

Economic Behavior of Eco-Friendly Silk Entrepreneurs

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Abstract: Sustainability of silk business management in Wajo depends on the comprehension, attitude and behavior of the silk entrepreneur. The present study aims at describing the economic behavior of silk entrepreneurs start from feeding the silkworm until marketing eco-friendly silk products. The present study employed qualitative approach and the data were collected through in-depth interview, participant observation, and documentation. The data analysis employed for activities, which are data collection, data reduction, data presentation, and conclusion. The finding of this research shows that the comprehension and the action of silk entrepreneurs related to eco-friendly business management is poor. Silk entrepreneurs have done some stages of cleaner production from providing mulberry leaves up to marketing silk products, as an effort to realize eco-friendly silk industry.

Keywords: Comprehension, Attitude, Behavior, Economic Behavior of Environmentally Sound Silk Entrepreneur

I. Introduction

Basically, environmental problems happen because humans often do not care of equilibrium and harmony of environment. Most of the environmental disturbance happened are caused by humans themselves who are less responsible and have low environmental ethic. Humans' attitude in having interaction with their environment reflect carelessness toward ecological sustainability. Brown (1981) states that ecological sustainability is humans' sustainability in fulfilling their needs without reducing the next generation' opportunity.

The way humans interact with their environment is very influenced by internal factors in themselves such as knowledge, attitude, education, experience, motivation, culture and values. Those internal factors have very important roles in controlling humans through their attitudes, not only in particular type of persons, but also in various type of persons starting from individual behavior, household, small community, to business behavior. (Faturchman:1995).

Related to that thing, the sustainability of silk business management depends on the "Ecological Awareness" of the entrepreneurs to change their business strategy in redefining their operational activity to be sustainable, especially the UMKM sector, which is the key sector to build sustainable economy and the important factor to absorb workers. Kuncoro (2009:326), states that attention to develop UMKM is caused by three reasons. First, Micro, Small, and Intermediate Business absorb a lot of workers and utilize local natural resource intensively. Second, UMKM has an important role in exporting non-oil. Third, UMKM is very domineering in term of the numbers from the business unit.

Thee (1993:109), states that small industry development is a way which has a big role in the development of manufacturing industry. Development of small-scale industry will help to solve a problem like unemployment, so in addition to increase employment and business opportunity, also can push regional development and construct the sustainability of industry, which is related to nation's cultural value.

As a part of small and medium industry, in Wajo Regency, South Sulawesi Province, silk industry has been developed as home industry which dominates the public life in Wajo Regency. Silk industry development is not only focused on activity to produce final product, which is silk, but on the series of activity from the upstreaming activity to the downstreaming activity, Nurjayanti (2011). The upstreaming activity is begun by the cultivation process of mulberry as the main food of silkworm, then followed by raising silkworms until reeling the cocoon to be silk thread. Next, downstreaming activity is begun from preparing the main material, which is silk thread, until marketing the silk products.

The sustainability of silk industry management in Wajo Regency is related to the silk entrepreneur's behavior in saving the natural resources and minimizing the utilization of poisonous materials and emission waste in the life cycle. Based on the initial interview to silk entrepreneurs in Wajo Regency, information got are: first, silk entrepreneurs get less training and elucidation related to the effect of silk business they do toward the environment. Second, the silk entrepreneurs get less knowledge about how to preserve the natural environment, from the government or from privates. Third, most of silk entrepreneurs use synthetic dye due to the limited number of main material, production and colors produced by natural dye.

Due to the things above, the improvement of competitiveness of silk products, whether in domestic or in export market should be done through sustainable silk business management. An effort to know the real condition of small and medium silk entrepreneurs, from the upstreaming activity to the downstreaming activity by considering aspects of economy, social and environment sustainability, especially in *Wajo* Regency is an interesting phenomenon to be investigated deeply through a research entitled “Economic Behavior of Silk Entrepreneurship in Developing Industry Which is Environmental Sound in *Wajo* Regency”.

