



The Effect of Country of Origin on Brand Image, Perceived Quality, and Purchase Intention of Hydraulic Excavator for Limestone Quarry in East Java Indonesia

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ABSTRACT

Heavy equipment manufacturers in several countries use a technology to get optimum production. By doing so, they can make the operational cost more efficient. Indonesia, East Java province especially, has geologically abundant non-metallic mineral reserves, one of which is lime stone. Mostly of the consumers who use heavy equipment in the quarry mining industry are looking for the types and heavy equipment suitable for excavated material applications. It also includes perception of the overall quality of a product, to create an image with the value of a brand that can strengthen the effect on purchase intention. This study investigated the effect of the country of origin on brand image, perceived of quality for purchase intention of the hydraulic excavator consumers. This study used the responses of 59 respondents selected based on purposive sampling in a number of regions in East Java province that have non-metallic mineral distribution, namely limestone. The results show that the country of origin has a significant effect on brand image and perceived quality on the purchase intention. In addition to this, it was found that brand image positively and significantly affect the perceived quality and purchase intention. It also provides evidence that manufacture companies from the country of origin should be aware and to set up brand image and perceived quality product to make a brand image. By doing so, the consumers will increase their purchase intention to buy hydraulic excavators, operated at lime stone quarry in East Java province.

Keywords: Country of Origin, Brand Image, Perceived Quality, Purchase Intentions, Heavy Equipment and Limestone Quarry

INTRODUCTION

Currently, the product offering has been so diverse and there is no exception even for heavy equipment companies that have several distributors. For these companies, the consumers have many choices in making a decision to buy heavy equipment with various brands, models, types, machine configurations, and other specifications. These increasingly diverse choices encourage producers to produce a product that can attract consumers to buy it.

Before deciding to buy a product, generally the consumers should know which country the product is made from. In other words, they will consider the country of origin as a characteristic of a product they want to buy. Country of origin of a product will lead to quality perception about the pros and cons of a product. For that reason, the role of country of origin is beneficial for consumers for evaluating the products they want to purchase (Chu et al., 2008).

One aspect that is often used as a reference is to look at the brand equity of a product. Brand Equity is a set of beliefs, ideas, and impressions that a person has towards a brand (Simamora, 2014). However, perceived quality is also a factor that can affect the consumer decision to buy

a product. Perceived quality is the consumer's assessment of the overall quality of the product regarding the expected product characteristics (Ambrawati, 2006). The higher the value obtained by the consumer, the higher the consumer's buying interest towards a product.

Heavy equipment industry is one of the vital sectors in present development. It is a major requirement in sustainable infrastructure development. To be able to carry out efficient infrastructure development, each region needs quality construction equipment or heavy equipment. Besides having a significant role in the construction sector, the development of the heavy equipment industry is needed in various vital economic sectors such as the mining sector and the forestry and agro-industry sectors.

When observed, the business competition in the global heavy equipment industry involves more than 30 brands with several heavy equipment companies that dominate the market. As it was reported in the 2017 International Construction Report, there are three major players of heavy equipment namely Caterpillar (17%), Komatsu (11%), and Hitachi (5%). The rest are companies with a market share of less than 5% such as Liebherr, Volvo CE, Doosan Infracore, and various other brands. In such a condition, it can be concluded that, Caterpillar could penetrate the demand for heavy equipment globally.

Based on the data for Asia Pacific Construction Equipment Sales 2018, there are four brands that recorded the most sales, namely Caterpillar, Komatsu, Kobelco, and Hitachi. Construction Equipment Sales data in Asia Pacific during 2011-2017 shows that in Asia Pacific, heavy equipment sales development tends to decline. One of the causes of the decline in sales since 2012-2016 is due to the weak economy which has reduced interest or delayed the purchase of heavy equipment for construction. Nevertheless, the sale trend began to experience an increase in early 2017 and indicated an increasing market potential within the next three years.

In Indonesia, for example, there are three main producers of heavy equipment namely Komatsu, Caterpillar, and Hitachi. In addition to the three brands, the following main products are Kobelco, Sumitomo and Sakai. The six brands control more than 60% of the heavy equipment market in Indonesia (Heavy Equipment Industry Report, 2017). Based on the report, if classified based on units sold, United Tractors and Trakindo Utama recorded heavy equipment sales above 2,000 units per year while other players with the same business segment had an average sales range of 500-1,000 units per year, including Hitachi, Sumitomo, Sakai, Doosan (Kobexindo), Volvo (Intraco Penta), Kobelco, and several other brands.

Komatsu, Kobelco and Hitachi are heavy equipment industries originating from Japan, while Caterpillar is a heavy equipment industry based in America. As a PMA company, the three did not sell directly to users, but instead they handed over sales activities to the local distributors. For example, Komatsu appointed United Tractors, Caterpillar used the services of Trakindo Utama, and Hitachi distributed products through the Hexindo Adiperkasa Company.

In the period 2000 to 2012, the heavy equipment industry in Indonesia had grown rapidly. Even in the Southeast Asia region, Indonesia is a country that has the most complete and advanced heavy equipment industry. Heavy equipment companies in Indonesia are almost entirely part of several other companies, such as Hexindo Adi Perkasa with Hitachi, United Tractor with Komatsu, Trakindo Utama with Caterpillar, Intraco Penta with Volvo, Daya Kobelco with Kobelco, Tatindo Hexaprima with Sumitomo and Probesco with Case.

