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Cluster, Consumers and Producers who care about Origin Labeling

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Abstract

Gedong Gincu mango (Mangifera indica var. Gedong) becomes the backbone of Indonesian fruit exports because of its unique taste, shape, color, and rich aroma. Mango producers want to sell their products at high price while consumers in the opposite side. Origin label can bridge this because it gives guarantee to the consumers that the product is of high quality. The problem in this study is not all producers and consumers care about the origin label. Identification of the problem is (1) the producer or consumer groups who care about the origin label, (2) what dominant factors encourage producers and consumers to care about origin labeling the label from the area and (3) what kind of social engineering for the origin label to be accepted by producers and consumers. The research aims to map the target and market segments of the labeled Gedong Gincu, so that it is more efficient for distribution marketing. If distribution marketing is efficient, producers and consumers will be benefited. The research was conducted from May to October 2013, and survey with 460 respondents consisting of 260 producers and 200 consumers with simple random sampling (producers) and systematic random sampling (consumers). Data were analyzed by using a cluster analysis and followed by logistic regression. The results are expected to provide the government with information that will help make policies that are beneficial for producer, market agent, mango exporters, the private sector, as well as for consumers.

Keywords: Clusteranalysis, Logistic Regression, Origin labeling, Gedong Gincu Mango, Producer and Consumer care.

Introduction

Gedong mango Gincu and Arumanis are widely exported to the Middle East (70%). This figure is very small if compared with the market share of other countries such as India, Yemen, Pakistan, Kenya and the Netherlands (44%). Other export destination countries are Singapore at 18% with the main competing countries namely Malaysia, Thailand, India, Pakistan, Philippines (FAOSTAT, 2012 in Purnama, 2014). Indonesian mango export value in the year 2011 reached US $ 2,024,952[1]. Mango production in Indonesia reached 2.1 million tons in 2011 and more than doubled from the previous year with production centers in East Java (35%), West Java (17%) and Central Java (16%).

Gedong Gincu mango has become the main commodity of West Java with its production centers are Indramayu, Kuningan, Cirebon and Majalengka. Gedong Gincu mango constitutes about 35% of the total mango production in West Java. Gedong Gincu mango production in the production centers reaches 0, 26 million tons; outside the production centers it reaches 0, 10 million tons, bringing the total production of mango Gedong Gincu in West Java 0, 36 million tones in 2011[2].

The study was conducted in Cirebon, one of the regencies that has launched a movement for planting a million Gedong Gincu trees since 2001. Previously, Cirebon was assisted by the Horticulture Agribusiness Development Project (P2AH) in 1998 with a hundred thousand seedlings propagated through budding in an area of 1000 hectares. Results of previous studies of the mango producers in Cirebon Regency were composed of traditional producers (28.85%), transitional producers (39.62%) and commercial producers (31.54%). Traditional producers are characterized by tree ownership with less than 30 trees, while transitional producers have less than 100 trees, and commercial producers have more than 100 trees. Another characteristic is that traditional producers have <40% of share and their market destination is traditional markets. Transitional producers, on the other hand, have their share between 40-50% and their market destination is traditional and inter-island domestic markets, while commercial producers have > 50% of the share and their market is export or supermarkets.

Producers are more interested in commercializing Gedong Gincu mango because it is more profitable. From the results of the research conducted in Cirebon, Indramayu, and Majalengka it was revealed that many producers have shifted from planting rice into mango trees. Even though mango farming costs more than rice, it is still more profitable than rice. The average income per-hectare of rice producers is around Rp. 10,000,000 while the mango producers earn Rp. 15,000,000 per hectare. The main problem is marketing in that prices often fall during the harvest. In addition, mango quality is not uniformly good in terms of fruit maturity level, grading, sorting and cleanliness. Often producers do not use special knives during the harvest which usually causes mango sap to be scattered everywhere,

sticking to the fruit and making mangoes appear dirty. Producers will be careful at the time of harvest when there is guarantee that they will have better price for their mangos. On the other hand, consumers will not want to pay more if the product does not meet their expectation.