The present study aims at describing the comprehension and attitude of silk entrepreneur about silk business management which is environmental sound economic behavior of silk entrepreneurs in managing eco-friendly business from feeding silkworms until marketing silk products, with various effect appeared, so finally the researcher can recommend the related party to solve every problem faced by the silk entrepreneurs in improving the entrepreneur’s prosperity and establishing eco-friendly silk industry.

II. Review of Theory

2.1. Eco-friendly Industry

Eco-friendly industry is an industry which produces products or services where the entrepreneurs try to improve the performance of environment, economy and social. Environment-oriented industry minimizes the effect to environment through approaches directed to green design, planning and applying cleaner production, and having eco-friendly technology. (Djajadiningrat, 2011).

Environment challenge should be a consideration for the future entrepreneurs to calculate things related to the strategic business plan and decide their job priority. Environmental issues should not be assumed to make competition in business be more difficult but as a stimulus in facing the competition, (Porter, 1991).

2.2. Knowledge and Attitude of Environmental Care

According to Fishbein and Ajzen (1975) in Kutaneegara (2014), knowledge is a base to build a faith and faith is a consideration to decide the attitude, while knowledge is a set of information recorded in one’s self.

Based on the theory of Assael (1992) in Kutaneegara, (2014), one’s attitude building is influenced by information and experience they have. Some factors which can influence attitude building are personal experience, culture, people who are considered as important people, mass media, education institution, religion institution, and emotion factors in one’s self, (Azwar, 2011).

2.3. Producer’s Economic Behavior in Sustainable Development

Azis, (2011) states that sustainable development will be realized if entrepreneurs can change their mindset in business management from short term to long term. If entrepreneurs utilize natural resources efficiently, then environment condition will be more preserved and a saving economically as well, (Todaro, 2006).

2.4. Cleaner Production

UNEP (2001), defines cleaner production as strategy to manage environment, which is preventive and integrated. It should be done continuously in production process and product life cycle to reduce the risk toward people and environment.

Cleaner production is focused on the waste formation, which is one of inefficiency indicator. Preventive action is started from the beginning of production process by reducing the waste formation and utilizing waste through recycling, (Djajadiningrat, 2011). Cleaner production strategy emphasizes on environment management continuously. (UNIDO, 2002).

2.5. Green Marketing

Concept of marketing products which used material that does not damage natural environment is called green marketing (Situmorang, 2011). Green marketing consists of all activities designed to produce and facilitate every exchange to fulfill human’s needs by minimizing the bad effect toward environment (Polonsky, 1994).

Philosophy of sustainable development provides value driven on green marketing by emphasizing that environment preservation does not mean to lose the economic welfare, but to push the thought about how to link marketing with environment preservation (Haryadi, 2009).

2.6. Natural Silk and Silk Reeling Industry

Natural silk is an agro-industry activity consisting of mulberry cultivation, silkworm nursery, raising silkworms, spinning thread, textile, giving motive/dyeing/labeling/finishing, garment and producing other finished goods including the marketing. (Nunuh, 2006). In developing natural silkworm, there are so many

factors which are needed to be improved from upstreaming aspect(silkworm cultivation), spinning and weaving production aspects to the marketing aspects of the product..(Nurhaedah, 2013).

III. Research Method

This research was conducted in two locations, which are *Sabbangparu* Sub-district, as the center of silkworm cultivation and *Tanasitolo*, as the center of silkworm textile. The informants are selected by purposive sampling and snowball sampling. The research informants are natural silkworm entrepreneurs and silk weaving entrepreneurs from 6 small and medium businesses.

The data collection technique employed is participatory observation, in-depth interview and documentation. The data is analyzed by four activities, which are data collection, data reduction, data display and conclusion/verification (Miles & Huberman; 1994, Moleong, 2014). The check of finding's validity is done by four criteria, which are credibility, transferability, dependability, and conformability.