There have been more and more brand new heavy equipment units in the last 10 years. That is why, they made several dealers who had to create marketing strategies and technologies that were more innovative in order that they would not be abandoned by the customers. Therefore, heavy equipment industry players continue to expand in their business.

Companies need to increase brand equity because brand equity is very important to strengthen the company's reputation. Brand equity is the strength of a brand that provides value to companies and consumers. From a company perspective, brand equity provides higher profits, cash flow and market share. The consumer perspective of brand equity is related to positive and clear beliefs about brands in the minds of consumers. Brand equity can be divided into two, based on the consumer's perspective and the company's perspective. In this research, it tends to base on the consumer's perspective so that the variables used are more towards brand image and perceived quality.

There are three important reasons why companies must manage and develop brand equity. The three reasons are first, because the brand is more meaningful than just the product, the product is easily imitated and exchanged, while the brand can explain emotions and relationships specifically with customers and intangible nature so that it is not easily imitated by competitors (Rofiq et al., 2009). Second, the size of brand equity that is tracked over time reflects changes relative to competitors. Therefore, there are relevant and timely warnings. Third, brand measurement will help measure the impact of the marketing mix action itself on customers and provide feedback on whether the evolution of their equity is on track.

In the decision making process for purchases, consumers also pay attention to an important aspect, namely brand image. According to Kotler (2008), brand image is a number of beliefs about a brand, not contained in the features, technology or type of product itself, but it arises because of the advertisements, promotions, or images of its users.

In addition, perceived quality is also a very important factor because when a product or service cannot produce a value in every element, the competitors will be able to easily enter the market to substitute the existing products. According to Aaker (2014: 24), the definition of perceived quality is the customer's perception of the overall quality or excellence of a product or service related to the intended intentions. In this case, product quality has a close relationship with purchase intention, namely product quality provides an impetus for consumers to establish strong ties with the company.

In the last five years since 2014-2019 in East Java, the needs of heavy equipment both new and used by customers have experienced high demand, especially for heavy equipment used in mining areas of C-class excavated industrial materials such as sand, rock sand, andesite, land fill. The high demand for heavy equipment is due to the high demand from customers to fulfill the toll road construction work that connects several cities in the provinces of East and Central Java.

The results of previous studies regarding the factors that influence purchase intention such as by Melisa, Susanto, and Amelia (2014) and Aberdeen, Syamsun, and Najib (2016) show the influence of brand image on purchase intention. In contrast to the results of research by Li (2017) and Pramudya, Sudiro, and Sunaryo (2018), the results show that brand image has no effect on purchase intention. Furthermore, perceived quality is also significantly able to influence purchase intention (Wang and Tsai, 2014; Saleem et al., 2015; Li, 2017; Lomboan, 2017), but the results of Kanzu and Soesanto's (2016) Zahid and Dastane (2016) research, and Kurniawan and Indriani (2018) prove otherwise, that perceived quality is not able to

significantly influence purchase intention. Furthermore, research conducted by Amalia, Lestari, and Cardinal (2012) which states that brand image and perceived quality have a negative and not significant effect on purchase intention, also Ni'mah research (2012) says brand image has no effect on purchase intention, and Agusly and Kunto (2013) also said brand image had no effect on purchase intention.

LITERATURE REVIEW

Country of Origin

Consumer evaluation of a product is often not only based on intrinsic clues of the product (for example quality and composition of the content). However, they also base their extrinsic clues (eg COO, brand, and packaging). Among the extrinsic clues of the product, the perception of the country of origin of the product is often taken into consideration by consumers in their purchasing decisions (Agarwal and Kamakura, 1999).

Specific studies on country of origin are very interesting, especially in research on the effect of country of origin as extrinsic clues for products / services. Country of origin is also used as a sign of increased economic globalization resulting in lower barriers to trade between countries. Thus, the availability of foreign products in the local market is wider than before. In such circumstances, many products and services are evaluated by considering COO as a potential competitive differentiator in each country's local market. This is what makes COO considered one of the important areas of consumer behavior research and has attracted much attention from researchers in the field of marketing.

COO is a signal in the product attributes that affect consumer evaluation in identifying the origin of a product (Thakor and Pacheco, 1997). Ahmed, Johnson and Boon (2004) clearly define COO as the country of production or assembly identified as "made in" or "manufactured in". Czinkota and Ronkainen (2001). Even used to mention that COO is understood as an effect that appears in the perception of consumers that is influenced by the location where a product is produced.

According to Hsieh et al. (2004) in Demirbag et al. (2010) basically, a country image in a marketing perspective can be defined at three levels, namely: overall country image, aggregate product country image, and specific product country image.

- a. Overall country image
- b. Aggregate product country image
- c. Specific product country image

According to Kotler and Keller (2013: 338), a country of origin is an association and a person's mental belief in a product that is triggered by the country of origin of the product. Furthermore, according to Jaffe and Nebenzahl (2001: 13), country of origin is a mental image or image of a product and country. For that reason, it can be concluded that the country of origin is an imagination or image of a product that is triggered by the origin of the product.

Therefore, the country of Origin provides a variety of effects on the thinking of a prospective consumer and consumer. One of the effects of country of origin was stated by Hong and Wyer in Rosyidi (2009: 18), namely the effect of stimulus on potential consumers and consumers in evaluating a product and used to find other information about the product.

