Value Chain Optimization of Woodcraft Industry

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Abstract

The competitiveness of the industry is influenced by the effective value chain. Effort to improve the competitiveness mostly done simultaneously and collaboratively between government, local government, and the industrial agent. The aims of this study are to identify supply chain, value chain analysis, to identify role activity of every party in value chain, and to formulate the strategy to optimize the value chain and the competitiveness of small and medium woodcraft industry (SME). This study was a statistic descriptive research using primary data obtained from observation and interview, and case study in two woodcraft industrial centers: Genjahan Village and Kedungkeris Village Yogyakarta. This study found that there are two models of supply chain in wood furniture industry, model 1: the raw material sources are from farmer, sawmill labor, SME agent, and customer, whereas the Model 2: gets additional source from wood seller. The highest value added is obtained by the SME. Value chain optimization aimed to enhance competitiveness through group institutional strengthening.

Keywords: Value Chain, Value Added, Industry Competitiveness

1.Introduction

In this getting more liberal market economy era, industrial agent is required to have high competitiveness. Industry is required to make the best product choices and is required to fulfill society's demand with competitive price. The competitiveness of the industry is influenced by the effective value chain. Effort to improve the competitiveness mostly done simultaneously and collaboratively between government, local government, and the industrial agent. The effective value chain is the key to competitive advantage resulting value added for an industry. Value chain can be portrayed as the whole activity admitted to bring goods or services from design place, to varied production phase (involving physical transformation and input from various service suppliers), send them to final customer, and recycle them after the usage. Chain analysis can also be functioned to identify value chain phases at which industry can improve the value added for customer and can create output cost efficiency (Porter, 1985, Kaplinsky and Morris, 2002). The industry can be more competitive through cost efficiency or value added improvement obtained from the value chain activity.

Product is the final result from the economic process by benefitting some inputs later on distributed through marketing activity which is able to create value added product though marketing functions which can realize the function or product utility, place, time, and ownership. Then, this activity can smoothen the marketing channel flow, physically and non-physically (Lee, 2000, Samuelson and Mark, 2012, Rosenbloom, 2013).

Value chain portrays the way to see a business as an activity chain changing input to output which is valuable for customer. The good and service are initiated from an idea, then through some different production phases, it is brought to customer and finally, it is recycled after it is used. Value chain analysis (VCA) tries to understand how a business creates a value for the customer by examining the contribution from different activities in business towards that value (Kaplinsky and Morris, 2002, Pearce and Robinson, 2009, Kotler and Keller, 2009). The common activity of the value chain is raw materials purchasing, production process, product selling; all of these are connected to each other. In this process, the production cost tends to increase.

The central activity giving biggest added value is marketing and selling (Sopadang, 2012, Zhou, 2013, Mangifera, 2015). Gunungkidul Yogyakarta is potential for wood manufacture industry establishment through woodcraft industrial centers approach: Genjahan Village and Kedungkeris Village.

In 2016, it is registered that wood furniture SME is around 3.548 units generating 14.619 labors. Field observation findings on those two centrals shows that there are many problems on production and marketing aspect.
One of the problems on marketing is the loss on competition towards furniture manufacture from another area. Despite of that marketing management problem, there are group problem, human resources management, and production management. Regarding to those problems, value chain analysis (VCA) is used as the tool to increase the quality value of an industrial product. Simply in business, company buys raw material, creates value added by changing it into a valuable thing for others or customer.

According to this discussion, thus, researcher is interested to do a research regarding value chain improvement effort therefore the income of furniture manufacture SME agent can be increased. Specifically, the aim of this study is to identify supply chain, analyze value chain, identify role activity of every party in value chain, and to formulate the strategy to optimize the value chain and the competitiveness of small and middle wood furniture industry (SME).

