

Business Analysis of Bamboo Processed Satay Skewers Production

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Abstract

Skewers as a means of serving food such as beef satay, skewers of fruit and other foods, originally the skewers by hand with results that are not optimal and the quality is not meet to penetrate the market of middle and upper class, then the process of making skewer this developed using semi-automatic machines to guarantee that more optimal results and the quality of marketable products among middle and upper. The products are based on a bamboo tree in its development has a promising business prospects with supports availability of raw materials which are still abundant in Indonesia. This type of business can be run if the place of business close to sources of raw materials. The analytical method used is the calculation of the cost of engine components, component production and production runs that can be in the know the payback period by dividing the cost of the machine components with annual cash flow as a basis for decision making. Further analysis showed payback period is 0.37 years, or about 4.5 months.

Keywords

Business Analysis, Bamboo, Produce Skewers, Satay Skewers Machine.

1. Introduction

Bamboo is known as non-wood forest products utilization longstanding. Utilization of conventional bamboo, among others for agriculture, animal husbandry, fishery, appliances, household construction of a simple house, a bridge in the countryside, to crafts. "While the use of more modern inter alia for paper, toothpicks, skewer, chopstick, bamboo lamina, particle board, and charcoal (Khotimah and Sutiono, 2014)."

The development of the bamboo industry nationally competitive and sustainable need to be supported by the material supply raw-assured in terms of volume, quality, and sustainability in the long term (availability, quality, and continuity of supply). Hence it is very necessary to build bamboo stands with bamboo types of high economic value and in accordance with a place to grow. Availability of bamboo with a good quality can support the development of processing industry of bamboo products of high value and provide economic benefits for farmers and society with foreign countries (Khotimah and Sutiono, 2014).

Skewer as a means of serving food such as beef satay, skewers of fruit and other foods, originally the skewers by hand with results that are not optimal and the quality is not meet to penetrate the market of middle and upper class, then the process of making a skewer was developed with using a semi-automatic machines to guarantee that more optimal results and the quality of marketable products among middle and upper. The products are based on a bamboo tree in its development has a promising business prospects with supports availability of raw materials which are still abundant in Indonesia (Puspitasari and Hartanti, 2017). This type of business can be run if the place of business close to sources of raw materials.

Availability of raw materials that are scattered throughout the region Indonesia allows this business can be run throughout the territory of Indonesia as well, especially for rural areas, especially outside Java island because of the need skewer outside java island area is still high and is not offset by the availability of products (Muthmainnah, 2017). From the survey to business actors on the demand needs of the skewers until now they are still very far from the target achievement of the results, with the achievements of their results between 2-3 tons per month. Of opportunity is what makes the business prospects of making skewer is still very promising (Eko, 2012).

Thus the previous production system is still manual can be replaced with a semi-automated process, while the needs of the skewer making machines consists of cutting machines, printing machines, smoothing machines, sharpening machines and generators (Prasnowo, 2012).

2. Method

In this study the data obtained from observations and interviews directly to practitioners making machinery, skewer production employees, business owners and sellers skewer skewers. Implemented in the area of Sidoarjo and Surabaya.

The analytical method used is the calculation of the cost of engine components, component production and production runs that can be in the know the payback period by dividing the cost of the machine components with annual cash flow as a basis for decision making (Grant et al., 1987; Pujawan, 2004).

3. Result And Discussions

3.1 Producing Skewer

Here can be drawn for the flow of the working process of making skewer using the machine, it can be seen in Figure 1.

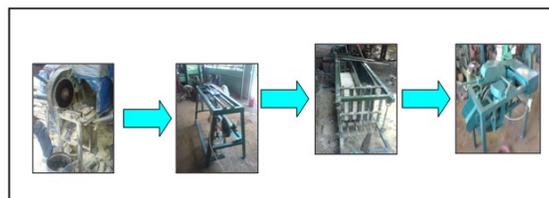


Figure 1. Process of making the product skewers.

