
E-BUSINESS MODELING AND DIVERSIFICATION FOR SME USING PHA METHOD IN INDONESIA

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ABSTRACT

Indonesia has many potential crafts industries. One of them is melinjo (*Gnetum gnemon*) in Banten Province. However, its development seems has not visible yet. In 2017 the harvest area for melinjo in Banten Province is 399,032 trees with a productivity of 62.16 kg / tree and reaches a production of 248,021 quintals. One of the problems is that product cannot be sold and utilized due to lack of marketing and promotion. The objective of this research are to find out the problems of industries and to determine development strategy. Method used are descriptive analysis and Analysis Hierarchy Process (AHP). The sample in this study consisted of 10 craftsmen and 8 key persons. Results show that the fundamental problems facing is limited skilled human resources. The main priority in development of this industry is HR criteria (weight value 0.473), followed by marketing criteria (weight value 0.352), production management criteria (weight value 0.128), and technology criteria (weight value 0.082). Suggestion of this study is that the government is expected to be more focus in development this SMEs industry by enhancing their knowledge and technical skills of human resources through education and training specially in using the internet for utilizing in their business.

KEYWORDS: E-Business, Diversification, SME, PHA, SME

INTRODUCTION

a. Background

The internet is currently not only used as individual communication media, but also for business. Development of the Internet in business communication is an opportunity for Small and Medium Enterprises (SMEs) to promote products. It makes easier for businesses and consumers to buy and sell products.

One of opportunities that SMEs can exploit in using of technological to provide faster, more precise and more accurate services by using e-commerce (Maroufkhani, et. al: 2020). To support SMEs in utilizing e-commerce, there are several criteria that are important for SMEs to pay attention to, such as various forms of e-commerce ranging from Business to Business (B2B), Business to Customer (B2C), Customer to Customer (C2C), Business to Administration (B2A), Customer to Administration (C2A), to Online to Offline (O2O), Haikal, et. al.: 2020).

The growth of SMEs has developed quite rapidly in the last few years. Accounted for almost 100% of all existing firms but only contributed between 58 to 61% of gross domestic product (GDP). About

42.84% of MSEs are owned by women, although ratio of female to male entrepreneurs in MSEs varies by province, (Tulus, 2019). SMEs continue to survive even though Indonesia has experienced several economic shocks or crises. However, there are several challenges faced by SMEs in marketing aspect. One of which is that many SMEs do not apply the internet in running their business, even though development of the internet in Indonesia has been increasing from year to year. Internet can be used for personal and business. Electronic transactions are carried out to increase business activities, one of which is through e-commerce. Using e-commerce can also encourage SMEs to penetrate International market, because in e-commerce products sold / shown are not limited to their territory.

Agricultural and food sectors are widely used by SMEs as their superior products, because Indonesia has a variety of potential resources for agricultural and processed agricultural products that are easily made into various kinds of attractive and nutritious products. Banten Province is one of provinces in Indonesia that utilizes agricultural potential as a source of regional income. One of agricultural potentials of Banten Province is melinjo (*Gnetum gnemon*), which has become Banten Province as one of melinjo producing centers. Based on Horticultural Statistics Data (2017), harvest area for melinjo in Banten Province is 399,032 trees with a productivity of 62.16 kg / tree and reaches a production of 248,021 quintals.

People of Banten use abundant melinjo to be sold or eaten directly, one of which is processed into chips, called Emping. It is a melinjo processed product which is a regional specialty. Banten SMEs have added to selling value of chips by making various flavors and types of chips. However, SMES chips / melinjo in Banten have various obstacles. Stating that melinjo chips which cannot be sold and utilized are due to lack of marketing and promotion (Firmansyah, 2018).

Melinjo Banten SMES requires an increase in product quality and product diversification and diversity in form of product promotion. SMES Melinjo Banten needs to innovate product diversity and participate in development of the internet and e-commerce, so as to capture a wider market and increase sales of melinjo chips.

This research was conducted at one of Melinjo SMEs in Banten Province. Product diversification and marketing methods at SMEs are important because even though they have been implemented, there are still a number of obstacles that cause costs and a less extensive market reach. Good sales are done not only how to be cost-effective, have added value and can expand the market. These criteria often have different weights for SMES players in Banten. Based on this, it is necessary to select optimal sales and production strategies for SMES Melinjo by looking at conditions of these SMEs, whether they are in accordance with SMES thinking framework and challenges it faces. Based on consideration of several aspects, this research uses decision making with Analytical Hierarchy Process (AHP) model. AHP is used to show alternative forms of products and e-commerce which are always for

Melinjo SMES actors in Banten Province.

Many methods are used in decision making approach, one of which is Product Hierarchy Analysis (AHP) method. AHP is widely used in research for decision support in various fields, from system selection, management, to human resource fields. AHP is an excellent and accurate tool for making decisions.

2. RESEARCH METHODOLOGY

Leading commodities are trade commodities that can be used as raw material for products by utilizing all parts or components. Development of superior melinjo commodities in Banten Province originated from problem of the need to determine salinity of products and marketing, as well as how to see potential and opportunities for developing melinjo products. Research stage was carried out by studying literature then collecting data which included primary and secondary data. Primary data obtained from results of interviews and filling out questionnaires by SMES actors.

