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UNDERSTANDING AND EFFORTS OF FURNITURE INDUSTRIES FACING ECO-LABELING IN CENTRAL JAVA AND YOGYAKARTA-INDONESIA

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ABSTRACT

Forest destruction in Indonesia has become a very serious problem and global concern. Eco-labels aim to combat illegal logging, illegal trading, and forest conversion. Eco-labeling in the furniture industry is slower in Indonesia than in competing countries such as China and Vietnam, where China has reached more than 1000 Chain of Custody (CoC) certification industrial units and Vietnam 238 units, while Indonesia has achieved only 78 units. But eco-labeling is perceived as a pressure on the international trade of the furniture industry. This study examines how the furniture industry in Central Java and Yogyakarta understands eco-labeling and what efforts the industry is making. Eco-labeling has a positive impact on the industrial environment and sustainable forestry, and it increases credibility/corporate image, market share, and profit. But not all buyers demand eco-labeling, so some companies deal with eco-labeling either by applying for certification or by looking for buyers that do not require the eco-label. Buyers who do not require the eco-label result in companies having less motivation to seek CoC certification. Other views about eco-labeling in the industry are also counterproductive, producing further obstacles to eco-label certification. Eco-labeling is often understood as unfair competition from developed countries, implemented as a barrier to entry into trade, and as inconsistent with The General Agreement on Tariffs and Trade (GATT)/The World Trade Organization (WTO). Eco-labeling is often considered a new form of colonialism rather than an instrument of environmental management.

Keywords: CoC; Eco-label; Furniture; Sustainable forest

1. INTRODUCTION

This study aimed to understand eco-labeling in the furniture industry in Indonesia and the way the industry deals with it. Issues related to eco-labeling have been dealt with by many prominent international trade and environmental organizations including the United Nations (UN), the World Trade Organization (WTO) through its International Trade Center, the US Environmental Protection Agency, the Organization for Economic Co-operation and Development, and the International Organization for Standardization (Naumann, 2001). But the success of eco-labeling depends on market demands, and eco-labeling could be in jeopardy if buyers do not require it as a condition of purchase.

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This would result in industries having no motivation to acquire eco-label certification; the furniture industry, for example, uses eco-label certification just for business reasons and not because of environmental consciousness (Santoso et al., 2013). Indonesia's deforestation rate is quite severe at 1.8 million hectares per year due to illegal logging (Seneca, 2004), even though it was reduced to 610,375.92 hectares in 2011 (Kementerian Kehutanan, 2012). Forests are needed as the lungs of the world to mitigate global warming. Green consumerism uses the eco-label as an instrument of sustainable tropical forest management. But if wood products without eco-labeling are denied entry into developed countries, this phenomenon may threaten exports of wooden furniture from Indonesia (Salim, 2010). The Indonesian furniture industry is an essential industry that can be relied upon to absorb labor; it has high local content with abundant and renewable raw materials. But while the eco-label has become a global necessity, eco-labeling in the furniture industry in Indonesia has moved rather slowly compared to competing countries such as China and Vietnam (Santoso et al., 2013). Recently, China achieved 1,827 furniture industry Forest Stewardship Council-Chain of Custody (FSC-CoC) certifications, and it is the world's largest exporter of furniture (Huang, 2013). Data also shows that Vietnam has 235 units, while Indonesia only has 78 units (FSC-CoC Certificate Database, 2013). The home furnishings industry that relies on wood, bamboo, and rattan has a total relationship influence induced by the industry, consisted of forward linkages and backward linkages based on the demand to the industry, its value of total linkages is the highest, i.e. 2.61, followed by the plywood industry and the like with a score of 2.44. Both of these values are above the average value of the entire industry, which is 2.00 (Ramdani, 1999). The total extent of the linkage, that is, an increase in revenues from both industries, will not be concentrated in the industries themselves, but will be distributed more evenly to other industry groups.

Eco-labeling is not an end but is a means by which to integrate environmental factors, in the socio-cultural realm as well as in economics and trade (William, 2004). The eco-label is a tool by which to measure the degree to which Indonesia manages forests and natural resources in a sustainable manner while seeking market opportunities for Indonesian products (Salim, 2010). Therefore, it is necessary to research why eco-label certification is slow in Indonesia compared with competing countries. How much do the furniture industries actually understand eco-labeling? What efforts are the furniture industries making with respect to eco-labeling?