The explanation of the process of making a skewer with the machine as follows:

- [1]. The first step is the process of cutting raw materials such as bamboo lonjoran into the desired size, for example: bamboo original length of 10 m will be made pieces with a size of 20 cm. After the bamboo is cut according to the size requested then bamboo split into two equal parts. At this stage the operator is required at least 2 people.
- [2]. The second step is the printing process bamboo into sticks (skewers semi-finished), bamboo has been split into two equal parts and then parts of bamboo printed. By (1) the engine (2) putting bamboo over the kitchen machine (3) bamboo has tecetak into round sticks (skewers semi-finished). At this stage the operator takes one person.
- [3]. The third step is the process of drying and curing, semi-finished raw materials skewer sticks in dry form, so the next step sticks can be processed using the machine. Sticks drying process can be done in a natural way or by machine, the natural way is to stick a direct drying under the sun until completely dry sticks. Or by dried with a dryer. After drying skewers semi-finished preserved mushrooms that are not easily come out with a way to do fumigation using sulfur for one day.
- [4]. The fourth step is the process of smoothing the polish or stick. Raw materials sticks after being dried and then polish in order to see the skewers can be smooth, by way of semi-finished skewer inserted into the machine polish and polishing performed for about 4 hours with a given paraffin powder as the final polish step. At this stage the operator takes one person.

- [5]. The fifth step is the process of sharpening the skewers semi-finished, by putting the skewers semi-finished to tanks located on the machine, and the machine will run automatically. Tank capacity of approximately 1,5 kg. Operators only work put sticks into reservoirs. At this stage the operator takes one person.

3.2 Skewer Machine

From the stages of the process above is known that there are several machines used to make skewers, among others:

- [1]. Cut machine, cutting machine function is to cut bamboo in accordance with the length of skewers needed, usually long skewers sold market between 20-30 cm. This machine operating system to use a knife disc, and on the length of the size of this machine is given a reference standard so that ease in cutting and avoid mistakes size. This cutting machine has dimensions of length, width and height of 50 x 50 x 90 cm and are shown in Figure 2.



Figure 2. Bamboo cut-off machine.

- [2]. Rod achine, at this stage serves as a rod press machine made of sticks skewers remedy this results in a long round bamboo diameter according to demand and diameter are many in the market is 2.5-3 mm (Agus, 2013; Pratama, 2015; Suseno, 2015). This machine uses a working system at the system, using a sliding connected to the crankshaft , and there is a corresponding blade diameter desired printer. Print engine capacity of 200 kg per day. Dimensional printing machine is 100 x 70 x 90 cm. and is shown in Figure 3.



Figure 3. Bamboo rod machine.

- [3]. Polish Machine or smoothing function to smooth the surface of the fibers stick fine print, because if not done refining the quality of the skewers will be ugly and can not be processed on sharpening machines. Polish machine has a capacity of 200 kg per day and can be increased by adding polishnya cabin. These machines work system uses the crankshaft. Polish machine dimensions are 120 x 60 x 50 cm. And are shown in Figure 4.



Figure 4. Bamboo polish machine.

[4]. Sharpening machines used to form runcingan at one end of the skewer. Which serves to facilitate plugging the meat. The working system is semi-automatic machine so that the operator simply laid and then take it. Daily capacity of sharpening machines is 200 kg per day. Sharpening machines dimensions are 110 x 60 x 100 cm and is shown in Figure 5.



Figure 5. Sharpening machine.

[5]. Generator is used as a producer of electricity, the electricity needs of all four engines ranged from 12000 Watts. So it takes about 24 PK diesel propulsion. And with the needs of diesel per day on average 50 liters.

As an illustration of the performance comparison of the use of a skewer machine, from the aspects (type of machine, worker needs and raw material requirements) can be seen in Figure 5 below.

