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Assistance in Increasing Productivity and Competitiveness in UMKM Adi Jaya Bumiayu

Siti Badiatul Umroh*[1], Sutarmin[2]
[1,2,]Universitas Peradaban
E-mail: bhadia29@gmail.com[1], sutarmin74@gmail.com[2]

Abstract

MSMEs have an important role in supporting Indonesia's national economy so that support for renewing the productivity and competitiveness of MSMEs is needed. This activity was carried out with the aim of increasing the productivity and competitiveness of Bakpao Adi Jaya products located in Bumiayu District, Brebes Regency. The first step taken in increasing productivity is to analyze the partner's production flow to find sources of inefficiency from production activities which will then be renewed by implementing a lean production system. Results indicated that improvements to the production process increased the efficiency of total production time. Thus, the elimination of waste activities in the production flow resulted in an increase in partner productivity.

Keywords: Lean Production, Productivity, UMKM

1. INTRODUCTION

Micro, Small and Medium Enterprises or commonly abbreviated as MSMEs, have an important role in supporting Indonesia's national economy. Based on data from the Ministry of Cooperatives, Small and Medium Enterprises (KUKM), most of the total number of Indonesian business actors consist of micro, small and medium enterprises, which amounted to 64.2 million or 99.99% of the total number of business actors in Indonesia in 2018.

The food and beverage industry is projected to remain one of the mainstay sectors supporting the manufacturing sector and the national economy. The important role of this strategic sector can be seen from its consistent and significant contribution to the Gross Domestic Product (GDP) of the non-oil and gas industry and increased investment realization. For this reason, the government is trying to ensure the availability of raw materials needed by the food and beverage industry to be more productive and globally competitive. Moreover, this sector is based on added value so that the downstream process needs to be guaranteed. In addition, the national food and beverage industry is increasingly competitive because there are quite a lot of them, not only including large-scale companies, but also small and medium-scale industries (SMEs). Even Micro, Small and Medium Enterprises (MSMEs) (Nurmala, 2022).

Bumiayu is one of the sub-districts located in the Brebes Regency area, where Brebes Regency is very strong economically in the agricultural sector. This can be seen from the contribution of the agricultural sector to the total GRDP of Brebes Regency which is very dominant, amounting to 37.38 percent (Badan Pusat Statistik Kabupaten Brebes, 2021). In 2022, this business field contributed to the GRDP of Brebes Regency at current prices of 9.67 trillion rupiah. This figure accounts for around 17.99 percent of the total GRDP of the regency. The food and beverage industry subcategory is the largest contributor to Brebes Regency's GRDP in this business field. Nominally, the processing industry increased by IDR 1.08 trillion, from IDR 8.59 trillion in 2021 to IDR 9.67 trillion in 2022. Although its growth has fluctuated in the last five years, its growth has tended to strengthen after the Covid-19 pandemic. In 2022, the growth rate of the processing industry was 7.36 percent or stronger than in 2021, which only reached 4.86 percent. (Brebes.Kab, 2022)

Adi Jaya Bumiayu partners have been engaged in the Food and Beverage Industry MSMEs since 2016 with its flagship product being Bakpao and based in Bumiayu, Brebes Regency. In the midst of the growth of the Bumiayu Food and Beverage Industry, the Bakpao business is still experiencing some challenges of its own and like 56% of other MSMEs, partners have not escaped the huge impact of the Covid-19 pandemic that has hit Indonesia where partners have seen a significant decrease in turnover due to the loss of the business target market which is dominated by school children. However, when the pandemic has subsided, public consumption interest has recovered and currently there are 8 people marketing by traveling to schools or villages.

In general, the partner's problems in this service guidance are in terms of productivity and partner competitiveness. Partners said that the productivity situation was not very good so they needed to analyze the flow of the current production process. One activity that is still inefficient is the activity of molding dough. in this activity, partners must form round dough like a bun shape one by one by hand which takes a very long time and this has the potential to produce inconsistent bun size results, if after the steaming process the resulting size is too small then the buns are included in the failed product or cannot be sold. in 1 day usually produces 8kg of dough using 45kg of wheat flour, but because the results of manual molding of the dough produce an inconsistent number of products, the number of finished products becomes inconsistent, sometimes producing 300 or 280 buns. In 1 day, the company usually produces 8kg of dough using 45kg of wheat flour as raw material, but because the manual molding of the dough results in an inconsistent number of products, the number of finished products is inconsistent, sometimes producing 300 or 280 of products.