To measure the country of origin, the researchers in this study, used the concept of country of origin image proposed by Laroche et al. (2005) consisting of 3 main components, namely:

- a) Country Belief is the belief of prospective consumers about industrial development and technological progress in the country of origin of the product brand.
- b) People Affect is the affective response of prospective consumers to the country of origin of the product brand.
- c) Desired Interaction is the willingness or desire of potential consumers to build relations with the country of origin of the product brand.

According to Yasin, Nasser, and Osman (2007), country of origin is the association and mental belief of a consumer of a product that is triggered by the origin of the product, of which there are seven measurements, namely::

- a) the country innovation in production
- b) The level of technological progress of the country of origin of the brand
- c) Production design
- d) Creativity in productionKualitas produksi
- e) Achievements owned by the country of origin of the brand
- f) The image of the country of origin of the brand as a developed country

Brand Image

Brand Image is an image of a brand, which is considered a group of associations that connects consumer's thought towards a brand name. A positive brand image is created by a strong and unique as well as good brand association (Keller, 2013). This shows that brand image can be a company's strength to attract consumers. That is why, products with a positive brand image will have more value for consumers so that companies can attract them to try a product the company produces.

Rizan et al. (2012) states that brand image is an assumption about a brand that is reflected by consumers who hold on to their memories. Kotler (2008) said, that brand image is a vision and trust that is hidden in the consumers' mind, as a reflection of the association that is stuck in consumers' memories. Hogan (in Ratri, 2007) added, brand image is an association of all available information regarding products, services and companies of the intended brand. This information is obtained through two ways, namely the first is through a direct consumer experience, which consists of functional satisfaction and emotional satisfaction. The second is the perception shaped up by companies of the brand through various forms of communication such as advertising, promotion, public relations, logos, retail facilities, employee attitudes in serving sales and the performance of a service.

Brand image, is a very important aspect of the brand and can be based on reality or fiction depending on how consumers have perceptions. Brand Image has two components, namely brand association and personal brand, brand association, helping to understand the benefits of the brand received by consumers. Personal brand is a description of the brand in the context of human characteristics, this helps to understand the strengths and weaknesses of the brand (Sitinjak and Tumpal, 2005). Brand trust will shape the brand image, where the brand image for consumers will vary depending on their experience with the brand filtered by the effects of selective perception, selective distortion and selective retention (Sitinjak and Tumpal, 2005).

Brand Image tends to be a systematic memory of brands that contains the interpretation of the target market for product attributes, benefits, situations, uses, users and company characteristics. Furthermore, brand image consists of brand knowledge and consuming situations such as evaluation of feelings and emotions (selective responses) associated with brands (Sitinjak and Tumpal, 2005). In addition, brand image according to Tjiptono (2014) is a

description of associations and beliefs in certain brands, whereas according to Kotler (2008) effective brand image can reflect three things, namely:

1. Build product character and provide value proposition.
2. Convey the unique character of the product so that it is different from its competitors.
3. Give emotional strength from rational power

The indicator of brand image measurement according to Keller (2013) consists of 3 components, namely

1. Strength of Brand Association.
The strength of brand associations is determined by consumers' direct experience with brands, messages that are both non-commercial in nature and commercial in nature.
2. Favorability of Brand Association.
Creating a brand association by convincing consumers that the brand has the attributes and benefits that satisfy their needs and desires, so that positive thought is formed about the brand.
3. Uniqueness of Brand Association
Brand has a sustainable competitive advantage so that it gives consumers a compelling reason why they should buy it. Companies can make explicit a unique difference through direct comparisons with competitors.

Perceived Quality

Perception is an individual process for obtaining, organizing, processing, and interpreting information. The same information can be perceived differently by different individuals. Therefore, individual perception of information depends on the individual's knowledge of experience, education, interests, attention, and so on (Sangadji and Sopiiah, 2013: 42).

According to Grewal and Levy (2008: 279), the impression of quality is the relationship of the benefits of the product or service provided to consumers and its relation to price. In this context, quality impression can be defined as customer perception of the overall quality or excellence of a product or service with respect to the intended intention (Aaker, 2014: 83). It can be concluded, that perceived quality is consumers' impression of the benefits, quality, and price of a product or service provided to consumers.

Quality is basically the drive of the customer. This is caused by the customer who determines the final decision on the quality of the products on the market. The measurement of quality in terms of marketing must use the consumer's perspective of quality (Magdalena, 2004: 71). According to Keller (2013:31), quality perception can be defined as consumer perception of overall quality, or the relative superiority of a product or service to alternatives that are relevant in accordance with the objectives to be achieved. Therefore, perceived quality cannot be determined objectively because the perceived quality is these perceptions which also involve what is important to the customer. As such, quality perception is a global assessment based on consumers' perceptions of what they think can shape a product's quality and how good the brand is in that dimension (Aaker, 1996 in Magdalena, 2004 : 75).

Quality perception can be defined as a person's opinion regarding all product advantages. Quality perception is (1). different from the actual quality, (2). has a higher level of abstractness than the specific attributes of the product, (3). a global assessment which, in some cases resembles attitudes, and (4). consumers' judgment based on what is in their memories (Zeitham, 1988 in Magdalena, 2004: 77).

Consumers judge the quality of a product based on intrinsic and extrinsic values. Intrinsic value is related to the physical characteristics of the product, such as color, size, taste and aroma. They evaluate intrinsically the product quality because it can make them consider decision on their product choices both rationally and objectively. When consumers have no experience with the product, they evaluate the product based on extrinsic evaluation, which is related to price, brand image, manufacture's image, retail store's image that affects consumer perceptions of product quality.