Of exploratory research, it was revealed that there are two types of producers, those who care about and those who do not care about the origin labeling. Similarly, there are two types of consumers in that those who buy Gedong Gincu but do not pay attention to the label, but most importantly the price is cheap. There is also the type of consumers who cares about label, and these consumers are willing to pay more because they think the label indicates quality and food safety. Middle and upper-income consumers will prioritize quality rather than quantity.
Origin labeling is defined as original brand name, such as *Jeruk Medan*, *Nenas Subang, Ubi Cilembu, Apel Malang, Beras Cianjur* etc. When consumers hear the names of such areas, they immediately think of superior commodity. Thus, if consumers hear the names of Cirebon, Indramayu, Majalengka they immediately associate them with Gedong Gincu mangoes. Origin labeling needs to be developed because the presence of the local brand (origin labeling) could be a guarantee of quality and becomes icons of certain areas or may even become the icon of Indonesia in the global market. Furthermore, the local brand may also become Country of Origin Labeling (CoOL), and through the labeling producers may be able to improve their welfare.

In terms of changes in consumer preferences due to their increased education, income, and knowledge, consumers want quality assurance of the product they buy. To meet consumer desires, producers are trying to convince consumers by providing a label on their quality product. In each production center, there are many producer groups that use the label; however, there are labels that include the origin of the area and there are also labels that do not include it.

Based on responden perception, Gedong Gincu mango (Mangifera indica var. Gedong) is famous for its shape, flavor and distinctive aroma. Each production center is unique. Gedong Gincu mangoes from Cirebon for example have the smaller size with a greenish orange-red color and sweet and sour taste. Gedong Gincu mangoes from Java, on the other hand, have the larger size with orange color and sweet taste, while Gedong Gincu mangoes from Indramayu are small with greenish red skin and have a sweet taste. Based on the observation, it is revealed that consumers have stronger interest in Gedong Gincu mangoes than any other types of mangoes. Gedong Gincu enjoys the biggest market share reaching 46.22% compared to Aromanis 29.98%, Cengkir 8.78% and other types 15.02%.

Age of Consumers, income, gender, education, knowledge, reference group influence their tastes for mangoes. Wilingness to Pay (WTP) consumers is higher if the mango is in accordance with their expectations in terms of appearance, quality and it is free of pesticide. Although mangoes may contain pesticide, the pesticide content has been reduced and the fruit is safe for consumption[3].

Problem Statement: Both producers and consumers are faced with different markets. Producers want to have a better selling price with the existing quality, while consumers want a lower price with premium quality. Producers tend to face the oligopolistic market because there are 1-5 traders who would buy their mangoes. While consumers are faced with a market approaching perfect competition characterized by many sellers and buyers, relatively similar products, producers are free to enter and leave the market. Producers cannot fix the price or in other words buyers and sellers may have a bargain as they are perfectly knowledgeable about the product. In such a situation, both producers and consumers will optimize their knowledge to get the level of profit (for producers) or maximum satisfaction (for consumers).

Producers want to use the origin labeling providing that it benefits them, despite having to increase the cost of production. Origin labeling should provide extensive information to consumers, so the market is efficient, and asymmetric information does not occur, thereby increasing the demand and quality assurance[4-6]. Producers must consider the characteristics of consumers who purchasing mangoes altruistically, and they must also pay attention to their demographics, socio-economy, cultural traits, personality and attitudes[7].

When choosing different labels, consumers depend on their belief values and their reference. In addition, they respond differently to the products with and without labels[8]. Competence, education, intellectual capital are factors that distinguish consumers who care about and who do not care about the environment[9]. This statement relates to the origin label, where the label is supposed to reflect the origin of the products that are free of pesticides and chemicals that can pollute the environment. The label becomes important to bridge producers and consumers. Consumer will may more for safety and qualified product, similarly, consumers believe that the label serves as a guarantee of quality. The problem is which producer group is willing to care about and sell quality mangoes, and which consumers are willing to pay more and care about quality. Furthermore, which dominant factors that drive producers to sell labeled products and which dominant factors that drive consumers care (concern). All of this can provide producers with information about their market targets. Furthermore, which dominant factors that drive producers to sell labeled products and which dominant factors that drive consumers to care about and are willing to pay more for better quality? All of this can provide producers with information about their market targets.

Objective of the Paper: Knowing the producer and consumer groups who care about origin labeling makes it easier for the

government to assist producers, and this will determine which groups would receive optimum government assistance. Similarly, knowing the segment of consumers who cares about the origin labeling makes it clear for producers to decide the target market of their labeled products, thus reducing the cost of marketing and information marketing strategy. The specific objectives of this research to determine (1) which segment of the producers and consumers who care about the origin labeling, (2) what factors that encourage manufacturers and consumers to care about the origin labeling, (3) what kind of social engineering of the origin labeling that can be received by producers and consumers.