2.Research Method

This study was done at woodcraft industrial centers in Genjahan Village and Kedungkeris Village Gunungkidul Yogyakata. The study subjects were the raw material supplier, producer, and wood furniture product marketing agent in the research location. This study used primary data obtained through observation and interview on 50 wood furniture production chain agent. The sampling technique was purposive sampling. The data analysis method was descriptive qualitative method. The technique of data analysis used was SWOT analysis.

3.Results and Discussion

Supply Chain Analysis

Supply chain channel on both of wood furniture SME centrals is pretty similar on its pattern which is generally categorized into 2 models. On the first model, wood furniture SME agent gets the raw material directly from the local farmer in a form of tree. After it is cut off and trimmed, the wood log is processed by sawmill labor. The wood board and dice, later on was processed into a furniture, such as, cupboard, dining chair and table, livingroom chair, door frame, and bed. The wood furniture product are marketed directly to the customer booking the product. The customers are from local and regional. On the second model, wood furniture SME agent gets the raw material from wood seller in a form of log, then it is further processed as it is done in the first model.

Value Chain Analysis

Value chain on woodcraft industrial centers is started from the farmer as the raw material supplier, into the wood furniture SME agent making the furniture product, and customer buying the resulted furniture product. Product resulted by woodcraft industrial centers are cupboard, dining chair and table, livingroom chair, door frame, and bed. The product is made with teak, acacia, and mahogany wood. The price for each of the product is differ, it is priced based on the materials used. The price of the teak wood material product is different with the price of acacia material product. The price of mahogany material product will also differ with the teak wood and acacia wood materials products.

The value chain for the measurement of teak wood material product is OD (wood diameter 22-28 cm). The chain channel is that to create 1 m^3 teak wood log in OD size, in average, 4 teak trees is needed. The average sale price of the 4 teak trees is Rp1.641.700,00. The price is received by the farmer. The sawmill labor gets Rp176.250,00 per 1 m^3 teak wood log, in average. The income of the wood furniture SME agent is measured according to the product resulted from 1 m^3 teak wood log in OD size. The average sale price of the cupboard product is Rp2.681.800,00 per unit, thus, the total price for 3 cupboards is Rp8.045.400,00, in average. The average sale price of dining table-chair set is Rp3.222.200,00 per set, thus, the total price for 4 dining table-chair sets is Rp12.888.800,00, in average. The average sale price of livingroom table-chair set is Rp3.333.300,00 per set, thus, the total price for 4 livingroom table-chair sets is Rp13.333.200,00, in average. Whereas, the average sale price of door frame is Rp604.200,00 per unit, thus the total price for 12 door frames is Rp7.250.400,00, in average. And, the average sale price of bed is Rp2.260.000,00 per unit, thus the total price for 6 beds is Rp13.560.000,00, in average.

The Activity of the Value Chain Agent

Wood furniture business involves some agents, starting from the farmer, wood seller, sawmill labor, and small and middle wood furniture industry. Every agents in every phases does several activities that can increase the wood value added.

a. Farmer: Planning and nursing; trees Selling wood in a form of tree
b. Wood Seller: Buying wood in a form of tree, Surveying location and trees, Harvesting wood, Choosing wood log according to its diameter, Selling wood log
c. Sawmill labor: Giving sawmill services from wood log into wood dice and board
d. SME Wood Furniture Industry: Buying trees, Surveying location and trees, Harvesting wood, Grading wood log, Producing sawmill wood, Selling resulted product

On woodcraft industrial centers in the research location, there are some supporting institution. Wood seller has got a support from financial institution in the aspect of its financing or capital. Small and middle industry has also got support from related supporting institution in a form of training for the human resources and in a form of its financing. Sawmill labor also got a support from financial institution in the aspect of its financing to buy the equipment. Whereas, to market their product, both woodcraft industrial centers in Genjahan village and Kedungkeris village have not yet cooperated with any institutions. The furniture product is directly sold to the customer who books the product.

