

## **Productivity Issues as Growth Barriers in Coffee Production and Sales at Panti Karya Salib Putih: Value Chain Analysis**

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**ABSTRACT:** *The purpose of this study is to identify productivity problems at Panti Karya Salib Putih, using a value chain approach. Based on the problems that have been analyzed, then followed up with recommendations to increase the productivity of the coffee business at Panti Karya Salib Putih. The results of the analysis using the value chain approach in increasing the productivity of coffee processing show that almost every problem in the value chain components is found both of main activity and supporting activities. Based on the analysis the recommendations for Panti Karya to improve the productivity of the coffee business are as follows: conducting soil analysis, fertilizing and stimulating substances, increasing the number of plants and rejuvenating coffee plants. It is also necessary to sort coffee beans after peeling to increase the business value. Another step that needs to be done is the use of a modern machinery that can make roasting process optimum and it is necessary to consider the time lapse between the grinding coffee beans and packaging. In terms of marketing, with the improvement of the processing of coffee products, Another thing to note is that it is necessary for Panti Karya Salib Putih to design a more refined packaging and more attractive logo and begin to market their product through online sales.*

**KEYWORD:** *Productivity, Value Chain Analysis*

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### **I. INTRODUCTION AND LITERATURE REVIEW**

The problem of homeless people and beggars (also known as Gepeng) is a social phenomenon that can not be avoided in the life of the community, especially those in urban areas. One that influences the development of this problem is poverty. The problem of poverty in Indonesia has a negative impact on the increasing flow of urbanization from rural areas to big cities, resulting in population density and slums area that become urban people settlements. Difficult and limited job opportunities available, as well as limited knowledge and skills, cause many to make a living to survive by being forced to become homeless and beggars (Ari, 2014).

Central Java Province has challenges related to social problems. People with social problems in Central Java Province reached 6,090,369 people (Prasetyo, 2012). This number is 18% of the population in Central Java, with the largest proportion being beggars, as much as 5,146,267 people or 15.34%. Besides beggars, unemployment is also a social problem that needs to be addressed in Central Java Province. According to data from the Central Bureau of Statistics (2019), unemployment in Central Java over the past 3 years has reached more than 4% of the population, which are 4.15% in 2017, 4.23% in 2018 and 4.22% in 2018.

One of the steps taken by both the government and private sector in Indonesia is to train the unemployed to be valuable in the community, one of them is through the Bina Karya Social Institution. Bina Karya is a social home that has the task of providing social services and rehabilitation for homeless people, beggars, and exiled people to be able to be independent and play an active role in community life. According to the Regulation of the Minister of Social Affairs of the Republic of Indonesia No 106/HUK/2009 Concerning the Organization and Work Procedures of Social Institutions within the Ministry of Social Affairs, Bina Karya has the task of providing curative, rehabilitative, promotive social services in the form of counseling and guidance on basic education knowledge, physical, mental, social, training new skills, resocialization on further guidance for homeless people, beggars and exiled people to be able to be independent and play an active role in community life. Bina Karya is also responsible to research and prepare standard service and provide referrals.

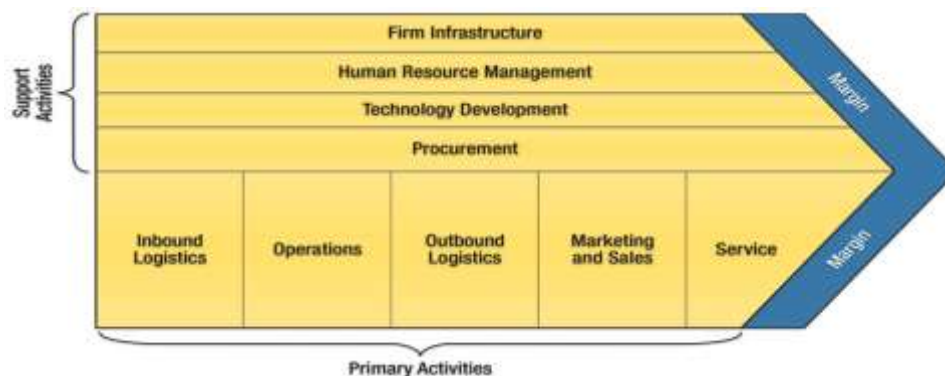
One of Bina Karya social homes is Panti Karya Salib Putih (White Cross). Panti Karya Salib Putih is an institution that accommodates people of productive age (25-60) who are unable to work in competitive organizations or institutions. For example, residents who are mentally disturbed but in their productive age, the social house is willing to accept by being given a simple shelter, giving simple dishes with guidance to work in a coffee plantation. There are 12 families who live together with their families as 'Kalayan' (Kalayan = the term