Methodology

Research Method: The study used a survey method, and data were collected through observation, questionnaires and literature review. Primary data were obtained from the field data in cross section, while the secondary data were taken from the Central Bureau of Statistics, Ministry of Agriculture and related agencies.

Place and Research Time: The study about the consumers in Bandung was conducted from May to August 2013, and the study about the producers in Cirebon was conducted from May to August 2014. Previous consumer data from Bandung revealed that Gedong Gincu mangoes from Cirebon were marketed to Bandung, while data from the manufacturers of mango producers in Cirebon serves as a center of mango products in West Java.

Samples Size: Sample was taken by using simple randon sampling for producer, while consumer data were taken by using a systematic random sampling. The total samples of 460 people consist of 260 producers and 200 consumers. Producers samples were taken in Cirebon (2,845 people) spread over 4 large districts namely Astanajapura, Greged, Dukupuntang and Sedong. Sampling was taken in every district in proportion i.e. in 46 people in Astanajapura, 83 people in Greged, 35 people in Dukupuntang, and 96 people in Sedong. Consumer samples were taken at 10 supermarket spread across Bandung City. Twenty respondents were taken from each supermarket.

Group Clustering: Producers and consumers are divided into two groups namely producers or consumers who care about the origin of the label with the producers or the consumers who do not care about the origin label. Producers will keep the quality of mangoes and care about the origin label if it is considered important by consumers. Similarly, consumers will pay more if the label is important as a guarantee of quality.

Logistic Regression: To determine the classification and factors that are most influential to producer and consumer awareness of the label, a logistic regression analysis was made with the dependent variables consisting of a category 1 if the producers or the consumers care about the origin label and category 0 if the producers or the consumers do not care about the label from the area. Independent variables in the logistic regression model are attributes in the producer or consumer awareness of the origin label. Tests on the model were simultaneously and partially performed. In general, logistic regression models were formed[10].

$$\text{Ln}\,\frac{p}{1-p} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k + e$$

Description: Equation $\frac{p}{1-p}$ called the inclination ratio (odds ratio), Ln is the log of the odds ratios not only linear with X but also with the parameter β1, Ln $\frac{p}{1-p}$ = Producer or consumer care about the origin label of the area, Ln $\frac{p}{1-p}$ = 1, if the producer or consumer care cares about the origin label of the area, Ln $\frac{p}{1-p}$ = 0, if the producer or the consumer does not care about the original label of the area, P = Probability, α = constant, β_1,., β_k = Intercept or logistic regression coefficient, which means that probability of perception is of β1, when other variables are zero, $X_{1,2,\ldots,\ k}$ = attributes producer or consumer care about the origin label of the area. Targets of the market, number of the trees, revenue, and sideline jobs family members (for manufacturers). Gender, age, education, income and number of family members (for consumers) e = Residual

Results and Discussion

Producer: Producer Characteristics: Producers in this case are the producers (67%), collectors (23%) and wholesalers (10%). The duration for producers, traders and wholesalers in producing Gedong Gincu is > 3 years (10%), between 4-10 years (41%) and longer than 10 years (59%). Generally, traders and wholesalers are also producers. One hectare of land can be cultivated with around 100 mango trees, thus the average cultivated land for Gedong Gincu mangoes is below 0.5 ha. Average producers have done well, and there are about 23 producer groups who have cultivated their land by implementing Good Agricultural Practices (GAP). The producers who care and do not care about the origin label from the following areas are as follows:

Producer Group Who Care about Origin Labeling: Labeling is like a trademark that can be deceiving and provide information about the producers and the product. The label serves as a guarantee to consumers that the product is of quality[11]. In addition, labels for producers serve as a way of promotion, bearing words such as "Fresh" and "Natural" which has different meanings. Freshness means that products are freshly picked from the garden or the date that shows the product has just been harvested. While "natural" means that the product does not contain chemicals or pesticides and is safe for consumption[12,13].