It is common that perceived quality has its dimension that can be used for analyzing the product characteristics. According to David Garvin in Tjiptono (2016: 134), perceived quality of a product has some dimension as follows:

1. Performance that is the main operating characteristic of the core product purchased.
2. Serviceability (services), including speed, competence, comfort, ease of repair; and satisfactory handling of complaints.
3. Durability, which is related to how long the product can be used.
4. Reliability, which is less likely the product will suffer damage or fail to be used.
5. Features (product characteristics), namely secondary or complementary characteristics.
6. Specifications (i.e. conformity to specifications), i.e. the extent to which the design and operating characteristics meet predetermined standards.
7. Results, i.e. the results or output issued by the product that can be seen by the five senses.

Purchase Intention

Purchase intention is obtained from a learning process and the thought process that shape up the perception. This purchase intention can motivate the consumers to continue to record the image in their mind. This process makes them have a very strong desire to meet their needs and actualize what is in his mind (Pujadi, 2010). In addition, purchase intention can be used to predict future behavior. This means that, if the consumer shows a high purchase intention, he can be assumed that he will make an actual purchase. Therefore, marketers have an interest in identifying consumer purchase intention (Suprapti, 2010: 148). Moreover, Rahma (2007) also argue that the intention that arises to make purchase decision is a kind of the consumer's motivation that continues to be recorded in his mind. Finally, it becomes the consumer's strong activity when he feels that he must meet meet his needs to actualize what is in his mind.

According to Mowen in Oliver (2006), purchase intention is obtained from a learning process and thought process that forms a perception. This purchase intention creates a motivation that continues to be recorded in the consumers' minds and becomes their strong desire. Finally, this purchase intention will encourage consumers to actualize their desires. Therefore, purchase intention is also part of the behavioral component of a consuming behavior. According to Mowen in Oliver (2006) the hierarchy effect of purchase intention is used to describe the order in which the process of belief emerges. In this case, attitude and behavior of cognitive knowledge are being possessed by the consumers by linking it with attributes, benefits, and objects (by evaluating information). The consumers' attitude refers to their feeling or effective response. Even each of these elements can be partially shaped. However, in this study, the researchers only used three driving components in standard formation, namely cognition, attitude, and behavior. The emergence of these three components is due to the information received by consumers.

In relation to the concept above, Stigler in Cobb Walgren (1995) states that a brand that is known by the buyer will generate interest in making a purchase decision. The impact of a

product symbol gives meaning in consumer decision making because symbols and images are important in advertising and have an great effect on intention to purchase.

Based on the description above, it can be concluded that purchase intention is a process of individual full attention on a product accompanied by a feeling of pleasure towards the product. Therefore, the consumer's purchase intention can make the desire rise. The product image then arises a feeling that convinces the individual that the item has benefits. Finally, the consumer wants to own the product by buying it. It should be understood that, purchase intention itself also remains an attitude at a stage that consumers will not necessarily take an action in purchasing decisions.

According to Ferdinand (2002), purchase intention st can be identified through the following indicators:

1. Explorative interest, this interest describes the behavior of someone who is always looking for information about the product he is interested in and looking for information to support the positive qualities of the product.
2. Referential interest, namely a person's tendency to recommend a product to other people.
3. Transactional interest, namely a person's tendency to buy a product.
4. Preferential interest, namely interests that describe the behavior of someone who has a primary preference on a product. This preference can only be replaced if something happens with the product of his preference.

METODOLOGY

This study is an explanatory research. Sugiyono (2014: 10) states that explanatory research is research that explains the causal relationship between variables that have effects as based on the hypothesis. Causal research, is a study that seeks and describes the relationship (cause and effect) and the effects of research variables for getting a conclusion (Maholtra, 2005: 321). In this study, the researchers used data sourced from primary data and secondary data. Primary data were taken through a survey using a questionnaire while secondary data obtained from internal company data. Then, the researchers analyzed the data related to intervariable influences using SEM-Partial Least Square (SEM-PLS) analysis with the help of the SmartPLS v.2 program.

The population is limited to customers who had been using the product for more than 1 year, on the field that the customer has sufficient knowledge and experience in using the product. In the observation result by the researchers, there were 136 customers who had been using the product for more than 1 year. This study got the population of 136 customers, who are spread across several regions in East Java.

The sample in this study was part of the population element, namely heavy equipment excavators that use breakers, totaling 59 samples, with the distribution of sample as shown on Table 1.

Table 1. The Distribution of Research Sample

Hydraulic Excavator		Country Of Source Breaker				Total
No.	Regions	USA	China	Korea	Japan	
1	Pasuruan	1	2	6	2	11
2	Mojokerto		1	6		7
3	Kediri			1		1
4	Lumajang			1		1
5	Tuban	3	2	9	2	16
6	Gresik	1	3	7		11
7	Banyuwangi			2		2
8	Jember			1	2	3
9	Pacitan	1		6		7
10	Ponorogo					0
Total						59

The researchers used questionnaires as a research instrument for the data collection. This questionnaire as an instrument is a method of data collection. According to Sugiyono (2011: 136) Likert scale is used to measure the attitudes, opinions, and perceptions of a person or group of people about social phenomena. In this study, social phenomena have been specifically determined by researchers, hereinafter referred to as research variables.

In this study, for the purposes of analyzing and testing research hypotheses, the researchers also use inferential statistical approaches. The inferential statistical approach used to answer the hypothesis of this study is, using the Partial Least Square Equation Model (PLS) test tool, with the help of Smart PLS soft ware.