IV. Discussion

4.1. Comprehension and Attitude of Silk Entrepreneur to Eco-friendly Business

4.1.1. Comprehension

Comprehension of silk entrepreneurs related to eco-friendly business management is influenced by their level of education. Silk entrepreneur's education background influences their knowledge, perception, attitude and analysis related to eco-friendly business management

Education background that silk entrepreneur have influences their way of thinking rationally and responsibly. Therefore it opens their mind and enlarges their point of view in behaving. Education background of the entrepreneurs of *Salojampu* silk is senior high school, *Arni Kurnia Sutera* is S1 (Applied Science), *Ayoeng Silk* and *Juneda Silk* is senior high school as well, *Akil Amin Silk* is S1 (Medical) and *Aminah Silk* is S1 (Economy).

The level of education silk entrepreneurs have can influence their ability to absorb new innovation including information and technology. Ability to absorb information is a base for silk entrepreneurs to act wisely and build the entrepreneurs' awareness to change their behavior in managing silk business, by utilizing resources, information, opportunity, knowledge, and skill, for the sustainability of silk business and the future life of silk entrepreneurs. It is also suitable with the research finding that every generation always leaves legacy to the next generation, which is the resource condition with good production ability (Barnett dan Morse dalam Suparmoko, 2012).

Education that silk entrepreneurs have is very fundamental in changing their behavior to be better, which have social and environmental care. It is in line with the research finding that education is powerful and positive instrument (formal, nonformal dan informal) to do communication, give information, awareness, learning, also mobilize the community and achieve the developed and sustainable nation in the future (Hastuti, 2009). Knowledge, skill, and ability that silk entrepreneurs have push their attitude and behavior to do silk business management meaningfully. The knowledge which they have becomes personal basic capital to behave more concerned on the environment (Kotler, 2002).

Beside the level of education, experience is also a factor which improves silk entrepreneurs' skill in improving their performance. Experience of participating event and training of silk business management and also cooperate with silk business partner will affect deep comprehension of silk business management activity which is environmentally sound. That condition is in line with the research finding that factors which influence the competition of UKM are worker's skill and entrepreneurs' skill (Tambunan, 2012).

The comprehension of small and medium entrepreneurs about environmentally sound silk business is still limited. They only know the management of liquid and solid waste. The comprehension of small and medium entrepreneurs about environmentally sound silk business is still limited is still low. That is because the socialization from the stakeholders about cleaner production and silkworm environment-oriented business management is not optimal. The lack of that comprehension affects the silk entrepreneurs' attitude which reflects indifference to the environment. It is observed from some silk entrepreneurs' behavior such as *Arni Kurnia Sutera*, *Akil Amin Silk*, *Juneda Silk* and *Aminah Akil Silk*, who discard the dye waste to land directly without neutralizing it first.

Entrepreneurs' attitude in discarding waste directly to land is based on the comprehension that level of pollution emerged is low so it does not give negative effect to environment. In fact, it does not matter how small the waste is, if it polluting the environment continuously for long term, the negative effect will be appeared directly or indirectly, such as smell changing of water, plants are not fertile and harm humans' health.

The low comprehension of silk entrepreneurs about environment-oriented business management is also observed from the behavior of entrepreneurs who use synthetic dye consistently rather than natural dye. It is caused by the maximum profit they want to get. If they use natural dye, the production will be limited because

the market access of natural dye is still low and the dyeing process is not only once, but many times. If they use synthetic dye, they can produce a big number of silk in a process of production and the process does not take time.

Entrepreneurs of small and medium silk business do not understand the stages of cleaner production to minimize waste and reduce negative effects on environment yet. Therefore, for the sustainability of the nowadays' or future's business management, the role of government and stakeholders to socialize, educate, and train of cleaner production to realize environmentally friendly silk industry is required. Cleaner production as a strategy of environment management which is preventive and integrated should be applied continuously in the production process and product recycle to reduce the risk toward humans and environment, (UNEP, 2001).

Involvement of job world, government, and academician is needed to change silk industry system comprehensively by integrating optimum financial attainment which is balance with the improvement of entrepreneurs' life and the sustainability of environment. The solution is renewing the comprehension and practice of silk industry to be industry management which is environmentally friendly and guarantee the prosperity of the people around them.