Table-1
Producers Who Care and Do Not Care about the Origin Label

Variable	Producers			
	Producers who care about origin label	**%**	**Producers who Do not care about origin label**	**%**
Number of trees	> 150	13	< 150	87
Outside job	Entrepreneur	32	Work the rice field	68
Family member (people)	>5	15	<5	85
Income (million rupiah /month)	>6	5	< 6	95
Education (year)	12 (High School)	26	<12	74

Producers in this case are farmers, and they are grouped among farmers who care about the origin label and the farmers who do not care about it, and there are significant differences between these groups. The test showed that the number of trees (related to groups of farmers) have p-value less than 0.05, both for the number of trees (Code 2) and (Code 3). Code (2) shows the number of trees owned between 50-150 trees or groups of transitional farmers, and code (3) shows the number of trees that are less than 150 trees or groups of commercial growers. This shows that transitional farmers and commercial farmers care about labeling.

Another variable that indicates whether or not the producers care is their sidelines (p = 0.007), types of job 1, namely self-employed (p = 0.003) that showed only kind of their sidelines that could influence the self-employed farmers with regard to the label. Next is the education variable (p = 0.000). Of the three variables, when viewed from their value of exp (B) or their odds ratio values, the education variable has the highest odds value compared to the others. This shows that the higher the education level of farmers the more likely they care about the labeling (Table-5).

The Influencing Factor that Producers Care for Origin Labeling: Table-2 illustrates the factors that drive producers to care about the origin label, which are their number of trees they cultivate, their sidelines, and education. Transitional farmers who have between 50 and150 trees showed the more trees they have the more they care about labeling. Similarly, the commercial farmers who have more than 150 trees showed the more trees they have the more they care about labeling. This happens because there is an opportunity for the transitional farmers to enter the modern market or supermarket, while commercial farmers already have already reached export markets. The modern market as well as export market requires that mangoes be fresh, natural, high quality, safe for consumption as indicated by the label.

Farmers' sidelines among others are self-employment (Code 1) and working on the rice fields (Code 2). Farmers with sidelines show that they care about labeling more that those working on the rice fields. This has something to do with their income. Farmers with self employment earn more those working on the rice fields. They use their extra income to take care of their mango trees in order to produce quality harvest, which is costly especially during the flowering stage and rainy season. The more extra income they earn the more they care about labeling. Similarly, the overall income variables show that farmers care about the origin label.

Origin labeling could be developed into a country of labeling that is characteristic of the product that comes from a country listed on the label. The label gives the signal to the consumers to make decisions quickly, whether to buy or not[14] in othe side Country of Origin Labeling (CoOL) could increase the cost of production[15].

In addition, CoOL increases consumer confidence by seeing the label of the product. CoOL costs have shifted from producers to processors and retailers, and manufacturers will benefit while consumers will be harmed[16]. This could also happen to the origin labels because these can become the forerunner or the starting point of CoOL.

Farmers' education factors become important in this study. The higher education of farmers the more they care about the origin label. When linked with the characteristics of consumers, farmers starting with high school education care about the origin label. Average farmers' education is primary and secondary school; therefore, it is understood that there are few farmers who care about the origin label. This also causes the farmers to have no orientation towards producing products that are safe for consumption. Food safety factor should pay attention to pesticide-free, free of chemical fertilizers and semi organic oriented farming has not been their priority. According to farmers, semi organic farming is difficult because at the time of

flowering, mango trees should be sprayed with a substance to prevent flowers from falling. Spraying is carried out more intensively in the rainy season, and if spraying with pt substance is not done, there is no fertilization.

Farmers have not had concern that the label should indicate food safety (Table-2). Farmers assume that fertilizers and pesticides are used in accordance with the rules, and it is unlikely that the mango can be cultivated semi organically. There are some farmers who use organic fertilizers mixed with chemical fertilizers, but the chemical composition is higher. Farmers consider that although chemically fertilized, the fruit is safe for consumption. On the one hand, consumers do not know if mangoes can be grown organically.

Consumer: Consumer Characteristics: Average consumers who live in Cirebon buy mango in supermarkets, traditional markets and some have bought from a neighbor. While consumers in Bandung always buy mangoes at the supermarket because this type of mangoes is rare in traditional markets. For consumers in Cirebon, Gedong Gincu is not an exotic product, different from the consumers in Bandung who consider it as an exotic fruit. The price differential at harvest is approximately Rp. 20.000 at the consumer end in Cirebon, while in Bandung the price may reach Rp. 35.000, - per kilogram (between 3 -4 mangoes). When mangoes are out of season, the price could reach Rp. 50.000, - per kilogram in Bandung.

