price to the calculation of profit. In calculating the cost of production, respondents do not separate overhead costs from other expenses that are not related to production activities. As well as expenses that should go into equipment, respondents use it as an addition to production costs so that the calculated production costs do not reflect the actual production costs. The production costs that have been calculated by the respondents are too high compared to the actual production costs. Because the determination of the cost of production does not reflect the actual cost of production, in determining the selling price it does not reflect the actual selling price, as a result, the recorded selling price is either too high or too low. In addition, the understanding of MSME actors in calculating profits is also still lacking. In calculating profit, most MSME actors calculate it from income minus all expenses. This is not correct accounting, because not all expenses can be categorized as expenses, while those that can

be used to calculate profit are expenses that are categorized as expenses.

Statistically, the calculation of production costs that have been carried out by MSME actors is not significantly different from the calculation of production costs in accordance with accounting standards. On the other hand, the calculation of profits that have been carried out by MSME actors is significantly different from the calculation of profits in accordance with accounting standards. This happens because in recording profits there is a cost imbalance, namely costs that have been included in production costs are recalculated to reduce income in calculating profits. In addition, the calculation of production costs that are too high causes the selling price to be too high, so that the income that will be used in calculating profits is too high.

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