Another activity is steaming. The steaming place is still simple, namely using a *tampah* mat, and there is often a tilted position during the steaming process, if the position is not stable, it will affect the maturation process and the size of the buns becomes smaller. This activity has great potential to be improved and managed further so that partners can cut production time so that it is more effective and there is less waste due to potential product failure.

Increasing productivity is one of the important things to be achieved by a business or company because it provides a positive feedback on business performance (Ismail, 2020). One of the efforts to increase productivity is by implementing lean production, which is a management system that focuses on eliminating waste and continuously improving business operations (Russell & Taylor, 2019). Increasing productivity is one of the important things to be achieved by a business or company because it provides a positive feedback on business performance (Ismail, 2020). One of the efforts to increase productivity is by implementing lean production, which is a management system that focuses on eliminating waste and continuously improving business operations (Russell & Taylor, 2019).

The use of lean production systems starts with the elimination of waste, which means anything that does not add value to the final product. There are 7 activities that are classified as waste, namely overproduction, waiting, unnecessary movement of goods, activity steps that do not add value, storage of goods or inventory, excessive movement activities, and defects in production results (Russell & Taylor, 2019). Waste identification and improvement in the production flow of buns is carried out by referring to the process activity mapping technique (Hines & Rich, 1997).

In terms of competitiveness, partners need to develop more innovative products considering the emergence of various types of food and drinks that are fairly trendy in the bumiayu area such as the emergence of Roti, and various other types of contemporary food making traditional buns need to improve their innovation in order to remain highly competitive.

The service program will include a critical analysis of the partner's production activity flow and updates to the production flow to increase partner productivity in terms of time and quality. Increased competitiveness lies in one of the competitiveness strategies and

visualization of partner business innovation. This Community Service or PKM activity aims to improve the productivity performance and competitiveness of Adi Jaya Bumiayu MSMEs in the hope that it can help partners develop business and increase competition.

2. METHOD

Mentoring activities for small and medium business actors are carried out directly and online through interview and discussion activities. the mentoring method carried out is broadly divided into the following 3 stages:

Table 1. Method of Service Implementation

Stage	Objective	Method
Pre Implementation (Observation of Bakpao Bumiayu business)	Understand the production process of bakpao bumiayu	• Primary Survey: Interview • Reviewing literature and secondary data
Partner mentoring (strategy analysis and implementation process)	Formulate the problem and its solution	• Live and virtual mentoring
Evaluation and recommendations	Measuring the success indicators	• Reviewing literature and secondary data

3. RESULT AND DISCUSSION

Based on lean production theory, the first effort that needs to be made to increase partner productivity is to eliminate the existence of waste activities in the production flow. In order to achieve a lean production system, 3 stages will be carried out to implement the 5 steps of process activity mapping (Hines & Rich, 1997) which was chosen as a reference in terms of waste identification and renewal in the production flow of Bakpao Bumiayu.

Pre Implementation
Study the flow of the production process

The production process of Bakpao Adi Jaya Bumiayu has 11 production steps that take 4 hours and 6 minutes. where the production flow starts with preparing several ingredients and containers for making buns until the buns are ready to be marketed.