Table-2
Factors Distinguishing Producers Groups Who Care and Do not Care about the Origin Label

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	Number of trees*			14.458	3	.002 *	
	Number of trees (1)	-21.651	3688.083	.000	1	.995	.000
	Number of trees (2)	-3.882	1.022	14.420	1	.000	.021
	Number of trees (3)	-1.843	.857	4.618	1	.032	.158
	Outside job *			9.791	2	.007 *	
	Outside job (1)	-3.550	1.189	8.918	1	.003 *	.029
	Outside job (2)	-.579	.841	.474	1	.491	.560
	Family member			.736	2	.692	
	Family member (1)	-1.176	1.561	.568	1	.451	.308
	Family member (2)	-.877	1.101	.635	1	.426	.416
	Income			14.999	3	.002 *	
	Income (1)	-40.236	41058.108	.000	1	.999	.000
	Income (2)	-60.393	41322.550	.000	1	.999	.000
	Income (3)	-43.613	41058.108	.000	1	.999	.000
	Education *	.913	.186	24.052	1	.000 *	2.492
	Food safety			.000	3	1.000	
	No fertilizer (1)	19.941	19390.075	.000	1	.999	457320422.059
	No pesticide (2)	1.990	32561.091	.000	1	1.000	7.313
	Semi organic(3)	1.400	21125.030	.000	1	1.000	4.056
	Constant	17.155	45406.424	.000	1	1.000	28218609.476

Brand has a broader scope than the label in that the brand is not only described in a symbol (such as logos), but it is also more holistic. Brands can be a name, symbol / logo, forms, advertisements, slogans and the use of color combinations. Consumers today are more critical in purchasing and they do not simply accept the brand but they also notice everything related to the brand itself[17-20]. Some consumers want a simple label which gives a lot of information, consumers who care (concern) and do not care (do not concern) about the original labels are as follows in Table-3.

Consumer Groups Who Care about Origin Labeling: Consumers often use their intrinsic and extrinsic information in evaluating a product[21]. Intrinsic observations emphasize observation of the product, while extrinsic observation is associated with products that can be seen from the outside such as the brand name, the reputation of the merchant and product information from which it is derived that can change without changing the composition of the product[22]. In this study, consumers are grouped among those who care about and those who do not care about origin label, and there are significant differences between these groups (Table-6). ANOVA testing on cluster analysis aims to look at any factors that significantly differentiate one cluster to another cluster. The test will reject Ho if p-value <significance level of 5%. The results show the variables of education (p = 0.000) can be the difference between the clusters to each other. While other variables such as gender, family size, and income do not affect the distribution of clusters. In other words, the dominant factor that significantly differentiates between consumers who care and do not care about origin label is their education.

Consumer expectations are listed on the existing labels, one of which is product safety especially for those who are about the environment[23]. Similarly, educated young females pay attention to eco label products, and consumers will pay more for products that are eco labeled[24,25]. The origin label should indicate that besides the product is of good quality, it is also safe for consumption and the same thing applies to Gedong Gincu mangoes. This label is needed for consumers who are far from production centers, while for consumers who are close to the production centers are indifferent to these labels because they know the production process. Factors that distinguish groups of consumers who care and do not care about the origin of the label are as follows in Table-4.

Table-4 reveals that gender has no effect on consumer concern for the origin label, meaning that both men and women alike have similar response to the origin label[26,27]. Men are usually interested in shopping when they have more money while accompanying their partner.

The Influencing Factor that Consumer Care about Origin Labeling: Education is an important factor for consumers to care about the label from the area, and the higher the education of consumers the more they are about the origin label. Consumers with high school education start to care about the origin label, so there is a tendency that the consumers in the city care about labels more than those in the village. Although almost all city people have high school education, not all of them care about the origin label. In this case, there are consumers who perceive that the mangos with and without label have no significant difference as shown by their behavior that they do not pay attention to the label when buying mangoes. Most importantly the price is cheap for them (consumers indifferent to the origin labeling). There is also a type of consumers who cares about the label, and these consumers insist on buying labeled mangoes because according to them the label indicates the quality and food safety; therefore, they are willing to pay more regardless of the price (the fanatic consumers). Additionally, it also depends on consumers' tastes, habits, availability of mangoes, prices of labeled fruit, and other low priced fruits.