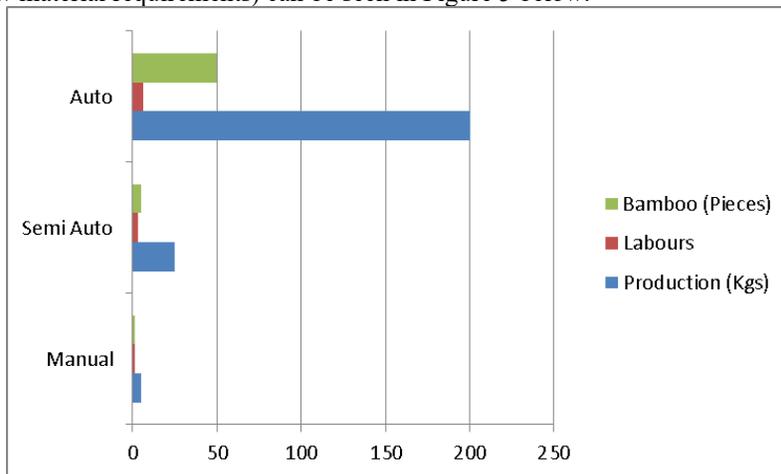


Figure 5. Machine usage comparison chart

3.3 Market Analysis

Market outlook skewer products spread throughout the Indonesian region even able to penetrate the export market, due to the selling price very able to compete at Rp. 8000 / Kg and quality that can compete well with imported products. Thus skewers product can later be said to dominate the market with a good marketing road course.

3.4 Estimated Cost

Calculation of costs for equipment components and cost requirements of production per month can be shown in Table 1 and Table 2. Table 1 describes the types of machine requirements for producing skewers along with the price value for calculating the machine capital cost (Cut-off machine, Rod machine, Polish machine, Sharpening machine, Generators).

Table 1. Need for the equipment/machinery.

No	Descriptions	Unit	Price	Total
1	Cut-off machine	1	Rp 8.000.000	Rp 8.000.000
2	Rod machine	1	Rp 17.000.000	Rp 17.000.000
3	Polish machine	1	Rp 15.000.000	Rp 15.000.000
4	Sharpening machine	1	Rp 25.000.000	Rp 25.000.000
5	Generators	1	Rp 15.000.000	Rp 15.000.000
	Total			Rp 80.000.000

Table 2. Needs cost of production per month.

No	Descriptions	Unit	Price	Total
1	Bamboos	1200	Rp 8.000	Rp 9.600.000
2	labors	4	Rp 30.000	Rp 3.600.000
3	Oils	50	Rp 4.500	Rp 6.750.000
4	Pakcing	2	Rp 2.000	Rp 120.000
5	Others	-	-	Rp 5.000.000
	Total			Rp 25.070.000

To find out how the capital will return will be made to calculation of the payback period analysis, with the following details can be shown in Table 3:

Table 3. Needs cost of production per month.

Outcome first month	
machinary	Rp. 80.000.000,-
Monthly Operational	Rp. 25.070.000,-
Income	
Sales per month at 5200 kg	Rp. 41.600.000,-
Sales scrap monthly	Rp. 1.500.000,-
Total	Rp. 43.100.000,-
cash flow monthly	Rp. 18.030.000,-
Annual cash flow	Rp. 216.360.000,-

So the analysis of the payback period is 0.37 years, or about 4.5 months. Results are calculated by the ratio between the cost of the machine with cash flow per year. Total expenditures moon So I is Rp. 105.070 000, - further sisebut as initial capital.

4. Conclusions

Based on the calculation of business analysis, bamboo is a promising commodity business opportunity, this can be

seen from the cost of procuring the needs of machine components which are relatively affordable, easy to apply, the need for equipment and machines consists of 5 units to be able to carry out the skewer production process. The results of the operational analysis of the payback period of 4.5 months. Hopefully the research that has been done can be a reference for prospective entrepreneurs and the community to maximize the potential of bamboo commodity. in this study using standard oil prices before experiencing an increase so that the analysis may change when the oil price has increased 2 times with an estimated payback period of 1 year.

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Biographies

M Adhi Prasnowo has been recorded as an associate of open access journal (DOAJ), also as an assessor of the National Certification Body (BNSP) professional certification body, as a reviewer of reputable indexed international journal (SCOPUS). pursue a career as a lecturer in the industrial engineering study program and hold the position of sub-directorate of student affairs, vice chairman of research and community service institutions, and as vice chancellor for student affairs.

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