The researchers chose this PLS model because PLS is a more appropriate approach for predictive purposes, especially in conditions where the indicators of research variables can be formative (formative indicators), or in the form of reflective indicators termed reflective indicators (reflective indicators) Solimun (2006: 58).

RESULT AND DISCUSSION

Validity and Reliability Test

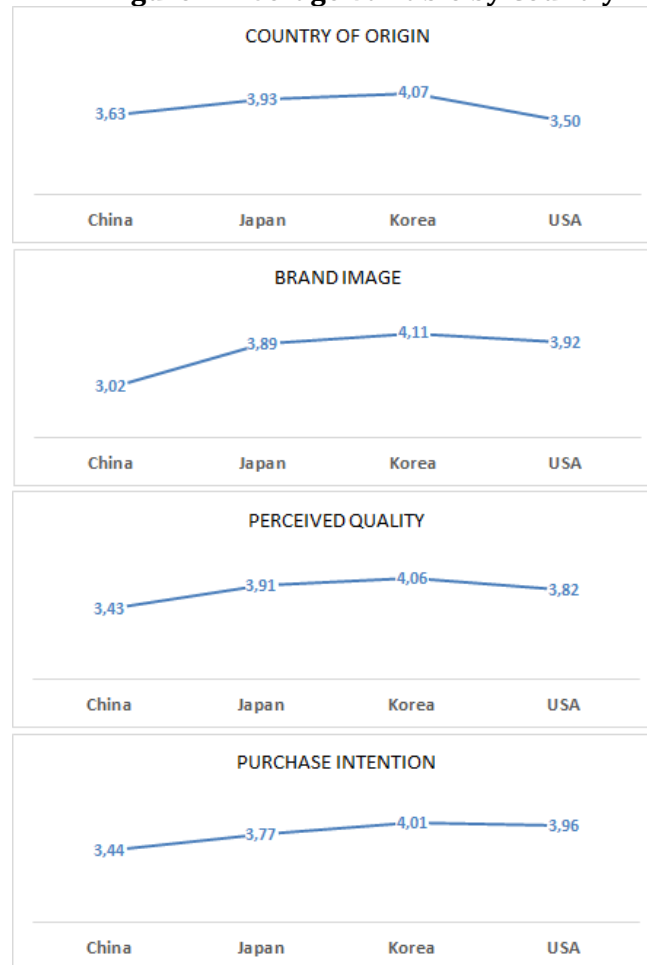
The validity test result shows the corrected Pearson correlation for each statement item on each indicator of country of origin, brand image, perceived quality, and purchase intention variables have a correlation value greater than r-table of 0.361 and a significance value of greater than 5%. Therefore, the researchers can conclude that all statement items used to measure each indicator on each variable prove to be valid. These variables include country of origin, brand image, perceived quality, and purchase intention are valid. For that reason, it can be used for further analysis.

The reliability test revealed that the Cronbach's alpha value for all research variables has a value greater than 0.60. Therefore, it can be concluded that the questionnaire statement items on the country of origin, brand image, perceived quality, and purchase intention variables can be declared reliable and can be trusted as an instrument that produces consistent answer.

Descriptive Statistics

Descriptive statistical result on country of origin, brand image, perceived quality, and purchase intention variables is presented on Figure 1:

Figure 1: Average Variable by Country



The descriptive statistics result on country of origin, brand image, perceived quality, and purchase intention variables, in general, show that products originating from Korea are considered better. Then, from the USA, and Japan which are relatively the same, and then the lowest are products from China.

PLS: Outer Model Evaluation

The researchers carried out an outer model evaluation to determine the validity and reliability of the indicators and constructs used. Validity is measured through convergent validity and discriminant validity, while reliability is measured through composite reliability.

Convergent Validity

Convergent validity, in PLS with reflective indicator, is valued based on outer loading. The rule of thumb used for convergent validity is $\text{outer loading} > 0.50$ and average variance extracted (AVE) > 0.50 (Chin, 1995 in Jogiyanto and Abdillah, 2014: 60). Indicators said to be valid can also be assessed from the value of T-statistics, with determination, for example, if the value of T-statistics is greater than 1.96, the indicator is said to be valid.

The result of convergent validity evaluation shows that there are all indicators of the country of origin, brand image, perceived quality, and purchase intention variables having an outer loading value greater than 0.50 and T-statistics value greater than 1.96. Therefore, all indicators are concluded to be valid for measuring the variables and meet convergent validity so that it can be used for further analysis.

In addition to using outer loading and T-statistics values, convergent validity testing can also be done by looking at the Average Variance Extracted (AVE) value. AVE values for each country of origin construct, brand image, perceived quality, and purchase intention are known to have AVE values above 0.50. Therefore, all indicators on these variables are concluded to be valid for measuring latent variables or meeting convergent validity.

Discriminant Validity

Discriminant validity is valued based on the cross loading value for each indicator in the construct formed. An indicator is said to meet discriminant validity if the indicator has a greater cross loading value on the construct that is formed, compared to other constructs.

The result of discriminant validity test was found that all indicators have generally greater cross loading values on the variables they form and are lower on other variables, so that all indicators are concluded to be valid in forming the construct of country of origin, brand image, perceived quality, and purchase intention.