Table-3
Consumers Who Care and Do Not Care about the Origin Label

Variable	**Consumers**			
	Consumers who concern about origin label	**%**	**Consumers who do not concern about origin label**	**%**
Gender	Female	91	Male	9
Age (year)	> 47	35	< 47	65
Education (year)	12 (High School)	53	< 12	47
Income (million rupiah /bulan)	>6 Juta	38	<6 Juta	62
Family member (person)	3	59	.> 3	41

Table-4
Factors Distinguishing Consumers Groups Who Care and Do not Care about the Origin Label

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 (a)	Gender (1)	.164	.533	.095	1	.758	1.179
	Age	-.005	.023	.039	1	.843	.995
	Education *	1.716	.259	43.754	1	.000 *	5.563
	Income			4.319	3	.229	
	Income (1)	1.905	1.167	2.667	1	.102	6.722
	Income (2) *	1.944	.986	3.886	1	.049 *	6.985
	Income (3) *	4.635	4.21	2.097	1	.027 *	102.990
	Family member			1.620	2	.445	
	Family member (1)	1.646	1.410	1.363	1	.243	5.186
	Family member (2)	1.220	1.042	1.371	1	.242	3.387
	Constant	-24.711	4.071	36.846	1	.000	.000

Table-5
Analysis Cluster of Producers

	Observed		Predicted		
			CARE		Percentage Correct
			.00	1.00	.00
Step 0	CARE	.00	185	0	100.0
		1.00	75	0	.0
	Overall Percentage				71.2

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.903	.137	43.502	1	.000	.405

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
1	86.087(a)	.581	.831

Consumers' income has an effect on their purchasing power of the labeled mangoes. Consumers with income less than or equal to Rp. 6.000.000, do not care about the origin label. Those with income more than Rp. 6.000.000 start to realize the importance of the label. This commonly happens that consumers' rising incomes will change their behavior by buying a better quality of inelastic products while if their income increases, they tend to buy more elastic products or luxury goods with better quality. Gedong Gincu is inelastic, perishable, and bulky so that when consumers' income increases, customers will buy better quality mangoes. The origin label on Gedong Gincu can convince consumers that the mango has quality and freshness. Some research suggests that gender, age, education and income influence the consumer's decision to buy a product[28-32]. The

origin label indicates the packaging of the product and the name of the production area. The label must provide information about the product, including its brand, quality and its own brand image. Consumers' assessment of one product will be very important, and this assessment is a thorough assessment for consumer usability of a product and is dependent on what consumers pay and consumers get[33]. Consumers believe that the warranty shows the product quality, and labeling affects consumer decisions to buy[34,35].

Social Engineering for Origin Labeling to be Accepted by Both Producers and Consumers: The conditions in the field show that labeling can only be applied at the wholesalers, suppliers and exporters, and it is the merchant who enjoys the biggest added value by labeling their product. Farmers, on the other hand, have more activities but get smaller added value, which is unfair. If they want to get a great added value, this labeling should be done by them. At this stage, farmers are faced with difficulty because it is the wholesalers, suppliers and exporters who are more knowledgeable about market information.

Another problem comes from the farmers themselves in that there is no solid togetherness among them, so that it is the farmer group administrator that often benefits. Trust, transparency, and market prices become important in the participation of members of farmer groups, and farmers will actively participate if they have the ability, willingness and opportunity to do so. Farmers have a bigger opportunity to enter large modern markets as long as they can maintain their quality, quantity and product sustainability. Labels characterize the quality to be maintained, and it is the responsibility of the farmer to make it happen, and ultimately satisfied consumers are willing to pay more.

The label is for the benefit of consumers not to manufacturers, and not all market targets require the label. It is consumers with middle and higher income that become the market target of the labeled mangoes and they care about quality and are willing to pay more. The study revealed that farmers and consumers with high school education only care about the origin label. The higher education and the more trees, the farmers have the more they care about the origin label. As for consumers, the higher education and income they have, the more they care about the origin label.

Factors that must be considered in order for origin label to be accepted by producers and consumers are to emphasize that education that should be given to both producers and consumers. Producers should be educated to know that consumer trust is important in maintaining the quality of mango. If consumers have trust and are sure of the quality of the product, they are willing to pay more. Social Engineering Model for the implementation of origin Label as follows in Figure-3.