4.1.2. Attitude

Entrepreneurs of small and medium business in managing eco-friendly silk industry are related to the knowledge and the entrepreneurs' attitude about many things related to the sustainability of silk industry. Knowledge is a base of faith formation, and faith is a consideration to determine behavior (Fishbein dan Ajzen, 1975 in Kutanegara, 2014).

Those six entrepreneurs of small and medium silk business support, agree, act positively and responsive in doing some stages of cleaner production to build environment-based silk business. It is observed from the behavior of Salojampu Sutera and Ayoeng Silk, who accept order silk cloth which is natural dyed from customer, and Arni Kurnia Sutera, Juneda Silk, Akil Amin Silk and Aminah Akil Silk who process the waste of silk cloth and pack the products from recyclable materials.

Silk entrepreneurs support the eco-friendly silk industry based on the ability, needs, the condition of worker and government support. Entrepreneurs' ability here is related to the financial capital aspect and human resource. The implementation of cleaner production needs a lot of money and large field. The difficulty of entrepreneurs to provide large area, buy energy-safe equipment and equipment to process the waste is a problem of silk entrepreneurs to manage silk industry which is environmentally friendly.

Silk business management which concerns on the sustainability of environment is also related to the human resources, which are craftsmen, entrepreneurs and workers. Entrepreneurs' awareness in managing silk business by concerning on the environment sustainability is still low. That is because they have to fulfill their needs, so they often override rational action and responsibility to manage silk business which concerns on the sustainability of environment.

Small and medium silk entrepreneurs choose the fast production process, an ultimate number of products with easy and affordable marketing. The attitude of businessman of small and medium silk entrepreneurs who tend to achieve optimum profit emerges the thought and behavior which does not lead to sustainable silk business management. That condition is suitable with the research finding that humans' interaction with environment is influenced by internal factors such as knowledge, attitude, education, experience, motivation, culture and values. Those internal factors have important roles in human control through their behaviors, (Faturochman: 1995).

Silk business management which is environmentally friendly can be done by changing the silk entrepreneurs' attitude through giving knowledge and experience from stakeholders, which leads to positive attitude which will determine the action of silk entrepreneurs in managing silk business to be better, by integrating aspects such as economy, social, and environment. This is suitable with theory of Assael (1992) in Kutanegara (2014), that factor which can influence one's attitude is information and experience one gets from particular object.

Environmentally friendly silk business management is a need for the sustainability of silk industry in the future. The attitude of silk entrepreneurs to take an action is very important to be realized. In silk business management, silk entrepreneurs minimize the effect of pollution and waste by utilizing natural dyeing and processing solid waste. However, the first motivation of silk entrepreneurs to use natural dye and process solid waste is to fulfill the costumers' request. An effort to develop the silk industry by implementing environmentally friendly cleaner production cannot be successfully implemented without any change of mindset, attitudes and behavior fall parties participated, namely the public, government and silk entrepreneurs. Change of the mindset of the importance of preserving the environment will facilitate the creation of a Green Society, which is people who care about the environment.

Therefore, support from region government, central government and stakeholders are absolutely required to change silk entrepreneurs' mindset. Development of silk entrepreneurs' mindset is a sustainability

aspect which is very important to emerge analysis and systematic ability and in managing silk business efficiently, usefulness and environment-oriented.

4.2. Economic Behavior of Silk Entrepreneurs in Providing Silkworm Food to Marketing Environment-Oriented Silk Products

4.2.1. Providing Silkworm Food

Cultivation of mulberry is related to the cultivation of silkworm because the success of silkworm cultivation depends on the mulberry leaves' quality. The cultivation of mulberry as the only food for silkworm is done by Salojampu Sutera and Arni Kurnia Sutera by cleaning up grass and pest around the mulberry, controlling pest and diseases in mulberry and fertilizing the plants by using organic fertilizer.

To reduce the production cost and make cultivation process of silkworm easier, the silk entrepreneurs plant mulberry close with the cultivation place of silkworm. The truncation of mulberry is done after the leaves are cropped to stimulate the growth of new buds.

