

# Designing the production costing model for small and medium enterprises in Magelang regency

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## Abstract

For SMEs, the preparation of the budget becomes a solution that still has not been found a solution, this is due to the limited knowledge of business actors about the technical preparation of the company budget. The purpose of this research is to provide an overview of the design of the budget preparation model for MSME entrepreneurs. This study uses a qualitative approach with the R & D method of budgeting models for MSMEs. The results of this study consisted of three stages, namely stage one consisting of identification of business process activities, identification of the costs of each business activity and determination of the arithmetic unit of each expenditure. Stage two is the calculation of the total cost of each business activity and the third stage is the stage of preparing the cost of production, calculating the gross profit and net profit of the business.

Keywords: Financial Performance, Ratio, Share and Growth

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## Introduction

Small scale businesses in Indonesia are the subject of discussion and are of concern to the government because they are spread everywhere, and can provide potential employment opportunities (Gusrianti D, 2018). Small industries contribute to development in various ways, create employment opportunities, and provide flexibility of needs and innovation in the economy as a whole. In terms of quantity, MSMEs are indeed superior, this is based on the fact that most businesses in Indonesia are in the form of small and medium scale businesses (MSMEs). However, in terms of turnover and assets, if the overall turnover and assets of MSMEs in Indonesia are combined, the amount is not necessarily able to rival a national scale company. MSMEs are in most of the business sectors in Indonesia. The development of the private sector, especially MSMEs, needs to be done considering that this sector has the potential to maintain economic stability, increase employment, increase GDP, and develop the business world.

At present the role of MSMEs has not yet been felt, due to the lack of competitive power with foreign products, and also the classic problem of capital. The government is increasingly aware of the benefits provided by MSMEs in efforts to improve the nation's economy (Nurfitriani et al, 2017). This is proven by the increasing number of jobs provided by the UMKM itself. MSME use of human labor is more dominant compared to machine power. This of course will reduce unemployment, which today is a complicated problem that never ends. In addition, MSMEs are also the biggest economic actors in the Indonesian economy and are proven to be the safety valve of the national economy in times of crisis, as well as being a dynamic economic growth post crisis.

Technical ability to determine the cost of production precisely is a problem that is always faced by the UMKM practitioners. The inability to arrange the cost of production has caused the selling price of the product to not accommodate all expenses incurred, so that it has an impact on the achievement of inappropriate earnings (Astarani Juanda, 2014).

This research intends to provide an alternative in overcoming the problem of terutaa in terms of determining the cost of production for SMEs, namely through a practical, easy-to-understand, and understanding model of cost of goods manufactured and helping MSMEs in running their businesses (Anta Agus, 2017).

## Research Method

The method used in this study is the R & D (research & development) method, which is a research method used to produce certain products, and test the effectiveness of these products (Sugiyono, 2012). Beginning with exploring data and information about the potential and problems related to the technique of preparing the cost of MSME production, followed by designing a model of preparing the cost of production. Furthermore, the model that has been designed will be tested on selected MSMEs, until the implementation of the general budgeting model for MSMEs in the Magelang Regency area (Herdiansyah, Haris, 2010)

## Results and Discussion

### General Overview of MSMEs in Magelang Regency

The following general conditions regarding small and medium businesses in the district of Magelang are shown in table 1 below.

**Table 1.** General Conditions of MSMEs in 2018 Magelang Regency

No.	Industry type	Number of Business Units	Labor absorption	Investment Value (Rp. 000)	Production Value (Rp.000)
1.	IHPK	35.366	72.575	233.466.096	1.281.445.358
2.	ILMKA & IATT	2.919	15.537	120.143.934	624.133.756
3.	Total	38.285	88.112	353.610.032	1.905.579.097

Source: BPS District Magelang, 2018

If you look at the data in table 1 shows that the majority of 92% of business operators in Kaputen Magelang are engaged in agriculture and forestry sector. While other business sectors only reach 8% percent. The ability of the agriculture and forestry sectors to absorb labor is far above other industry sectors. Out of 88,112 workers, or the remaining 82% is contributed by other sectors or only about 18%. If viewed from the value of investment, the agriculture and forestry sector has been able to reach a figure of more than 233 billion, equivalent to 66% of the total investment value, while the total investment value from other sectors reached 34%. Also through this data, if we look at the value of production in 1 year, it is known that the agriculture and embassy sectors have contributed more than 1.2 trillion or equivalent to 67% of the total production value. Thus other sectors only account for 33% of the total production value per year.