Value Added Analysis

The value added measurement of the agent involving in chain value of the woodcraft industrial centers using teak wood material is not spreaded evenly. The measurement can be seen as: The highest value added is received by SME with average value added is Rp467.400,00 (342%) per unit for door frame product, it means that one unit wood frame product can give value added for the SME agent around Rp467.400,00 (342%), in average. The value added comprises average machine operator labor cost around Rp2.600,00, average woodcutter labor cost around Rp5.000,00, average consumption cost of the labors around Rp7.400,00, average production labor cost around Rp45.000,00, average supporting material cost around Rp13.300,00, average sawmill cost around Rp14.700,00, average depreciation cost around Rp25.600,00, average carrier labor around Rp10.000,00, and includes average consumption cost of the production labor during the production of door frame (± one day) around Rp50.000,00.

Value Chain Optimization Strategy

There are some factors in determining the success of the central to optimize the added value. According to the finding of the field research, all members of the woodcraft industrial centers are agree that the success key of the wood furniture business is the resulted product quality and the suitability of the customer's booking. The product quality will be good if the furniture business uses the good raw materials, for example, using teak wood. Despite of the good quality, the suitability of the customer booking is also determining, such as the suitability of the furniture design and the suitability of the raw material requested by the customer.

The role from institution is very important in improving the wood furniture value chain and in improving the wood furniture business competitiveness in Genjahan village and Kedungkeris village. Institution has a role to accommodate the need of the wood furniture business agent, especially to make a good resulted product quality, lower an unhealthy competition between good quality product thus it can expand the product marketing. Based on the research, actually there is a wood furniture business agent association, however, the institution in the form of association is considered not really optimum in facilitating the business agent need.Using SWOT matrix, the value added optimization strategy formulation also increases the competitiveness of wood industry in Genjahan village and Kedungkeris village. It can be seen through some internal aspects and external aspect influencing SME's competitiveness in both centrals.

According to SWOT analysis result, some main strategies to optimize the woodcraft industry value chain on both of the centrals are formulated, namely doing a cooperative strategy with BUMN (CSR) for woodcraft-based creative economy program; expanding the local market with price and raw material quality superiority; improving the design according to the market demand which cooperate with BUMN, college, LIPI. Other things should be done are group strengthening to strengthen the program accesses, including KUR and CSR accesses; strengthening group to supply the raw material collectively; socializing tree saving movement to sustain the availability of the raw material supply; optimizing the local market by using local raw materials in order to not to

be burdened by SVLK certification; and activating group as the communication place and SME advocate related to the raw material certification.

4. Conclusion

Supply chain channel on woodcraft industrial centers is generally categorized into 2 models. The first model consists of farmer - sawmill labor - SME agent - customer. The second model consists of farmer - wood seller - sawmill labor - SME agent - customer. Value chain on wood woodcraft industrial centers involving 4 main agents; farmer and wood seller as the raw material supplier, sawmill labor as the service supplier, and SME agent. The raw material to make the furniture is obtained from local area. The technology used is considered sophisticated, thus, it can produce good quality product and suppress the cost. Human sources training through training or workshop is still need to be improved, thus, it can improve skills. The market accesses is still inadequate, it is because of the SME agent's lack of information technology knowledge. The highest value added on the phase of the wood producing value chain is received by SME.

Value added optimization strategy need to be done are institutional strengthening, wood furniture value chain optimizing on both of woodcraft industrial centrals, doing a cooperative strategy with BUMN (CSR) for woodcraft-based creative economy program; expanding the local market with price and raw material quality superiority; improving the design according to the market demand which cooperate with BUMN, college, LIPI. Other things should be done are group strengthening to strengthen the program accesses, including soft loan (KUR) and CSR accesses; strengthening group to supply the raw material collectively; socializing tree saving movement to sustain the availability of the raw material supply; optimizing the local market by using local raw materials in order to not to be burdened by SVLK certification; and activating group as the communication place and SME advocate related to the raw material certification.

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