The quantity and continuity are related to the panting pattern that should be set so that the mango production is available all year round, and this requires capital. The private sector or investors play an important role in providing fund to help farmers with their cash flow. If they have good cash flow, farmers can focus on the cultivation and post-harvest activity. The biggest cost to produce mangoes is the maintenance after the mango trees flower, and this cost increases when the rainy season comes.

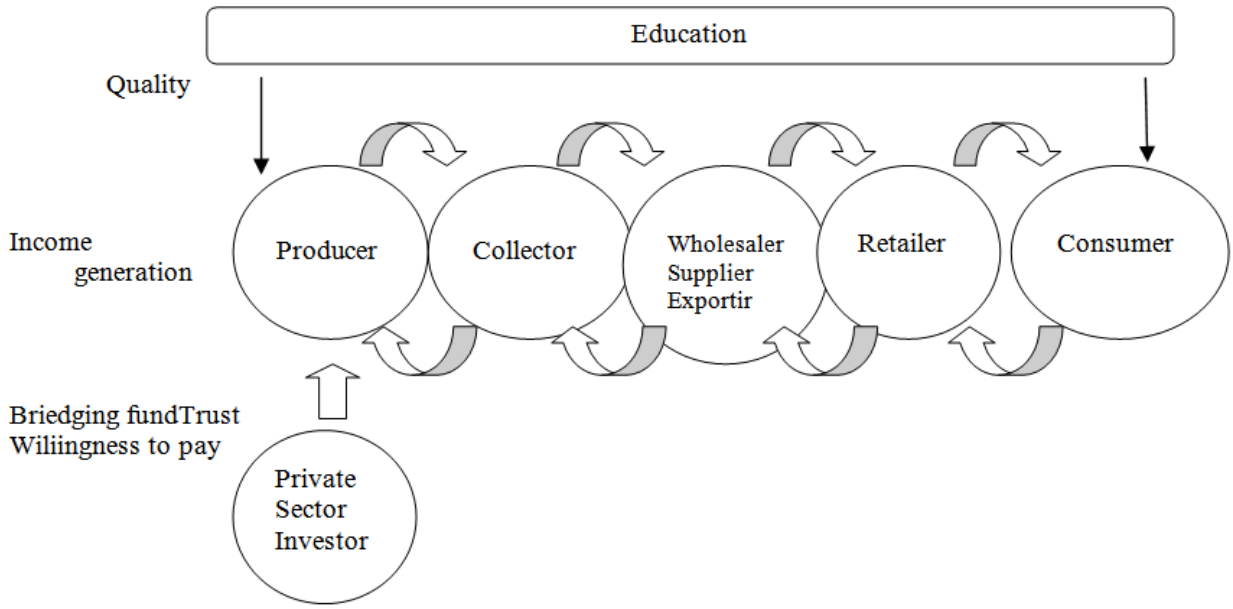

Figure-3
Social Engineering Model for the implementation of Origin Label

Table-6
Analysis Cluster of Consumers Classification Table[a,b]

Observed			Predicted		
			Care		Percentage Correct
			Tidak Care	Care	
Step 0	Care	Tidak Care	0	94	.0
			0	106	100.0
	Overall Percentage				53.0

a. Constant is included in the model, b. the cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp (B)
Step 0 Constant	.120	.142	.719	1	.396	1.128

Hosmer and Lemeshow Test

Step	Chi-suqare	df	Sig.
1	3.806	8	.874

Conclusion

There are differences between producer or farmer groups and consumers who care and who do not about the origin label. Factors that differentiate producers who care and do not care about the origin of the label are their number of trees, self-employment, sidelines, income and education. As for consumers, it is their education and income that influences their care for the origin label. Education is also a factor for both producers and consumers that plays a role in their care for the origin label.

Social engineering in order for the origin label to be implemented by producers is awareness that the label must show the quality and consumers have a trust in the product so that they are willing to pay more. To maintain the sustainability of quantity, quality and continuity, bridging fund plays an important role, and this can be done by the private sector and investors.

Recommendations: Producer and consumer care for the origin label benefits both parties. What must be considered is the education for producers in order to be disciplined and consistent in maintaining quality, and consumer trust must be maintained so that they have trust in the label that indicates the quality of the product. In addition, increased cooperation and participation between farming members must be addressed along with their responsibility, transparency in pricing, and added value that should correspond to their activities. The private sector or investor should act as bridging fund so the farmers have good cash flow, and they can focus on maintaining the quality and continuity of production.

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