**Table 2.** Contribution of the Industrial Sector to the GRDP of Magelang Regency

No.	Description	2014	2015	2016	2017	2018
1.	Processing industry	1.443	1.602	1.810	2.023	2.260
2.	Magelang Regency GRDP	8.022.	8.770	9.736	10.814	12.047
%	Contribution	18,00	18,27	18,59	18,71	18,77

Source: BPS District Magelang, 2018

Performance indicators The contribution of industrial exports to total exports in 2018 achieved performance of 115.92%. The realization of the contribution of the industrial sector to total exports in 2018 was 98.53%, an increase of 0.71% compared to 2017 which reached 97.82%. When compared with the medium-term target, the realization of 98.53% has exceeded the target set, which amounted to 79.97% as of the end of 2018, so that the performance achievement was 123.21%. Based on data obtained from Disdagsar Magelang Regency, from total exports in 2018 amounted to 102,372,675.52 \$, 100,866,994.35 \$ (RKPD of Magelang Regency, 2018).

### Identification of MSME Groups

Based on the results of the identification and discussion with the ranks of the Cooperative Industry Office and UMKM, it is determined that the leading MSMEs of Magelang Regency will be ranked 9 types of superior products/commodities, namely natural stone handicraft industry, cassava processing industry, brown sugar industry, processed industry salak, coffee processing industry, horn craft industry, broom rayung industry, bamboo handicraft industry and papaya fruit industry. In this study, the researchers limited it to four MSMEs that were included in the food industry category. As presented in table 3 below:

**Table 3.** List of Featured UMKM in 2018 Based on Study Results of the Industry and Cooperative Office and UMKM

No.	Effort	Location	Total	Raw Material	Production Amount
1.	Slondok	Grabag	177	50 ton/hari	12,5 ton/hari
2.	Gula Semut	Candimulyo	54	3456 butir/hari	7 ton/hari
3.	Olahan salak	Srumbung	75	471.481 ton/tahun	12 ton/hari
4.	Olahan kopi	Ngancah losari	67	150 kg/hari	80 kg/hari

Source: data processed

### Constraints for the Development of MSMEs in Magelang Regency

It cannot be denied that the existence of MSME as one of the pillars of the country's economy. However, there are still various problems that have always shackled MSMEs to develop (Gusrianti D, 2018). From the results of surveys and observations of 40 MSMEs in Magelang Regency, found that the obstacles faced by MSMEs are: the quality of human resources is still lacking, not yet in legal standing, lacking skills regarding product innovation, limited access to capital, lack of assistance from related agencies.

Nevertheless the Magelang Regency government has made various efforts in order to encourage the development of MSME sector businesses. Activities that have been carried out include: creating a conducive business climate through simplification of licensing procedures, capital assistance with special credit for MSMEs in cooperation with regional government banks, business protection, partnership development and various training for MSME entrepreneurs.

### Flow and structure of the MSME budgeting model

To find out the flow and structure of financial reporting compiled by SMEs in the City of Magelang. The questionnaire consisted of 11 questions with closed answers. The number of respondents was 40 people. Consisting of 10 respondents with salak processing business, 10 people ant sugar business, 10 people processing cassava and 10 processing coffee beans. The following profile of respondents as presented in table 4.

Based on the table, it can be seen that most of the businesses have been running for more than 10 years. This is indeed reasonable considering their business is a hereditary effort passed down from generation to generation. And the majority of businesses are still managed by older people with the majority education level is primary school.

The problem of legal entities has partly been part of their business law. Even though the legal entity they understand is not a legal entity such as a CV, PT. Fa or other types of formal legal entities. However, they interpret the legal entity here as having P-IRT (Household Industry Food), increasing their business on average is a food processing business. This condition also cannot be separated from the guidance and assistance from the local Department of Cooperatives and MSMEs on the importance of P-IRT for their businesses.

The MSME Industry household sector is indeed one sector that is capable of absorbing a relatively large workforce. This is evidenced by the majority of respondents in the sample employing no less than 5 people. Some of them are even able to address a workforce of more

than 10 people. Of course, this can also be forgotten that most businesses are family businesses. So employees employed are members of their respective families.