used to describe people who works at social home). To meet their needs, the manager runs a coffee business, from production to the sale of ground coffee. During this time Panti Karya management team, assisted by around 12 'kalayan', manage coffee plantation and operation, from generation to generation, to produce, harvest coffee beans, producing 482.75 kg/ha, with 4 hectares of arable land. After harvesting, conventionally dried and milled, then packaged and sold door to door. Kalayan workers are above 45 years old and are not as productive as other worker. The business is run simply and management records were also simple.

The problem is the low productivity of coffee. Productivity is a term in production activities as a comparison between outputs and inputs. According to Herjanto (2007), productivity is a measurement that states how well resources are managed and utilized to achieve optimal results. Productivity can be used as a benchmark for the success of an industry or processing. Productivity at the Panti Karya Salib Putih is only 482 kg/ha, coffee processing is still simple, inefficient and unproductive, limited business management skills and marketing skills, still relies on local and simple markets. The low productivity of ground coffee can not be separated from the condition of the processing equipment. Currently, the manager uses a loan from PT. Mekek Rumecko, it is just that the tool is less than optimal because there is no temperature regulator. Consequently, the roasting results often do not meet the expected quality, quantity, and continuity of ground coffee. Manager hopes to have their own roasting equipment to maximize the results and to be able to roast coffee beans at any time.

Productivity at an Panti Karya is interesting because there is a conflict of interest, namely that a social home has a social purpose but also has productivity demands. Therefore, this study will identify and answer various challenges in increasing the productivity of the coffee business at the Panti Karya Salib Putih. One method that is often used in identifying problems in the context of developing a product's productivity is the value chain approach. This value chain approach can identify interventions that focus on problems and strengths in the entire chain, from providing inputs to outputs to consumers (upstream to downstream). Value chain analysis is a tool developed by Michael Porter that is useful in the formulation of a company's competitive advantage through testing the production process and its supporting processes. Kaplinsky and Morris (2001) define the value chain as all related activities in the creation of a product or service from raw materials to the hands of consumers, including after-sales service. Furthermore, Hansen and Mowen (2002) explain that value chains are used to identify and link various strategic activities in companies, where the nature of value chains between industries differs depending on the type of industry observed.

Porter (1985) stated that value chain analysis is a strategic tool used to understand and analyze the competitive advantage of a business through identification activities in what activities can increase customer value or reduce costs and understand the company's relationship with suppliers, customers and other companies in an industry. Porter (1985) explained that value chain analysis divides businesses into two groups of activities namely primary activities and secondary/support activities, as presented in the following figure.



Source: Porter (1985)

**Figure 1. Nilai Generik Porter's Generic Value Chain Framework**

The main activities are activities related to physical product creation, marketing and transfer to consumers, as well as after-sales services. Supporting activities are activities that support the company as a whole in relation to providing infrastructure or inputs that enable key activities to be carried out sustainably. According to Porter (1985), the main activities consist of (1) Inbound Logistics, that is all activities related to receiving, storing and distributing inputs/raw materials, as well as relationships with suppliers. (2) Operations, i.e. all activities needed to transform inputs/raw materials into outputs (products/services) (3) Outbound Logistics, specifically all activities needed to collect, store and distribute outputs (products/services) (4) Marketing and Sales are all activities aimed at influencing potential potential buyers regarding products/services so that they buy them and facilitating the process of purchasing these potential buyers (5) Services include all

activities required for products/services that have been purchased by consumers to continue to function properly. This activity aims to improve and maintain the value of products/services.