Entrepreneurs of small and medium business process the waste of mulberries' stem by replanting the stem of mulberry which has been cut as new slip of a plant and burning the mulberry's stem which is not productive anymore. To avoid the use of leaves which have bad quality and contain chemicals, the entrepreneurs do not use leaves which are close with other people's plants because it is possible that the mulberry leaves are contaminated with pesticide. Besides, silk entrepreneurs always wash the mulberry leaves before giving it to the silkworm. On the rainy season, silk entrepreneurs drain the leaves by using fan to omit the bacteria or virus on the leaves.

The sustainability of mulberry as the main food for silkworm depends on the behavior of entrepreneurs in maintaining mulberry. It is in line with the research finding that to produce high quality mulberry leaves, special treatment such as plant cultivation, truncation, also pest and disease control is required (Nurhaedah, 2013).

4.2.2. Silkworm Cultivation

Silkworm seed which is developed by small and medium silk entrepreneurs is from F1 silkworm seed which type is bivoltine, produced by *Perum Perhutani Soppeng* Regency, candiroto silkworm seed from Central Java and silkworm seed from Balai Persuteraan Alam (BPA) *Wajo* Regency.

The big number of silkworm seed which is cultivated by Salojampusutera and Arni Kurnia Sutera is influenced by the wide area of mulberry field, the capacity of silkworm house, and the number of workers. The silkworm cultivation is done close with the mulberry field and most of the workers are family worker. Silkworms are feed 3-4 times a day, which are morning, evening, and night.

One important aspect done by Salojampu sutera and Arni Kurnia sutera in maintaining silkworms which is environment-oriented is doing disinfection. Disinfection is cleaning and avoiding silkworms from pest and diseases. Disinfection is done in the silkworm cultivation place, workers and the equipment used.

Disinfection done by small and medium silk business is by cleaning the wood rack used to cultivate the silkworms, including the remainder leaves, silkworm's feces and sick or dead silkworm, pinning a cloth or curtain surround the silkworm cultivation place, cleaning the trash can, plastic bucket and winding the cloth on the below part of the rack to avoid silkworms from pest such as lizards, frogs and ants. Disinfection for workers is done by washing hands and feet before feeding the silkworms and not using any perfume while entering the silkworm cultivation room. It is in line with the research finding that disinfection is very important to make sure that silkworms are healthy. Disinfection is a preventive action before, during, and after the silkworm cultivation. (Nurhaedah et al., 2006).

Furthermore, small and medium business Salojampu sutera and Arni Kurnia sutera pay attention on surroundings of the cultivation place of silkworm such as organizing temperature, humidity, and lighting. Those are observed from silk business who pours water over the floor of silkworm cultivation place and use keli paper and sponge to organize the humidity of the room. This is in line with the research finding that the success of the silkworm cultivation is influenced by many factors such as quality and quantity of mulberry leaves, type of seed, and maintaining technique, (Samsijah dan Lincah, 1992).

Small and medium business Salojampu sutera and Arni Kurnia sutera process the waste of silkworm cultivation, which is the feces of silkworm. They use the feces as organic fertilizer and the cocoon of silkworm is reprocessed to be pure flour as an additional material of cake, so it gives added value for the silk entrepreneurs. The silk cultivation is done altogether, so energy and time can be saved, production cost is reduced, and pest and diseases can be controlled.

4.2.3. Processing and Spinning Cocoon Become Silk Thread

Cocooning equipment used by small and medium business is made of bamboo, wood and plastic (seriframe). The silk entrepreneurs' behavior while silkworms are cocooning is keeping the humidity and the air

circulation during the cocooning process and organizing humidity by pouring water over the flour of silkworm cultivation room.

Small and medium entrepreneurs always clean the cocooning equipment before and after the silkworm cocoon and protecting the silkworms, so they are safe while cocooning. The treatment in cocooning stage should be careful. If the treatment in cocooning stage is not done well, the quality of cocoon filament will be influenced and the previous stage will be meaningless. (Atmosoedarjo et al, 2000).