**Table 4.** List of Research Questionnaire and Respondents' Answers

No	Criteria	Information
1	Educational level of the respondent	The 15 highest education respondents were elementary school, 20 were junior high, and 5 respondents were high school/equivalent
2	Duration of business in operation	25 respondents answered that their business has been operating for more than 10 years and the rest is less than 10 years.
3	The existence of a business legal entity	26 respondents stated that their businesses have been incorporated and 4 responses have not been incorporated
4	Number of employees	20 responses have as many as 5-10 employees, and 10 responses employ more than 10 employees
5	Availability of accounting employees	40 responses stated that they do not have special accounting employees (accounting educated)
6	Bookkeeping activity	30 respondents answered that they kept financial records simple, and only 10 respondents did the neat financial recording.
7	Making sales reports and financial reports	As many as 40 respondents said they did not make sales and financial reports regularly/periodically.
8	Compilation of annual sales plans	40 respondents answered not compiling sales plans in one year
9	Production budget making activities	40 respondents answered not compiling knowing and not compiling a production budget
10	The technique of determining the product selling price	30 response people answered in order to determine the selling price of the product beforehand, it must be known how much the cost of raw materials and labor while 10 respondents stated that the selling price was determined by the collectors.
11	Determination of profit	30 responses responded in determining the profit made through the technique approximately after calculated revenue minus expenses. While 10 respondents said they did not know how much profit they got.

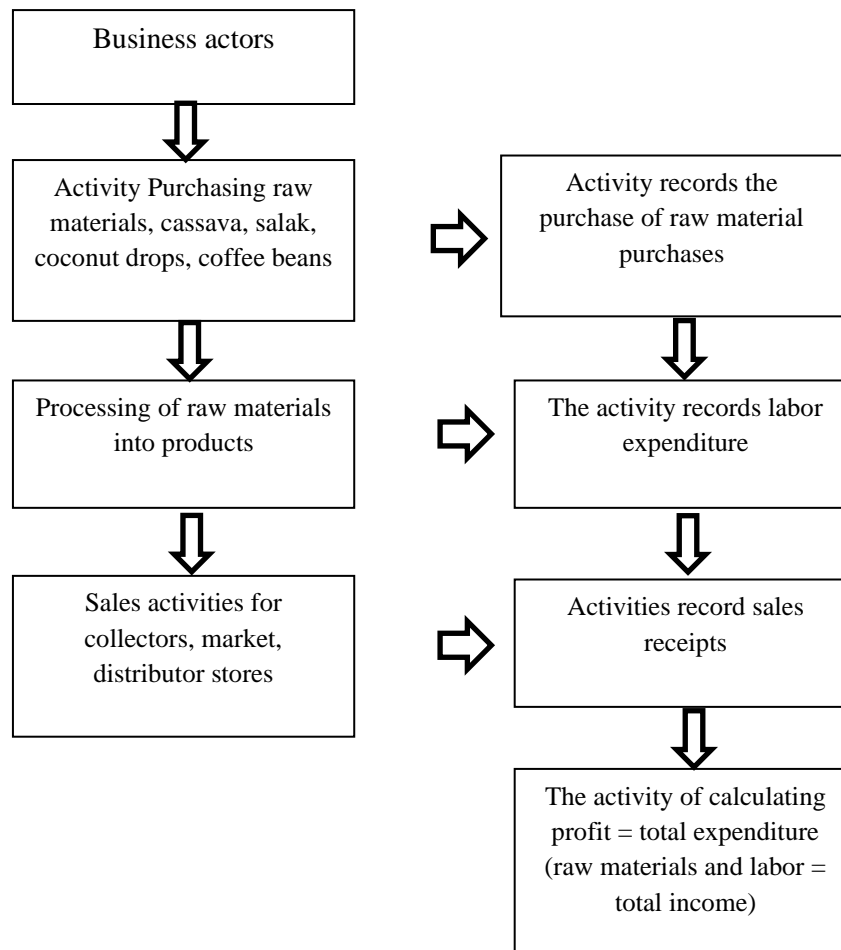
Source: data processed

In the case of accounting activities it is indeed a problem that is almost always encountered in all MSMEs. And it is always one of the problems that is wrong because it is difficult for MSMEs to be floating. The majority of the 40 samples do not have employees who have knowledge in accounting. Financial administration activities are only limited to simple financial records. Such as income/sales and distribution or purchase only. The majority of businesses do not understand how to use good accounting techniques and know various things about the production budget, sales budget and so on. So it is not surprising that almost all respondents did not make sales plans and production budgets at the beginning of the year of business activities.

Therefore it is not surprising that the majority of respondents do not know how to determine the selling price of the product correctly. So they can find out how much profit they will get at the end of this period. the majority of respondents do not know how to determine profits. As much as they know profit very simply, namely by reducing revenue by the amount of expenditure that is profit.