Another method that can be used to determine discriminant validity is to compare the value of the average variance extracted root (AVE) on each variable with the correlation value that involves that variable with other variables in the model. If the value of the AVE roots is greater than the values of correlations that occur, then the variable can be said to meet the discriminant validity variable. The result of discriminant validity test using the comparison of AVE roots with correlation values between variables shows that all research variables have AVE roots greater than the value compared with the correlation values between these variables with other variables, so it can be concluded that the country of origin, brand image, perceived variables quality, and purchase intention, all of which have good discriminant validity.

Composite Reliability

In testing the reliability with PLS, the researchers used two methods, namely Cronbach's alpha and composite reliability. Cronbach's alpha measures the lower limit of reliability while composite reliability measures the true value of the reliability of a construct (Chin and Gopal, 1995 in Salisbury, et al., 2002). Composite reliability is considered better in estimating the internal consistency of a construct (Werts et al., 1974 in Salisbury et al., 2002). In addition, the rule of thumb of the Cronbach alpha value and composite reliability must be greater than 0.70, although the value of 0.60 is still acceptable (Hair et al., 2010 in Jogiyanto and Abdillah, 2014: 62). The test results show that all variables have a Cronbach alpha value and composite reliability greater than 0.70, so it can be concluded that the country of origin, brand ima

PLS: Inner Model Evaluation

The structural model (inner model) in PLS is evaluated by using R² for the dependent construct, and the path coefficient or *t*-value (*t*-statistics) for the significance test between constructs. The higher the value of R² means the better prediction of the proposed model. The path coefficient or inner model score indicated by the *t*-statistics value must be above 1.96 for testing hypotheses on alpha (research error rate) of 5% (Jogiyanto and Abdillah, 2014: 63).

R-square

Based on data process result by PLS, the coefficient of determination (R-square) was obtained as follows:

R-square (brand image) = 0.112

R-square (perceived quality) = 0.172

R-square (purchase intention) = 0.259

In the PLS model, the assessment of goodness of fit is known from the Q2 value. Q2 value has the same meaning as the coefficient of determination (R-Square) in the regression analysis, where the higher the R-Square, the model can be said to be more fit with the data. From the R-square value, the Q2 value can be calculated as follows:

$$\text{Value } Q^2 = 1 - (1-0,112) \times (1-0,172) \times (1-0,259) = 0,455$$

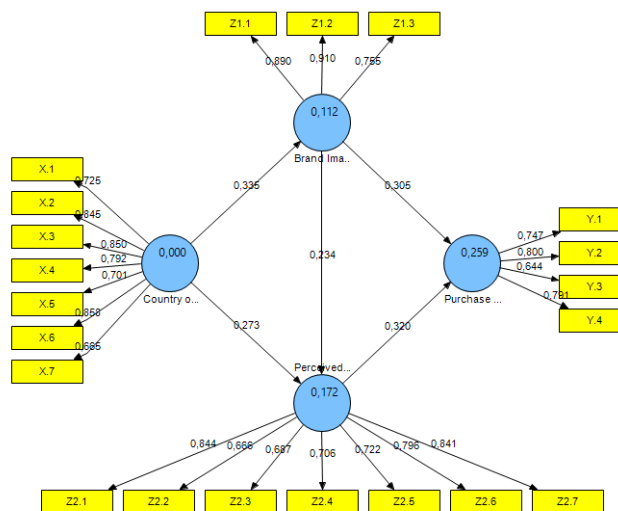
From the calculation, the results shows that the Q2 value is 0.455, meaning that the degree of the diversity of research data that can be explained by the structural model developed in this study is 45.5%. Based on this result, the structural model in the study already has a fairly good goodness of fit.

Results of the Hypothesis testing

After the analysis of the coefficient of the effect between variables, the next step is to test the hypothesis using the *t*-statistics. The researchers use a parameter *t*-statistics to determine whether there is a partial effect or not. For example, through the comparison of $t\text{-statistics} > 1.96$, there is an effect of exogenous variables on endogenous variables or endogenous variables on endogenous variables. Conversely, if $t\text{-statistics} < 1.96$, then there is no effect of exogenous variables on endogenous variables or endogenous variables on endogenous variables.

The coefficient of the effect (inner weight) on the PLS model is presented on Figure 2.

Figure 2: Result of PLS Process



Testing the significance of the effects between variables on PLS using bootstrapping, with the results as on Table 2.

Table 2. The Test of Hypothesis with Inner Weight

Hyp.	Effect Inter-variables	Coef.	<i>t</i> -Stat.
H ₁	<i>Country of Origin</i> → <i>Brand Image</i>	0,335	3,513
H ₂	<i>Country of Origin</i> → <i>Perceived Quality</i>	0,273	2,604
H ₃	<i>Brand Image</i> → <i>Perceived Quality</i>	0,234	2,029
H ₄	<i>Brand Image</i> → <i>Purchase Intention</i>	0,305	2,411
H ₅	<i>Perceived Quality</i> → <i>Purchase Intention</i>	0,320	3,809

As shown on Table 2, it describes the test of hypothesis with the results as follows:

1. The effect of country of origin on brand image is 0.335 with a *t*-statistics value greater than 1.96. Thus, it can be concluded that country of origin has a significant effect on brand image (H₁ is accepted).
2. The effect of country of origin on perceived quality is 0.273 with a *t*-statistics value greater than 1.96. Thus, it can be concluded that country of origin also has a significant effect on perceived quality (H₂ is accepted).
3. The degree of the effect of brand image on perceived quality is 0.234 with a *t*-statistics value greater than 1.96. Therefore, it can be concluded that brand image also has a significant effect on perceived quality (H₃ is accepted).
4. The degree of the effect of brand image on purchase intention is 0.305 with a *t*-statistics value greater than 1.96. Thus, it can be concluded that brand image also has a significant effect on purchase intention (H₄ is accepted).
5. The effect of perceived quality on purchase intention is 0.320 with a *t*-statistics value greater than 1.96. Thus, it can be also concluded that perceived quality also significantly affects purchase intention (H₅ is accepted).