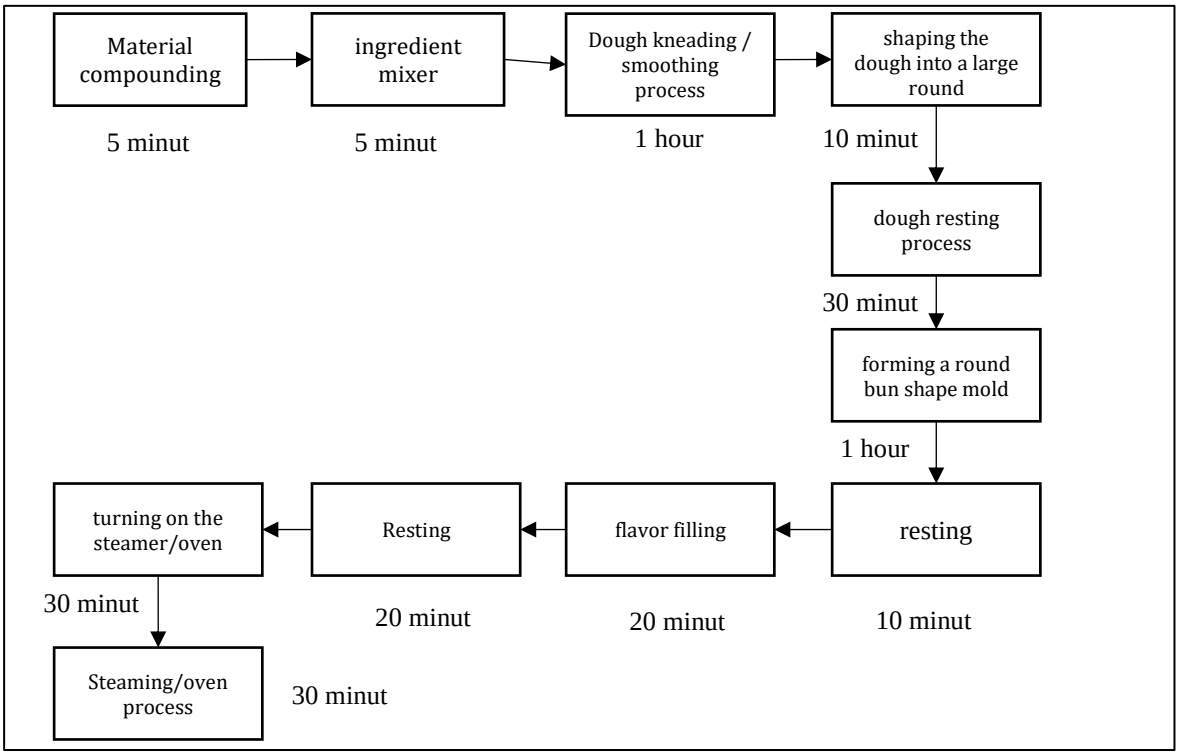

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Figure 1. *Production flow before efficiency*

Implementation

Identifying Waste

After analyzing the partner's production flow, 4 types of waste activities or activities that do not have added value were found. The first waste activity is the length of time waiting to do the next process, for example in the ulen process/making the dough smooth takes 1 hour because the process is still manual. The second waste activity is the waiting time for heating the oven until the desired temperature reaches 30 minutes, this activity can actually be eliminated by setting the time so that when the buns are ready, steaming can be done immediately.

Another activity that includes waste is the printing process which takes 1 hour because it is done manually, this needs technological development so that production time can be more optimal and efficient, another drawback if using manual printing is a non-uniform shape that allows the occurrence of products with a size that is too small so that the product is a defective product and cannot be sold. Defective products are one of the waste activities in lean production.

Figure 2. *Manual printer*

The fourth activity included in the waste activity is the storage place when the bun products are finished, which is still using ordinary wooden shelves covered with plastic, the weakness of this storage place is that the bun products are susceptible to contamination with outside air, making the buns shrink and shrink, eventually entering defective products.

Figure 3: *Old storage rack*

Consideration of whether flowcharting can be more efficient

After a good discussion with the partners, the arrangement of the production flow can be improved to be more efficient with a new layout (Figure 4), and updates are made especially on production activities that adhere to waste as described in step 4.