Indeed, this is a serious problem faced by small businesses. The relatively low education background of business actors is a factor in their lack of understanding of accounting. Besides the existence of practices that are less healthy in their activities. As is known in several types of businesses such as examples of ant sugar business. Producers cannot determine their own selling prices for their products, but the selling price will be determined by the collectors. Trader in charge of what the prevailing selling price is. This condition is certainly very difficult for ant sugar business people.

In summary, based on the results of interviews conducted with 40 people about how the flow of production activities and financial bookkeeping processes carried out by business actors engaged in the sector of processing cassava into slondok, salacca processed, ant sugar refined, and coffee processing can be drawn in the following scheme:



**Figure 1.** Flow of Production Activities, and Bookkeeping Business Slondok, Processed Salak, Ant Sugar and Coffee

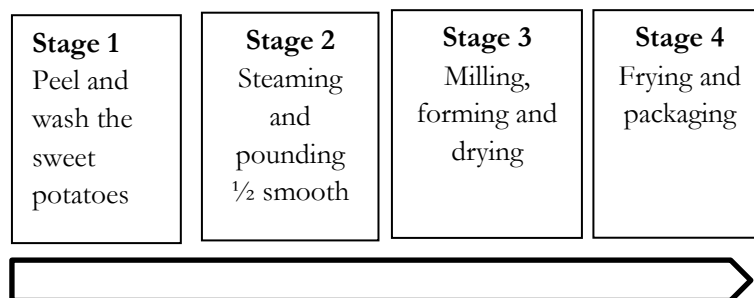
By paying attention to the production process and how the bookkeeping activities flow in the four businesses, we can conclude that the business activities and especially the bookkeeping process carried out by business actors looks very simple. Not yet seen how businesses implement good accounting techniques such as preparing the sales budget, production budget, expenditure budget and so forth.

### Model of Basic Production Costs for MSME Production

Budgeting is a detailed planning of the number of product units to be produced during the coming period, which includes plans regarding the type (quality), quantity, time (when) production will be carried out. Budgeting is very helpful for business people in running their business. Based on research results, it is known that almost all of the business actors sampled have not prepared a production budget properly. In order to provide an illustration of how to prepare a good budget for business actors, the following will be made a design model for preparing the production budget that can be applied by business actors. The simulation model will use a sample of cassava processing business into slondok. This is due to the limitations of researchers in gathering information related to three other businesses, namely wrong processing, ant sugar and coffee. Researchers only succeeded in gathering the information needed in the

framework of preparing a budget model from the slondok business with a sample from Mr. Supriyadi's business.

Mr. Supriadi, is a slondok businessman who has been in business for more than 10 years. This business pack is located in Purwogondo Hamlet Sumberarum Grabag Magelang. Even though the Slondok business now has 6 employees, Pak Supriyadi does not have an accounting staff who is trusted to carry out accounting activities. Bookkeeping is carried out by his wife, Ibu Sriyati. Bookkeeping activities are carried out with simple records that include records of income, and expenses only. There are no financial reports, sales reports, let alone planned production budgets. Even though when interviewed Mr. Supriyadi stated a little understanding of the concept of the production budget, what it's the budget for labor costs, raw materials and supporting material costs. Therefore, Mr. Supriyadi in setting the product selling price based on the prevailing market price. Likewise, the determination of profit only bases on how much revenue is reduced by how much expenditure is.



**Figure 2.** Slondok Production Flow

### Production Cost Analysis

Based on the picture of Mr. Supriyadi's slondok production line, the production costs can be grouped into four categories, namely peeling and washing cassava, steaming and pounding, grinding and drying, and frying and packaging. The process of preparing a production budget is carried out by the steps of determining the price of raw materials, labor costs, and overhead costs. Following are the details of the production activities budget from the activities of stage one to the stage of marketing.