The eco-labeling of products is required starting with the acquisition of raw materials, through the manufacturing process and distribution, and throughout the use, disposal, and recycling of waste, so as not to have a negative impact on the environment (Naumann, 2001). The conceptual model of consumer willingness to pay a premium price for certified wooden products is influenced by three independent variables, namely, environmental awareness, the importance of environmentally friendly products, and eco-friendly production activities (Vlosky et al., 1999). A greater environmental awareness affects the willingness of consumers to pay the price because they feel there is conformity between the products and the amount of money that must be spent (Shen, 2008).

Environmental labeling and certification programs are very important in some countries, it is not only in developed countries but also in developing countries (Landmann et al., 2001). The Chain of Custody (CoC) certification that affects forest product markets ensures that wooden products are made from materials purchased from green-certified sources. The benefits to be obtained are the driving factors for certification. Eco-labeling also involves social aspects, not only with respect to the relationship between the producer and the consumer but also with respect to cultural values and social norms. It means combining the economic and social aspects, which can affect the markets in the deployment of eco-labeling (Salim, 2010). The pressure of competition, CoC certification and eco-labeling schemes and the complexity of the various agencies involved make it difficult for members of the forest industry to understand the

use of eco-labeling certification in accordance with their needs (Anderson, 2002). The success or failure of eco-labeling depends on consumer awareness, the awareness of the manufacturer, market demands, the role of stakeholders, the environment product information scheme, and an integrated approach (Rubik et al., 2007). Government also plays an important role in helping people to understand the eco-label. The furrniture industry is currently facing the Timber Verification Legality System (*TVLS) or Sistim Verifikasi Legalitas Kayu* (SVLK), mandatory program certification from the government (Departemen Kehutanan, 2009). But this certification is expected not to increase the burden for the furniture industry.

Indonesia is one of the world's leading exporters of wooden furniture and makes a significant contribution to world exports. Other developing countries that are major exporters of wooden furniture include Brazil, China, Malaysia, Mexico, and Thailand. Wooden furniture exports from developing countries are expected to increase in the coming years, and the furniture industry in Indonesia must be able to compete with those industries in other countries (Hira, 2006). Therefore, this studi analyzes how the furniture industry in Central Java and Yogyakarta understands eco-labeling, why eco-labeling is proceeding more slowly in Indonesia than in competing countries, and the efforts being made by furniture companies in Central Java and Yogyakarta in dealing with eco-labeling.

2. METHODOLOGY

This research is a descriptive analytic study and a synthesis of quantitative and qualitative approaches, and mixed methods research (Creswell, 2010). Data collection for purposive sampling was done through survey questionnaires and in-depth interviews. The qualitative data were collected through the secondary data and interviews with the Association of furniture industries and handicraft Indonesia or *Asosiasi Industri Permebelan & Kerajinan Indonesia* (Asmindo), industrialists, ecolabel certification bodies, buyers, and agency environmental managers. The case study method was used to study the problems of eco-labeling with more focus and depth. Respondents were from all wooden furniture industries in Central Java and Yogyakarta Indonesia and were also international buyers.

Asmindo includes 2016 export-oriented furniture companies in Indonesia, 778 of them located in Central Java and Yogyakarta. Asmindo also includes eight regional commissariat clusters (Komda), namely Yogyakarta, Jepara, Blora, Semarang, Demak, Magelang, Solo, and Klaten. Each Komda is composed of furniture companies that vary among the standard Ministry of Indonesia industrial classifications of large, medium, small, and home-based (Departemen Perindustrian, 2009). According to Vidal, firm size is a significant factor in eco-labeling. Cluster analysis has shown that company size is an important variable with respect to the number of producers that become certified. Large companies are more aware of the benefits of CoC certification (Vidal, 2003).

Thus, this study directed its sampling toward the large company category, with companies having at least 100 employees. There are 74 large companies in Central Java and Yogyakarta Indonesia. Slovin’s formula calculation for a minimum sample is at least 43 respondents; thus, the 53 industrial respondents and 32 buyers are sufficient to meet the needs and statistics test of data adequacy. The research model shows the relationships among the latent variables that formed a structured equation model. Causal relationships between variables formed formative and reflective relationships; therefore, the data was processed using PLS software (Ghozali, 2008). Data processing was done using SmartPLS software, with latent variables measured via its indicator variables using a Likert scale.