The results of this study are consistent with those of Li (2017) and Pramudya, Sudiro, and Sunaryo (2018) that a product with a strong brand image tends to attract consumers to purchase. The results of this study are also consistent with those of the research by Wang and Tsai (2014), Saleem et al. (2015), Saputri and Kurniawati (2015), Aberdeen, Syamsun, and Najib (2016), Yulian and Andjarwati (2016), Eliasari and Sukaatmadja (2017), Li (2017) Lomboan (2017) that a product with good perceived quality can attract consumers to purchase. Furthermore, the results of this study are also consistent with those of Kim et al. (2015) that a product originating from countries that are known for their quality products, tends to be in demand by customers, compared to a product originating from lesser-known countries. Matoati and Syahlani (2017) also stated, to strengthen the role of country of origin, it requires a role of involvement or the role of high involvement of companies to introduce their product excellence. For that reason, country of origin will increase perceived quality. In the end, this condition can also increase customer purchase intention.

CONCLUSION

The research variables consisted of country of origin, brand image, perceived quality, and purchase intention. Based on the formulation of the problem, literature review, research results, and discussion, can be concluded as follows:

1. Country of origin has a significant effect on brand image. Therefore, the higher the country of origin, the stronger the brand image of heavy equipment in the mining industry in East Java Province.

2. Country of origin also has a significant effect on perceived quality. Therefore, the higher the country of origin, the higher the perceived quality of heavy equipment in the mining industry in East Java Province.
3. Brand image also has a significant effect on perceived quality. Therefore, the stronger the brand image, the higher the perceived quality of heavy equipment in the mining industry in East Java Province.
4. Brand image also has a significant effect on purchase intention. Thus, the stronger the brand image, the higher the purchase intention for heavy equipment in the mining industry in East Java Province.
5. Perceived quality also has a significant effect on purchase intention. Therefore, the higher the perceived quality, the higher the purchase intention in the heavy equipment in the mining industry in East Java Province.

References

- S. Chen, B. Mulgrew, and P. M. Grant, "A clustering technique for digital communications channel equalization using radial basis function networks," *IEEE Trans. on Neural Networks*, vol. 4, pp. 570-578, July 1993.
- Aaker, D. 1997. *Manajemen Ekuitas Merek*. Alih bahasa: Aris Ananda. Cetakan Pertama. Jakarta: Mitra Utama.
- Aaker, D. 2014. *Building Strong Brands*. Alih bahasa Baderi. Jakarta: Bumi. Aksara.
- Agrawal, J., and Kamakura, W.A. (1999), Country of Origin: A Competitive Advantage?. *International Journal of Research in Marketing*, 16(4): 255-267.
- Ahmed, Z. U, J. P. Johnson, C. P. Ling, and T. W. Fang, A. K. Hui. 2002. Country-of-Origin and Brand Effects on Consumers' Evaluations of Cruise Lines. *International Marketing Review*, 19 (2/3): 279-323.
- Badri, M.A., Davis, D. & Davis, D. 2000. Operation strategy, environment uncertainty, and performance: a path analytic model of industries in developing country. *International Journal of Management Science*, 28, 155-173.
- Ball, Donald A. , Wendell H. McCulloch Jr, Paul L. Frantz, J. Michael Geringer, Michael S. Minor. 2005. *International Business: Bisnis Internasional, Tantangan Persaingan Global*. Alih Bahasa: Syahrizal Noor. Jakarta: Salemba Empat.
- Bhakar, Dr. S. S, Shailja Bhakar, dan Shilpa Bhakar. 2013. Relationship Between Country of Origin, Brand Image and Customer Purchase Intention. *Far East Journal of Psychology and Business*. Vol. 10 No. 2: 25-47.
- Demirbag, M., Tatoglu, E., Tekinkus, M. and Zaim, S. 2006. An Analysis of The Relationship Between TQM Implementation and Organizational Performance: Evidence from Turkish SMEs. *Journal of Manufacturing Technology Management*, Vol. 17, No. 6: 829-47.
- Fischer, N.K., A. Diamantopoulos, dan K. Oldenkotte. 2012. Are Consumers Really Willing to Pay More for a Favorable Country Image? A Study of Country-of-Origin Effects on Willingness to Pay. *American Marketing Association*, Vol. 20, No. 1, pp. 19-41.
- Garvin, A. David. 1984. Competing on Eight Dimensions of Quality. *Havard Business Review: November Issue*.
- Grewal, Dhruv and Levy, Michael. 2008. *Marketing*. New York: The McGraw-Hill Companies.
- Humdiana. 2005. Analisis Elemen-elemen Brand Equity Produk Rokok Merek Djarum Black. *Journal of Marketing Management*, Vol.12, No.1
- Jaffe, Eugene D. and Israel D. Nebenzahl. 2001. *National Image & Competitive Advantage: The Theory and Practice of Country of Origin Effect*. Denmark: Copenhagen Business School Press.
- Keller, Kevin L. 2013. *Strategic Brand Management: Building, Measuring, and Managing Brand Equity*. Fourth Edition Harlow, English: Pearson Education Inc.
- Kim, S.J., Y.K. Choi, K.H. Kim, dan H. Liu. 2015. Country of origin and brand image influences on perceptions of online game quality. *Journal of Consumer Behaviour*, 14: 389-398.
- Kim, N., E. Chun, dan E. Ko. 2017. Country of origin effects on brand image, brand evaluation, and purchase intention: a closer look at Seoul, New York, and Paris fashion collection. *International Marketing Review*, Vol. 34 Iss 2, Permanent link to this document: <http://dx.doi.org/10.1108/IMR-03-2015-0071>
- Kotler, Phillip. 2000. *Manajemen Pemasaran di Indonesia: Analisis Perencanaan, Implementasi, dan Pengendalian*. Alih Bahasa: A.B. Susanto. Jakarta: Salemba Empat.