Data analysis technique used in this study is Analytical Hierarchy Process model, which is a tool to help decision making by modeling complex problems into a hierarchical structure that shows objectives, criteria, sub-criteria and alternative solutions. AHP arranges subjective values in a logical way. AHP also incorporates objective and subjective considerations on decision making.

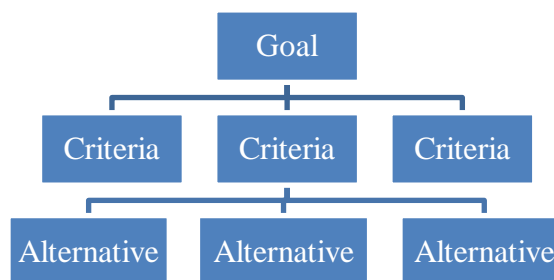


Figure 1. Hierarchical Structure in AHP

AHP decision making has 3 phases. First is decomposition, namely decomposition of problem into smaller elements, elements are then determined in a position to form a hierarchical structure. Next is comparative assessment and result synthesis in a hierarchical order of priorities. (Saaty, 2002)

3. RESULTS AND DISCUSSION

Based on background and objectives stated in background above that in this study focuses on diversification decision making and e-business modeling in determining success indicators of melinjo derivative products in Banten province. In addition, it is explained that research begins with a survey

method of business actors and business owners. Furthermore, interviews were conducted regarding success of their business and identified SWOT factors for both internal and external evaluation.

Problems of Melinjo SMEs in Banten Province can be grouped into four aspects, namely aspects of Human Resources (HR), aspects of marketing, aspects of production management and aspects of technology. In HR aspect, problems faced are related to knowledge of HR about entrepreneurship, technical skills in HR, as well as role of extension workers and small business consulting. Technical skills of human resources are still relatively low because most of workforce can only help menial jobs and only a small proportion can produce good quality products. The role of extension workers and small business consultations is quite active, but not all owners of melinjo superior commodity industry in Banten Province feel role of extension workers and small business consultations.

In marketing aspect, problems faced by leading melinjo commodity industry are related to marketing facilities and infrastructure (trading houses / workshops), business partnerships with large companies / traders, and exhibition facilities. In general, industrial owners do not have a place to market and promote their products, most industry owners only market their products in their respective homes. Partnership formed between leading melinjo commodity industry with companies / wholesalers has also begun to stop, one of reasons is that leading melinjo commodity industry is unable to meet demands for product quota every month. Furthermore, interest of craftsmen in participating in exhibition activities is still relatively low, one of reasons is inadequate facilities for exhibition activities and narrow booths provided.

When viewed from aspect of production management, problems still facing leading melinjo commodity industry are related to management and technical capabilities of processing production, packaging and product innovation, as well as application of product standardization. Industrial productivity is still relatively low due to lack of management and technical capacity for processing production. Only a small portion of industry has a division of labor in production process of their business. Product packaging and product innovation are still very simple, apart from limited knowledge about products that are of interest to market, limited product packaging is also caused by production that is only done when there is an order. Product standardization has also not been implemented by leading melinjo commodity industry in Banten Province.

Furthermore, problems faced in technological aspect are related to ability of research field to develop new technology (machines / equipment), technology procurement (machinery / equipment), and application and development of new technologies including use of the internet by small entrepreneurs. Development of new technology has indeed begun to be developed, it's just not in accordance with needs and capabilities of small industries. For example, like melinjo drying machine, it is quite helpful for drying process, it's just that power required is too high and procurement costs are quite high. Most

industries are also still reluctant to apply new technology, they prefer simple technology that is easier to operate and maintain.

Melinjo Industry Development Strategy through AHP

Development program for leading melinjo commodity industry is related to several main aspects, among others: human resources aspects, marketing aspects, production management aspects and technological aspects. Based on combined opinion of key persons, it shows that human resource aspect (weighted value of 0.463) is the most important criterion that needs to be considered in strategy of developing leading melinjo commodity industry. Next aspect that needs attention is marketing aspect (weight value of 0.347); aspects of production management (weight value 0.119); and technological aspects (weight value 0.071). Inconsistency ratio value is 0.08 <0.1 (maximum limit), which means that results of analysis are acceptable.

Table 1. Criteria for Melinjo Industrial Development

Program	Weight Value	Remark
Human Resource Based	0,473	Inconsistency Ratio = 0,08
Marketing Based	0,352	
Management Production Based	0,128	
Technology Based	0,082	

Source: Research Data Processing Results (2020)

Selection of HR aspect as main priority that must be considered in development of leading melinjo commodity industry reflects that level of ability and skill level of human resources in melinjo superior commodity industry is closely related to development program of melinjo superior commodity industry in Banten Province. First aspect that becomes a priority in development of leading melinjo commodity industry in Banten Province is aspect of Human Resources (HR).