Cocoon which is produced by natural silk entrepreneurs is around 20-40 kilograms/box, 10 kilograms of cocoon can produce 1 kilogram of raw silk thread after it has been spun. Before the cocoon is spun, cocoon is cooked to omit the feces stuck and to make the silk entrepreneurs easy to find the tip of filament of silk thread. After the cocooning process, the entrepreneurs separate the good cocoon and the damaged cocoon. Damaged cocoon is reprocessed to be the basic material of sarong.

The cocoon spinning of small and medium silk entrepreneurs is still conventional so it takes a long time and high production cost. Many cocoons are not used well because the cocoons produced do not have good quality. It is observed from Salojampu sutera which still used traditional reeling equipment so the quality of silk thread produced is low

Challenge faced by small and medium silk business is low production and quality of cocoon produced by the silkworm cultivation. That kind of condition gives choices to silk entrepreneurs to use silk thread from other region such as from Soppeng Regency, Enrekang and Minahasa, even the market demand of quality requires entrepreneurs to use import silk thread from China and Hongkong even it is more expensive than the local silk thread.

The low cocoon production and silk thread quality is also caused by the lack of socialization and training given to small and medium silk business about how to treat cocoon well. Knowledge and skill of silk entrepreneurs in handling cocoon crop is still low. Therefore, silk entrepreneurs needs to be prepared with knowledge, skill and entrepreneurship which supports the improvement of silk thread production and press the production cost.

4.2.4 Supplying Basic Material of Silk Thread

Basic material of raw silk thread used by small and medium silk entrepreneurs is local *sabbe* (silk), import silk thread from China and Hongkong, and *viscose* (not silk). There are two basic materials of silk thread provided for weaver activity, they are *lusithread* and *pakan* thread.

Silk entrepreneurs' behavior in supplying the basic material of eco-friendly silk thread is *degumming*, which is cooking and whitening thread to omit the feces stuck on the silk thread. After the thread is cooked, the silk entrepreneurs do process *maccello*, which is coloring the silk thread by using synthetic dye and natural dye.

Salojampu sutera and Ayoeng silk entrepreneurs use natural dye in *maccello*, the natural dye used are mango leaves, kumia wood powder, bark of Java tree, and coconut powder, by using lime fixation, alum and lotus tree. It reflects an action to minimize waste in the source. It is appropriate with the research finding that if natural dye is used, the waste produced can be degraded by the environment, (Sutara, 2009).

Entrepreneurs of Arni Kurnia Sutera, Juneda Silk, Akil Amin Silk, and Aminah Akil Silk still use synthetic dye in dyeing the silk thread. That is because the basic material and production by using natural dye is very limited and the color produced is not varied. In thread dyeing, silk entrepreneurs use Self Protector Tool (SPT).

Waste process from dyeing using synthetic dye is not done yet by small and medium silk business, as observed in Arni Kurnia sutera, Juneda Silk, Akil Amin Silk and Aminah Akil Silk, which throw the waste to ditch directly. Small and medium silk entrepreneurs do not build IPAL around the business location because that needs a lot of money and wide area.

Government has a role to do socialization related to eco-friendly silk business management by cleaner production technology, synthetic dye and IPAL construction appropriate with the waste produced by silk entrepreneurs.

4.2.5. Weaving and Drawing Motive on Silk Cloth

Weaving and drawing motive activity in those six small and medium silk business hire workers from another village. It opens an opportunity for broader scope so it can decrease unemployment. Weaving and drawing motive activity can recruit youths and adults, educated and uneducated.

The sustainability of weaving and drawing motive depends on the ability of the silk entrepreneurs to manage weaving activity by saving the resources they have. The behavior of those six silk business in environment-oriented weaving and drawing motive activity is by using pataasi water for many times until all is used, collecting and reusing the torn threads in weaving activity, cleaning all equipment before and after drawing motive, and reusing the string which has been used to tie the motive to tie traditional cake.