3. RESULTS

Model 1, Understanding of Eco-labeling, is shown in Figure 1. The results, consisting of the testing of eleven hypotheses, are shown in Table 1. The conclusion is that Understanding Eco-label is influenced by the Role of government, Educational background, and the Role of Asmindo. Understand eco-labeling does not mean that a company will seek certification, but a company may also not seek certification because of other perceptions such as the idea that eco-labeling is a barrier to entry into international trading, created by a developed country. The relationship among the variables in Model 1 is illustrated in Figure 1. Seeking certification is influenced by the understanding that eco-labeling is beneficial and has become a global necessity. Understanding eco-labeling but not yet being certified occurs only due to business motives. Other perceptions of understanding eco-labeling include that it stems from unfair trade of developed countries and that it is contrary to the GATT/WTO.

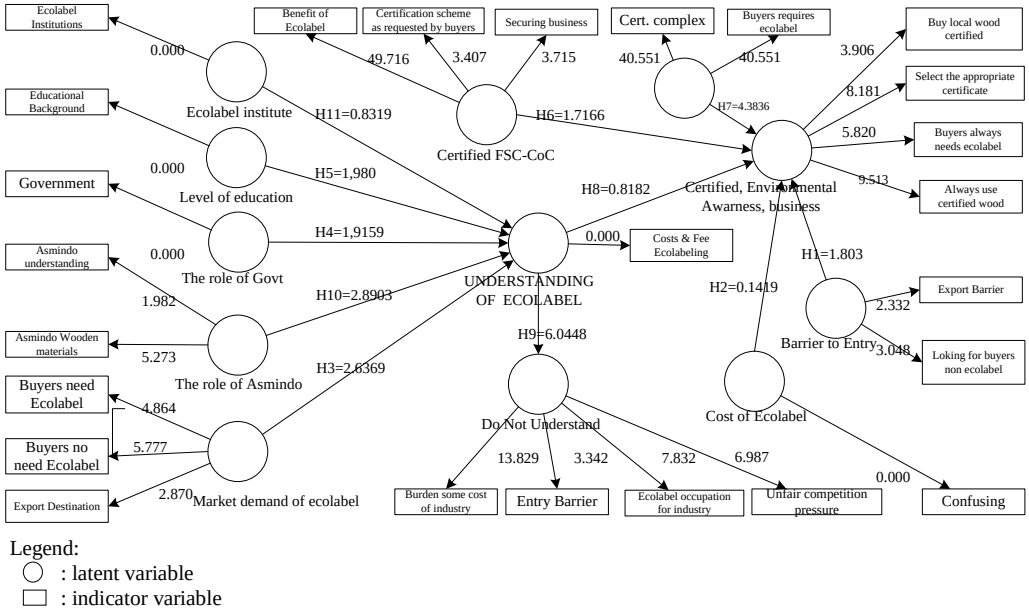

Figure 1 Understanding of eco-labeling

Table 1 Path Coefficient T-Statistic and Testing Hypotheses of Understanding of Eco-label

Hypothesis	Relations	T statistics ([O/STERR])	Remark	Level of significance
H1	Contrary to WTO/GATT →Understand and Certify	1.0803	Rejected	-
H2	BML→ Understand and Certify	0.1419	Rejected	-
H3	Ecolabel is Export Requirement → UNDERSTANDING	2.6369	Accepted	High significance
H4	Govt Role →UNDERSTANDING	1.9159	Accepted	Significant
H5	Educational background →UNDERSTANDING	1.9800	Accepted	Significant
H6	Ecolabel Global Necessity → Understand and Certify	1.7166	Accepted	Significant
H7	Understand and Did Not Have A Certificate → Understand and Certify	4.3836	Accepted	Very high significance
H8	UNDERSTANDING→ Understand and Certify	0.8182	Rejected	-
H9	UNDERSTANDING→ Do not have and do not understand	6.0448	Accepted	Very high significance
H10	Role of Asmindo → UNDERSTANDING	2.8903	Accepted	High significance
H11	Industrial Counseling →UNDERSTANDING	0.8319	Rejected	-

The numbers between the latent variables indicate the level of significance of the relationship of the variable to other variables. A hypothesis is accepted if the number of relations is greater than t = 1.684 (α =10 %). The levels of significance are shown in Table 2.