Supporting activities in the value chain analysis are broken down into four categories which include (1) Firm Infrastructure consisting of infrastructure activities needed to support company performance such as accounting, law, finance, planning, quality management and general management (2) Human Resource Management covers all activities involving the recruitment and termination of workforce, determination of wages and compensation, management, training and development of human resources (3) Technology Development are all activities concerning hardware, software, procedures and technical knowledge used in the process of transforming inputs / raw materials being output in a company and (4) Procurement is the procurement of various inputs or resources for a company. Pearce and Robinson (2008) state that in general value chain analysis consists of three stages, namely (1) Identification of value chain activities, in this stage identification of value chain activities carried out by companies in the design, manufacturing, and service to customers (2) Identification of cost drivers in each value chain, this stage aims to identify which activities provide cost advantages for companies both at present and potential cost advantages and (3) Develop competitive advantages by reducing costs or adding value. At this stage, the company determines the nature of current and potential competitive advantages based on an analysis of value activities and cost drivers.

## **1.2 Research Objectives**

The purpose of this study is to identify productivity problems at Panti Karya Salib Putih, using a value chain approach. Based on the problems that have been analyzed, then followed up with recommendations to increase the productivity of the coffee business at Panti Karya Salib Putih.

## **1.3 Research Methodology and Data Analysis**

This study uses primary data that is data about the core processes in the coffee business value chain which are carried out through in-depth interviews with informants and direct observation. The interview material uses a component guide from the value chain analysis consisting of Primary Activities and Supporting Activities. The main activities consist of (1) Inbound Logistics (2) Operations (3) Outbound Logistics (4) Marketing and Sales and (5) Services. Supporting activities in value chain analysis are broken down into four categories which include (1) Firm Infrastructure (2) Human Resource Management (3) Technology Development and (4) Procurement. The stages of analysis that will be carried out in this study will be carried out in four stages, namely (1) the stage of photographing the condition of the Panti Karya Salib Putih business both for main activities and supporting activities, (2) analyzing the problems that occur and (3) providing recommendations for the problems.

### **1.3.1 Overview of Panti Karya Salib Putih**

Panti Karya Salib Putih is a social foundation located in Salatiga City. The birth of the Salib Putih Foundation began because of a natural disaster, the eruption of Kelud volcano in East Java at the end of 1901. About 300 people from surrounding villages fled to arrive and gather in the Salatiga town square (now Salatiga Pancasila field). Seeing the condition of the refugees who began to weaken, moved the hearts of a married couple A Th J van Emmerick and Alice Cleverly to provide help. Eventually, they were accommodated and cared for temporarily at the van Emmerick's family home in Salatiga. This family then was assisted by the refugees, opened up land, set up shelter barracks independently and began to occupy it on May 14, 1902. This was the beginning of the founding of the Salib Putih Foundation. The name of the Salib Putih itself is a translation of the name of the association founded by van Emmerick's family (White Cross), Witte Kruis Kolonie (WKK). Van Emmerik named the association he built based on the discovery of the white marble in the shape of a cross when clearing out the land.

In its growth, the land to accommodate refugees and victims of the social situation at that time expanded because of land grants from a district officer and the purchase of van Emmerick's family land from the surrounding population. This land is well managed for routine needs and built various infrastructure facilities for services. Until 1930, the Salib Putih Foundation treated more than 1200 people.

The Salib Putih Foundation operates based on the teaching that as fellow creatures, humans have a social responsibility to be able to help each other and empower those who need support so that they can lift their dignity amid people's lives. The foundation also has the responsibility to carry out its functions in society by taking on the role of social institutions to uplift the dignity of people who "lose" their dignity. Salib Putih Foundation is a concrete manifestation of the responsibility of service to God who has provided love and salvation through sacrifice and our responsibility to suffering sufferers in which all forms of service are based on sincerity and purity of heart.

The vision of Salib Putih Foundation is to manifest God's love for humans for the sake of human safety as a whole. While its mission is to provide services to displaced people by providing care, education, and

assistance, to become dignified human beings who live as a whole, deserve and full of hope. From this vision and mission, the Salib Putih Foundation organizes social service activities and programs in the form of an orphanage for abandoned children, a social home for unproductive people, a nursing home for unkempt elderly people and a medical center for public health services

At the moment, the Panti KaryaSalib Putih accommodates people of productive age (25-60) who are unable to work in competitive organizations or institutions. The current yield of coffee production is 482.75 kg/ha or in a total of 1971 kg per year. According to Manalu (2019), coffee production in Indonesia should reach 3 tons per quintal. So that coffee productivity at Panti KaryaSalib Putih is still very limited at only 16.1 of normal productivity.