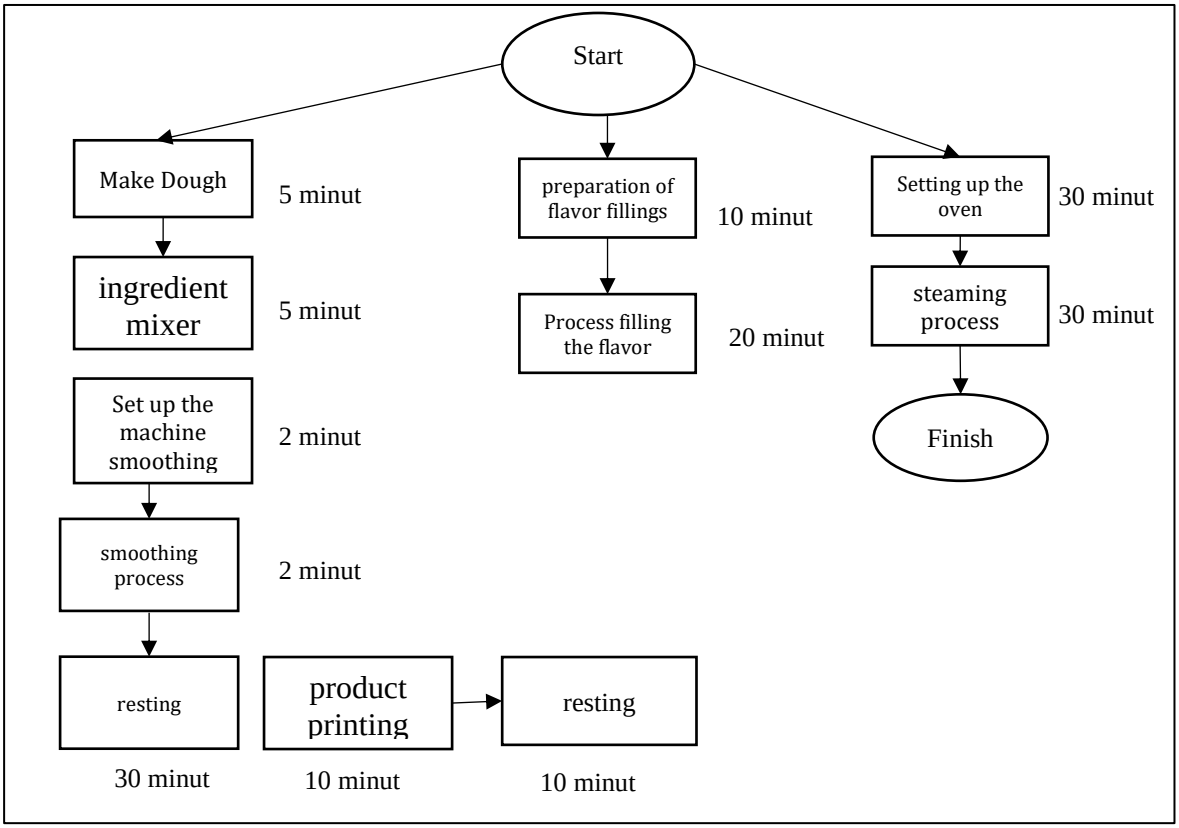

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Figure 4. Production Flow After Efficiency

Consideration of Flow Patterns Involving Different Layouts

The layout and sequence of the production line were changed in order to increase the efficiency of production time. Renewal of the partner's production flow begins with separating the activities of making dough, preparing flavor fillings and setting up the oven, this is to reduce waiting time which causes the production process to be longer. Furthermore, the implementation of flavor preparation activities can be done while the bun molds are resting, and starting to prepare the oven which takes 30 minutes can be started at the same time as preparing the flavor filling.

The duration of production time has also changed by changing the method of the ulenan / smoothing process which was originally done manually by hand which takes 1 hour, if technological development is carried out using a machine the dough smoothing process only takes 2 minutes, as well as forming a round bun mold which originally used manual hands if done using a machine then the time needed shrinks by 50 minutes which only takes 10 minutes of molding, besides that it also minimizes the different sizes that result in product defects. Thus partners can save production duration by reducing the waiting time experienced if the production flow is carried out in stages or sequentially. the time savings that occur in the new layout is for 2 hours.

Evaluation

Consideration of Renewal Needs

In updating the production flow, it is necessary to purchase several production tools and equipment, namely (1) dough kneading and smoothing machine (2) bun molding machine (3) closed stainless storage rack.

Based on these activities, an efficiency or time reduction is obtained due to the elimination and renewal of Waste activities. The total efficiency in production time can be seen by comparing the new production layout in the period before and after the efficiency of waste activities. In the production flow before efficiency, the total production time required by partners is 4 Hours 6 Minutes. While in the production flow arrangement after the elimination and renewal of waste activities, the total time for partners to produce Bakpao is only 2 hours 6 minutes (Figure 4). The improvements made were able to reduce the time in the production flow for 2 hours due to the elimination of waste activities. Based on the analysis of the production process at UMKM Adi Jaya Bumiayu using 5 steps of process activity mapping, a reduction in production time of 2 hours was obtained.

4. CONCLUSION

Increasing partner productivity by implementing a lean production system and a new production layout yielded satisfactory results. The application of the new layout was more efficient and resulted in a time reduction of 2 hours and 6 minutes. The elimination and renewal of product molding, dough kneading or smoothing and storage activities had a good impact on partner productivity.

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