Table 2. Criteria for Human Resources (HR)

Human Resource Aspect Criteria	Weight Value	Remark
Training to cultivate entrepreneurship	0,217	Inconsistency Ratio = 0,01
Education and training to improve technical skills	0,641	
Small business extension and consulting staff	0,160	

Source: Research Data Processing Results (2020)

Based on Table 2, it can be seen that education and training in improving technical skills are the most priority alternatives in development of melinjo superior commodity industry with a priority percentage of 64,1%. Furthermore, second priority is training in an effort to cultivate entrepreneurship with a

priority percentage of 21.7%, followed by extension workers and small business consultations with a priority percentage of 16%. The important implication of this is that it is necessary to do education and training of human / labor resources more seriously to improve quality and competitiveness of both crafters / melinjo entrepreneurs and to be able to compete with quality of competing products from abroad. If improvement in quality of human resources has been achieved and is sustainable, then this will encourage achievement of development of melinjo superior commodity industry. Second aspect in melinjo industrial development strategy is marketing aspect.

Table 3. Marketing Criteria

Human Resource Aspect Criteria	Weight Value	Remark
Trading house and marketing	0,412	Inconsistency Ratio =0,01
Business partnership with large one	0,447	
Exhibition activity facilities	0,160	

Source: Research Data Processing Results (2020)

Based on Table 3, it can be seen that business partnerships with large businesses are the most priority alternatives in development of leading Melinjo commodity industry from marketing aspect with a priority percentage of 44,7%, followed by trading houses and business marketing (workshops) 41.2% and activity facilities. Exhibition 16%. Important implication of this is that it is necessary to form a partnership between melinjo industry and entrepreneurs or large traders who can become a definite market for crafters. Partnership in this case is cooperation that does not only benefit big businesses / traders but also small crafters. Third aspect that needs to be considered in development of melinjo superior commodity industry in Banten Province is aspect of production management.

Table 4. Production Management Criteria

Human Resource Aspect Criteria	Weight Value	Remark
Management capabilities and production processing techniques	0,338	Inconsistency Ratio= 0,04
Product design and innovation	0,398	
Application of product standardization	0,282	

Source: Research Data Processing Results (2020)

Based on Table 4. It can be seen that priority order in development of leading melinjo commodity industry from aspect of production management is packaging and product innovation with a priority percentage of 39,8%, management and technical capabilities of processing production of 33,8%, and application of product standardization of 28,2%. This shows that main alternatives in development of melinjo industry in Banten Province which are related to aspects of production management are packaging and product innovation. This is related to market tastes and product competitiveness in the

market. So important implication of this is that it is necessary to improve packaging of handicraft products and also to make innovations in existing handicraft products so that they can compete both among crafters / entrepreneurs of superior melinjo commodities and with competitors from abroad. Last aspect that needs to be considered in development of melinjo superior commodity industry in Banten Province is technology aspect.

Table 5. Technology Criteria

Human Resource Aspect Criteria	Weight Value	Remark
Research field capability for new technology development	0,435	Inconsistency Ratio=0,04
Technology assistance (machinery / equipment)	0,358	
Incentives for small businesses to apply and develop new technology	0,156	

Source: Research Data Processing Results (2020)

Based on Table 5, it can be seen that ability of research field to develop new technology is the most priority alternative in development of melinjo superior commodity industry from marketing aspect with a priority percentage of 43,5%. Next priority is technology assistance (machinery / equipment) at 35,8% and incentives for small businesses implementing and developing new technology at 15,6%. The important implication of this is that it is necessary to increase capacity of research field for technology development so that it can assist craftsmen in producing superior melinjo commodities. If technological aspect has become one of important and urgent priorities, then this will ensure achievement of development of melinjo superior commodity industry in Banten Province. Another thing that is no less important is socialization regarding advantages and benefits of using new technology, so that craftsmen are willing to apply technology (machines / equipment) that is more effective and efficient.

CONCLUSION

The problems of melinjo as a superior commodity industry in Banten Province in aspect of human resources (HR) are related to knowledge of human resources / labor about entrepreneurship, technical skills of human resources / labor, and role of extension workers and small business consulting. Meanwhile, marketing aspect relates to marketing facilities and infrastructure (trading houses / workshops), business partnerships with large companies / traders, and exhibition facilities. Furthermore, aspect of production management is related to management and technical capabilities of production and processing, packaging and product innovation, and application of product standardization. Then technological aspect relates to ability of research field to develop new

technology (machines/equipment), technology procurement (machinery/equipment), and application and development of new technology by small entrepreneurs.

Strategy of developing melinjo craft industry through AHP which was carried out on 16 key person consisting of elements of government, academics / researchers and industry players showed that human resource aspect (0,473) was the most important aspect that needed to be considered in strategy of developing leading melinjo commodity industry in Banten. Next aspect is marketing aspect (0,352), production management aspect (0,128), and technology aspect (0,082).

Banten Government is advised to focus more on development of superior melinjo commodity industry through increasing knowledge and technical skills for craftsmen through education and training. Education and training can be developed simultaneously with strengthening of cluster functions, so that between craftsmen can exchange information and knowledge, role of extension workers and small business consultations should be more than just extension workers but also as assistants to small businesses. This is important considering that small entrepreneurs / small craftsmen need a companion figure in carrying out their business activities.

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