### 1.3.2 Analysis of Panti Karya Coffee Business using Value Chain Approach

Value chain analysis divides the business into two groups of activities namely primary activities (Primary Activities) and secondary/support activities. Inbound Logistics which is the first factor of Primary activities at the Panti KaryaSalib Putih has rather unique characteristics due to inputs raw materials obtained through agricultural products that are produced by themselves. However, the results of the raw materials obtained were not as expected due to unfavorable soil conditions and the condition of the coffee plant which was not optimal. Therefore, to improve inbound logistics, four stages are recommended, that are conducting soil analysis, fertilizing and stimulating substances, increasing the number of plants and rejuvenating coffee plants. The initial step is to do a soil analysis. Soil analysis is the best way to evaluate soil fertility and other properties. The first step taken is to do soil sampling. Soil sampling is the most important phase in soil analysis activities because inaccurate soil sampling can produce analysis figures that deviate from actual conditions. Based on the results of soil analysis from laboratory testing, the selection of appropriate fertilization techniques is carried out. Giving fertilizer is an absolute action in cultivating a plant. Fertilizers are a source of nutrition for plants that provide organic and inorganic materials to support their growth. How to fertilize is done by making a circular trench around 10 cm deep, with the distance of the canopy project (approximately 1 m). Or, make a hole in a circle (in the disk around the base of the stem), determine and drill the points/holes for placement of fertilizer in the direction of the four cardinal points (4 points or up to 8 points).

In addition to providing fertilizer, growth stimulants are also given. Growth Regulatory Substances (PGR) have a very important role in plant growth and development. Plant Growth Regulators or plant hormones (phytohormones) are organic compounds that are not nutrient, ZPT in small amounts can stimulate, inhibit and can change the physiological processes of plants.

In addition to improving soil quality, improvements are also made to the quality and quantity of coffee plants to achieve maximum results. Based on observations, some coffee plants are old plants, so it is necessary to rejuvenate the coffee plant. As coffee plants grow more and more, these plants are no longer productive. Older coffee plants are also more susceptible to pests and diseases. As a result, the level of productivity of coffee was very low. It also can be done by selecting superior coffee plant varieties. Until now, coffee seeds from superior varieties have proven to have a much higher level of productivity even though the price is more expensive. In the community service activity at Panti KaryaSalib Putih, 250 new trees were planted. This new tree planting is expected to increase the productivity of the coffee plant.

In addition to planting new trees, rejuvenation of the coffee plant is carried out by pruning. Pruning is done by removing unnecessary back branches that grow on primary branches, pruning old branches that are not needed, pruning the shoots when they are still small, pruning branches that are attacked by pests/diseases. This pruning will spur the growth of flowers and fruit. By pruning, it is expected that coffee plants can be harvested every month, production increases, quality is better, productive age is longer and maintenance is easier.

While in **Operations**, all activities needed to transform inputs / raw materials into outputs (products/services) at Panti Karya Salib Putih are carried out through eight stages, the after harvest process



**Figure 2. Ground Coffee Production Stages**

After the coffee bean is harvested, the next step is to sort the coffee bean. This sorting aims to separate beans from dirt, diseased bean, and defective bean. Next is the drying of coffee fruit with a thickness of no more than 4 cm. The next step is the dried fruit ready to be peeled and the skin of the horn. Stripping is done by using a huller machine. Coffee beans that have been peeled are then roasting or cooking coffee beans and after roasting the coffee beans are ready to be grinded and then packaged.

The problem identified at Panti KaryaSalib Putih is in the process of sorting coffee beans after peeling. The practice is not to sort the seeds that are good or not good. The current condition shows that coffee beans in the Panti Karya that have not been sorted have a "premium" grade while if sorting is done it will be included in



the 'limited' grade. At Panti Karya Salib Putih with 'premium' grade, if sorting is done, 85% will be included in the 'limited' grade. Prices between premium and limited grades differ significantly at Rp 35,000 for premium grade and Rp 60,000 for the limited grade. Therefore it is necessary to sort the beans after peeling to increase the business value.