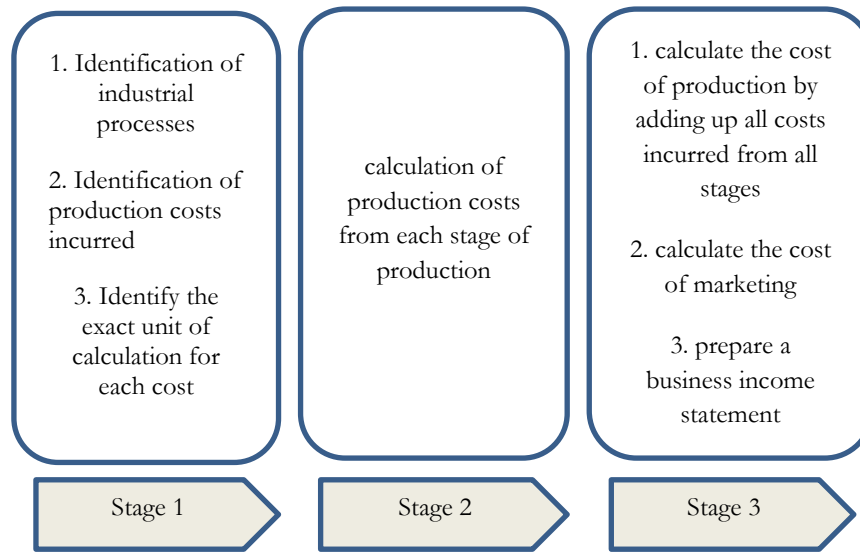
After knowing the total costs of each activity, including marketing costs, then the company can calculate the estimated profit/loss. Based on data obtained from respondents that the total amount of slondok produced and ready to be marketed per month reaches 500 kg with a price per kg of Rp. 5000. So, an estimate of profit and loss can be calculated.

By using the simulation sourced from Mr. Supriyadi's business data, we hereby can formulate a production budgeting model that can be used by slondok craftsmen MSMEs as well as other businesses, especially wrong processing, coffee bean processing and ant sugar business. This is because the four businesses have the same characteristics, namely the processing of raw materials into finished materials. The production cost budgeting model will be described in the following scheme.

This model scheme begins by identifying the activities of the production process from beginning to end. From this identification, it is expected that any production activities that can cost, both raw materials, labor, overhead and depreciation costs can be mapped that must be charged at each stage of the production process. In this first stage it is also necessary to determine the exact unit for each cost required. For example, determining labor costs whether using a daily system, working hours or production units. Likewise for the determination of the unit to calculate the cost of depreciation and overhead incurred.

The second step is to carry out a detailed calculation of the cost consumption of all successfully identified stages. This stage is to determine how much money is incurred from each

stage. With cost components including raw materials, labor, depreciation overhead costs to marketing costs. While the fourth stage of the model above is counting



**Figure 3.** Schema of the Production Cost Budgeting Model

The third stage of this model is to calculate the total cost of each stage to calculate the cost of goods sold (cost of good sold). Cost of goods sold. At this stage, the expenses for the marketing activities of the product will also be calculated. This marketing activity in general is all activities carried out in order to sell products from production to consumers, both consumer users or agents and distributors.

The final activity of this third stage is the preparation of a profit or loss statement. Determination of operating profit or loss is done by calculating income derived from sales of products reduced by expenses. In calculating the business profit and loss, first calculate the gross profit of the business. The gross profit of the business is calculated by reducing income to the cost of production. After knowing the gross profit of the business continued by calculating the net profit of the business by reducing the gross profit of the business with the total marketing costs.

## Conclusion

Based on the results of research that has been done the conclusions that can be drawn are as follows:

1. Production cost budgeting model for slondok, sugar cube, coffee and zalacca craftsmen, consists of three stages, namely the first stage is the identification of production process activities, identification of expenses of all activities that incur costs and identification of the determination of the exact unit of expenditure cost. Stage two is calculating the amount of expenditure for each cost from each production activity that has been identified. The third stage is to calculate the cost of production by adding up all expenses from all stages, calculating the gross profit of the business by subtracting revenue from the cost of production and finally calculating the net profit by subtracting the gross profit of the business by the total marketing costs.
2. The information generated by this model, namely information on setting labor costs, overhead costs and depreciation costs, will be very useful for businesses to make decisions regarding the amount of labor needed and policies to use production assets effectively and efficiently. Besides that, the cost of production information is very useful for businesses to determine what level of production will be carried out and what is the desired profit target.

The suggestions that researchers can give to small and medium business actors are as follows:

1. Provide one person in charge of being bookkeeping staff especially for businesses that have more than 10 employees.
2. Using computer information technology assistance in financial opening activities and preparing financial statements
3. Form a joint cooperative as a way to avoid selling products to collectors, so that they get a better selling price.

### **Acknowledgment**

This research is limited to Magelang district, so the results of this study cannot be generalized in all other places or locations. This is because it involves the time and funding of researchers, for other researchers who will take the same theme, it can compare the results of this study with different research locations.

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