Table 2 Level of significance

Sample	Low Significance	Normal		High Significance		Very High Significance
N	α = 20% CL=80%	α = 10% CL=90%	α = 5% CL=95%	α = 2% CL=98%	α = 1% CL=99%	α ≈ 0
53	1,300	1,684	2,010	2,390	2,682	≥ 3.450

Model 2 is Efforts of Industry Facing Eco-labeling, as illustrated in Figure 2.

There are nine hypotheses tested in Model 2, and the results are shown in Table 3. The conclusion is that the latent variable of Efforts Industry is influenced by the Role of government, Educational background, and Role of Asmindo. The option of an appropriate certification scheme depends on the buyer's need. Producers choose the right time and/or seek joint certification with other firms. Companies also consider choosing other buyers that do not require eco-label, and they have the view that eco-labeling is a hindrance to export.

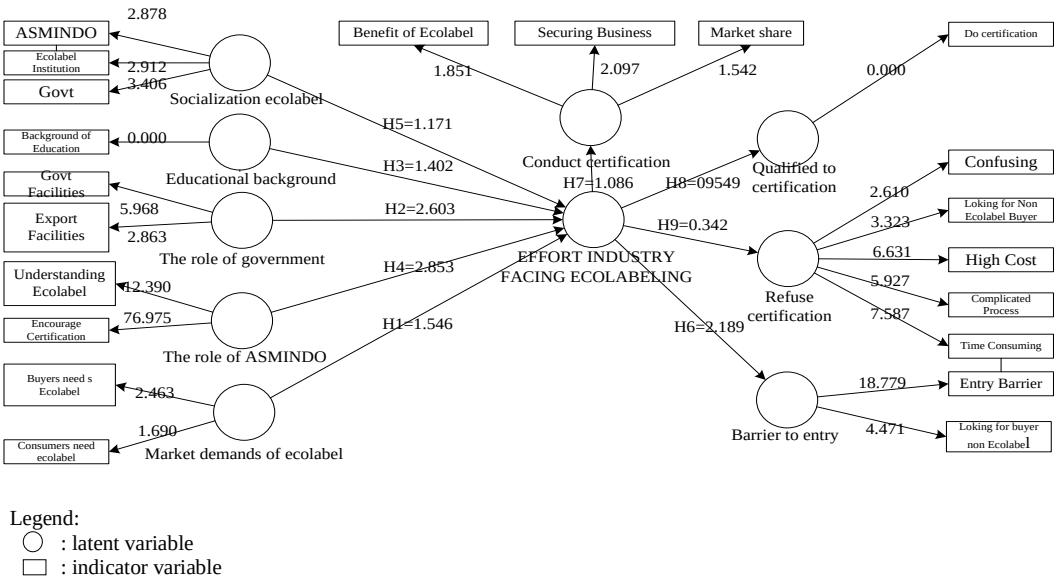

Figure 2 Efforts of furniture industries facing eco-labeling

Table 3 Path coefficient T-statistic and hypothesis tests of efforts of furniture industries facing eco-labeling

Hypothesis	Relations	T statistics ([O/STERR])	Remarks	Level of significance
H1	Market Requires→EFFORT	1.5476	Rejected	-
H2	Govt Role→EFFORT	2.6025	Accepted	High significance
H3	Educational Background →EFFORT	1.4017	Rejected	-
H4	ASMINDO Role→ EFFORT	2.6531	Accepted	Very high
H5	Socialization Ecolabel →EFFORT	1.1705	Rejected	-
H6	EFFORT→Not certify	2.1688		High significance
H7	EFFORT→Conduct certification	1.0860	Rejected	-
H8	EFFORT→Compliance certification	0.9549	Rejected	-
H9	EFFORT→Not conduct certification	0.3422	Rejected	-

4. DISCUSSION

The understanding of eco-labeling is significantly influenced by the role of government, educational background, and the role of Asmindo. The understanding of eco-labels within the furniture industry is very diverse. Some members of the furniture industry assume that eco-labels are trade barriers put in place by developed countries, so these members do not want to seek certification. Some furniture industry members understand eco-labels but do not want to seek certification and will seek eco-label certification for business purposes only if the buyer requires it. Companies seek certification to a significant degree due to the understanding that eco-labels can benefit market penetration and project the image that the company cares about the environment. They also argue that eco-labeling has become a must for international trade and a global necessity. Efforts of furniture companies dealing with eco-labeling are significantly influenced by goverment policy in this regard, particularly the Department of Industry, Trade and Forestry. The role of Asmindo, educational background, and socialization by eco-label manufacturers also have a significant effect on the furniture industry's efforts in dealing with eco-labeling.