Another problem identified was during the roasting process, which only uses manual equipment so that the maturity of the coffee beans is not evenly distributed. Therefore we need a modern machine that can do the roasting process with maximum results. After roasting, the coffee beans are grounded. However, Panti Karya does not consider time lapse between grinding and packaging. To produce high-quality coffee, it should be packaged directly after grinding, ground coffee must be immediately packed and sealed. But at Panti Karya Salib Putih after grinding, it can take 15-30 days before being packaged. Therefore it is necessary to consider the time lag above.

**Outbound Logistics** activities involve all activities required to collect, store and distribute output. The results of coffee products at the Panti Karya Salib Putih outbound logistics activities are only stored in random places, therefore it is necessary to do a good design on layout of storage or design a proper storage system. While Marketing and Sales are only carried out by providing the products at the Salib Putih Nursing Home, besides the packaging design is also very tedious because it uses regular recycled paper package without a good design and logo. Other marketing approach that has been done is to sold the product door to door. 'Kalayan' workers are above 45 years old and are not as productive as other regular worker. This causes the output of ground coffee are also not optimal. Even though, less than 500 meters from Panti Karya Salib Putih there is a famous Agro Tourism Facility which is crowded with tourists and and also serene, comfortable and beautiful D'Emerick hotel, that can become a business partner of Panti Karya Salib Putih. Besides that, if it meets the requirements, Panti Karya Salib Putih can open up a coffee shop to cater coffee enthusiasts customers who come to enjoy agro-tourism and hotels. Panti Karya is only about 5 km from the city center, University and Academic Institution of Salatiga with thousands of students. With several improvements in ground coffee production, Panti Karya Salib Putih can work together with D'Emmerick Hotel and agrotourism as a supplier of coffee products. Thus there is a continuity in the coffee sales. Another thing to note is that Panti Karya Salib Putih must redesign and make a more attractive packaging and start marketing their product via online marketing.

Supporting activities in the value chain analysis are divided into four categories, first **Firm Infrastructure** consists of infrastructure activities needed to support company performance such as accounting, law, finance, planning, quality management, and general management. At Panti Karya, the organization is still very small so that the distribution of infrastructure activities have not been well designed. At present, Panti Karya has 6 employees whose activities are very administrative and handle other institutions, those are orphanages and nursing homes. While **Human Resource Management** at the Panti Karya has unique characteristics because its operational workforce is people who do not have work, so the nature of labor ties is still voluntary. Technology Development which covers all activities involving hardware, software, procedures and technical knowledge used in the process of transforming inputs/raw materials into outputs for this company is not yet owned by Panti Karya and they also have a very simple **Procurement** system.

#### **1.4 Findings and Interpretation**

The results of the analysis using the value chain approach in increasing the productivity of coffee processing show that almost every problem in the value chain components is found. In the main activity, it was found that the Inbound Logistics problem that occurred was unfavorable soil conditions and the condition of the coffee plant that was not optimal. While in Operations the problem identified at the Panti Karya is that there is no sorting of good and bad beans while sorting coffee beans after peeling while actually this process can increase the business value. Also, the roasting process only uses manual equipment so that coffee beans could not be roasted evenly. In Outbound Logistics, problem such as storage facility in random places, and while Marketing and Sales are only done by providing products at nursing home and packaging designs are also less innovative and in addition, the end products are only sold door to door.

Supporting activities, Firm Infrastructure were found to be the problem of the division of infrastructure activities that had not been well designed, while the Human Resource Management at the Panti Karya Salib Putih had unique characteristics because the production workers were unemployed people, so the nature of the labor union was still voluntary. Technology Development, Panti Karya did not have the necessary equipment for the production process, added to the problem is a very simple procurement system.

Based on the analysis of the problem using the value chain approach above, the recommendations for Panti Karya to improve the productivity of the coffee business are as follows: conducting soil analysis, fertilizing and stimulating substances, increasing the number of plants and rejuvenating coffee plants. It is also necessary to sort coffee beans after peeling to increase the business value. Another step that needs to be done is the use of a modern machinery that can make roasting process optimum and it is necessary to consider the time lapse

between the grinding coffee beans and packaging. In terms of marketing, with the improvement of the processing of coffee products, Panti Karya can cooperate with D'Emmerick Hotel and agrotourism to supply coffee products. Thus there is a continuity of product sales. Another thing to note is that it is necessary for Panti Karya Salib Putih to design a more refined packaging and more attractive logo and begin to market their product through online sales.

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