The behavior of Arni Kurniasutera in drawing motive activity which is environment-oriented is using rosin gum in drawing motive activity by technique *capandcanthing* for many times until all is used and the damaged cloth in drawing motive activity is not discarded but it is used motive sample. Arni kurnia sutera provides mask as Self Protector Tool for the workers. Environment-oriented silk entrepreneur realized by using resources efficiently through cleaner production which concerns on the sustainability natural resources. (Djajadiningrat, 2011)

Cloth produced by small and medium silk business in weaving and drawing motive activity consists of synthetic dye because the basic material, production, and colors are very limited if using natural dye. It is in line with the research finding that the dye waste can be degraded by environment if natural dye is used but the limited number of natural dye. (Bota, Welmince, dkk, 2014).

Those entrepreneurs process the solid waste by processing waste of silk cloth so it can be used to produce brooch, purse, fabric seat covers for coach, laptop bag and phone bag. The behavior of small and medium silk business in processing solid waste gives an *added value* for the entrepreneurs.

4.2.6. Silk Product Marketing

That entrepreneur's silk product is marketed through various media start from individual marketing, showroom, internet (Facebook, BB, and Whatsapp), and exhibition, cooperate with business partner, and other media. Innovation of silk design develops modern and traditional motives like *cobo'i*, stripe, *balo renni*, *phinisi*, batik, *lagosi harmoko*, peacock flower, *cakgellung flower*, logo-logo, and *pammu*.

Some of products are marketed in South Sulawesi and some of them are sent to many places in Indonesia such as Kalimantan, West Java, Jakarta, Bali, and Sumatera. Many foreign tourists from America, Germany, Italia, Dutch, Singapore, France, Africa, Australia, Malaysia and Thailand like silk cloth. It is proven that when the researcher was in the location, tourists from many countries stop by and buy silk product.

The behavior of those entrepreneurs in marketing product which is environmentally friendly is using recyclable package. Marketing of product with natural dye is done if they get orders from customers. Silk entrepreneurs market the accessories processed from silk cloth waste such as laptop bag, brooch, scarf, tie, phone bag, fabric seat covers for coach, and tablecloth. The behavior of those silk entrepreneurs is in line with the research finding that green marketing emphasizes environment protection without ignoring prosperity, but push the thought about how to relate market with environment protection, (Haryadi, 2009).

The behavior of silk entrepreneurs in marketing silk products which is environmentally friendly is still low. The limited types of natural dye and the price which tend to be more expensive causes the market of natural dyed silk is not optimum yet than the synthetic dyed silk. A strategy to solve the problem is support from government and stakeholders to guarantee the market of silk product which is environment-oriented.

V. Conclusion

The low comprehension of small and medium silk entrepreneurs is caused by the lack of socialization about cleaner production. Small and medium silk entrepreneurs have done some stages of cleaner production in supplying silkworm's food until the silk product marketing to realize environment-oriented silk business management. The limited number of products, basic material and type of colors produced by natural dye leads the entrepreneurs to use synthetic dye so there are more synthetic dyed silk products than natural dyed silk products. The large area and the expensive cost needed by the silk entrepreneurs to build Liquid Waste Installation is an obstacle in managing environment-oriented silk business.

Suggestion

Suggestions which can be proposed to develop silk business which is environment-oriented are as follows Small and medium silk entrepreneurs need to be prepared with socialization program, education and training of cleaner production and natural dyeing, therefore comprehension, attitude and behavior to realize environmentally friendly silk industry.

Serious commitment from regional government is required to develop environment-oriented silk industry followed by easy-implemented programs, they are: a) there should be an accompanying program which is more intensive from the elucidator to silk entrepreneurs about the cultivation of silkworm which is environment-oriented, so the silk thread production can be maintained, b) there should be a socialization about silk business activity which is environment-oriented by cleaner production and a training about natural dye, c) improving access of market of natural dyed silk whether domestic or in other country, d) building image of silk city center which is environmentally friendly which potential product is natural dyed silk products.

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