Part of the furniture industry considers that eco-labeling is an attempt by developed countries to restrain trade and that it is inconsistent with the GATT/WTO. These try to find other buyers and do not pursue eco-label certification. This group also believes that they have never been responsible for the destruction of forests. Some members of the furniture industry conduct certification only to meet the demands of the market and see the business benefits. But other members of the furniture industry are not willing to seek certification and do not do so, because of the cost of certification is expensive; they make efforts to enter other markets that do not require eco-labels. Given the numbers of buyers who do not require certification, these members of the furniture industry have no motivation to seek certification.

Eco-labeling has a positive impact on environmental management in the furniture industry, with respect to solid waste and dust. Members of the furniture industry believe that the eco-label has a significant positive impact on forest conservation, as indicated by the increasing number of certified forests. The furniture industry has now started planting some 13,000 super teak trees in the area of Wonogiri, and they plan to initiate carbon trading. This suggests that the eco-label has had a positive impact on environmental awareness. They also believe that the eco-label will increase their market share and profit, because it will help the industry build a better image.

In this case, there is a need to improve education, the role of government, and the role of Asmindo. The ever increasing demands of the market will continue to induce the furniture industry to engage in voluntary eco-label certification, because with a positive impact on the market, it also has the effect of increasing profit. Buyers' demands for products certified with eco-labeling also have a major influence on the furniture industry with respect to certification. This is indicated by the growth of furniture industry certification in increasing numbers. According to the FSC database, in 2013, the number of certified eco-labeled companies in Indonesia was 78, and increase only 18 units in from the 62 units in 2012 (Santoso et al., 2013).

The impact of eco-labels on the environment and on the preservation of forests is also significant, as indicated by the increasing breadth of certified sustainable forest. For instance, the type of management of the teak forests like *Pengelolaan Hutan Berbasis Masyarakat Lestari* (*PHBML*) or Sustainable Community Based Forest Management, has been applied in various forest areas of Perhutani such as Selopuro, Sumberrejo, Wono Makmur Lestari, Giri Catur Manunggal, Wonogiri Central Java, Manunggal Wana Lestari, Yogyakarta, and Rejo

Wana Park in Sragen (8 villages; 1,404 acres). Lembaga Ekolabel Indonesia (LEI) states that certification in Indonesia until June 2012, covering 411,690 hectares of natural forest, 970,112 hectares of industrial tree plantations and 26,719 hectares of community forests.

Eco-labeling has also had an impact on environmental management in the furniture industry, as indicated by the application of cleaner production related to the principles of reduce, reuse, and recycle (Thorpe, 1999). The furniture industry has adopted standard safety and waste management practices, so pieces of wood and sawdust are processed into wood craft products, resulting in a minimizing of waste. In furniture manufacturing and finishing, the processes use water-based material that is safe for health and for the environment.

In this model, the government, the eco-label certification bodies, educational background, and Asmindo play a significant role in influencing the management of environmental impact by the furniture industry in Central Java and Yogyakarta. The government's role in this regard, through the Ministry of Industry, Trade and Forestry, has a major influence on the environmental management of industrial furniture, based on the eco-label system. The role of eco-labeling organization is to promote the vision of an eco-label on the importance of forest conservation.

5. CONCLUSION

The furniture companies in Central Java and Yogyakarta do not all have the same understanding of eco-labeling. Most of them perceive eco-labeling as an attempt by developed countries to hinder the furniture industries of developing countries in international trade. This perception has a negative impact on the seeking of eco-label certification. This understanding has made the process of eco-labeling relatively stagnant or at least slower in Indonesia than it is in competing countries such as China and Vietnam. Industry certification has become a global necessity, and companies will be less likely to find potential non-eco-label markets in future. However, some companies are aware that the eco-label is for environmental purposes and have found that eco-labels provide a business opportunity to penetrate the world market; they also do not consider the cost of certification an expense but an investment. Companies that have been certified CoC stated that eco-labels have had a positive impact on the environment of the industry, have improved sustainable forestry, and have improved the companies' credibility or corporate image, market share, and profit. Not all buyers demand eco-labeling; in fact, only 21% of buyers require it. So companies' efforts to deal with eco-labeling include either applying for certification to meet the demand of buyers or looking for buyers that do not require the eco-label. The main reason for certification is the business advantage rather than environmental awareness.

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