- Kotler, Phillip dan Kevin Lane Keller. 2012. *Manajemen Pemasaran*. Edisi 13. Jilid 2. Alih Bahasa: Bob Sabran. Jakarta: Penerbit Erlangga.
- Kurniawan, H.A., F. Indriani. 2018. Pengaruh product knowledge, perceived quality, perceived risk, dan perceived value terhadap purchase intention. *Diponegoro Journal of Management*, Volume 7, Nomor 4, Halaman 1-13.
- Lai, Huiwen, Susan, Chun 2004. The determinants of bilateral trade. *Canadian Journal of Economics/ Revue canadienne d'économie* Volume 37, Issue2 Pages 459-483
- Laroche, Michel, Nicolas Papadopoulos, Louise A. Heslop, dan Mehdi Mourali. 2005. The influence of country image structure on consumer of foreign products. *International Marketing Review*. Vol. 22 No. 1: 96-115.
- Li, C.P. 2017. Effects of Brand Image, Perceived Price, Perceived Quality, and Perceived Value on the Purchase Intention towards Sports and Tourism Products of the 2016 Taichung International Travel Fair. *The Journal of International Management Studies*, Volume 12 Number 2, hal. 97-107.
- Listiana, Erna. 2012. Pengaruh Country of Origin terhadap Perceived Quality dengan Moderasi Etnosentris Konsumen. *Jurnal Administrasi Bisnis*. Vol.8, No.1: 21-47.
- Lomboan, L.K. 2017. Aanalysis the influence of perceived quality, perceived price and perceived value on consumer purchase intention. *Jurnal Berkala Ilmiah Efisiensi*, Volume 17 No. 01, hal. 100-112.
- Magdalena, S. 2004, Studi Mengenai Pengembangan Minat Beli Merek Eekstensi: Studi Kasus Produk Merek Sharp di Surabaya: *Jurnal Sains Pemasaran Indonesia* Vol 4 no 4 desember 2004 hal 243 266
- Matoati, R., dan S.P. Syahlani. 2017. The Role of Involvement as a Moderating Variable in a Country of Origin Study. *Gajah Mada International Journal of Business*. Vol. 19, No. 1: 19-34.
- McBride J. Brad Inscha Gary S., 2004. The impact of country-of-origin cues on consumer perceptions of product quality: A binational test of the decomposed country-of-origin construct: *Journal of Business Research* 57 (2004) 256 - 265
- Melisa, H. Susanto, dan Amelia. 2018. Analisis Faktor-Faktor yang Mempengaruhi Purchase Intention. *Jurnal GEMA AKTUALITA*, Vol. 3 No. 2,
- Permana, Magyar Slamet. 2013. Pengaruh Countryof Origin, Brand Image dan Persepsi Kualitas terhadap Intensi Pembelian pada Merek. *Skripsi*, Universitas Kristen Satya Wacana Salatiga.
- Payne , Adrian and Holt, Sue . 2001. Diagnosing Customer Value: Integrating the Value Process and Relationship Marketing. *British Journal of Management*, Vol.12, 159-182
- Pradipta, D. (2012). Pengaruh Citra Merek (Brand Image) Terhadap Loyalitas Konsumen Produk Oli Pelumas PT Pertamina (PERSERO) Enduro 4T di Makasar. Universitas Hasanudin, Makasar (publish).
- Ratri, Lutiary Eka. 2007. Hubungan Antara Citra Merek (Brand Image) Operator Seluler dengan Loyalitas Merek (Brand Loyalty) Pada Mahasiswa Pengguna Telepon Seluler di Fakultas Ekonomi Reguler Universitas Diponegoro Semarang. Semarang: Fakultas Psikologi Universitas Diponegoro.
- Rizan, M., B. Saidani, dan Y. Sari. 2012. Pengaruh Brand Image dan Brand Trust Terhadap Brand Loyalty Teh Botol Sosro. *Jurnal Riset Manajemen Sains Indoneisa*, Vol. 3, No. 1, pp. 1-17.
- Rosyidi, Syaiko. 2009. Analisis Pengaruh *Brand, Country of Design* dan *Country of Assembly* Pada Persepsi Kualitas dan Niat Beli. *Jurnal Potensio*. Volume 11, No 1: 10-33.
- Saleem, A., A. Ghafar, M. Ibrahim, M. Yousuf, dan N. Ahmed. Product Perceived Quality and Purchase Intention with Consumer Satisfaction. *Global Journal of Management and Business Research: E Marketing*, Volume 15 Issue 1.
- Sangadji, Etta M. dan Sopiah. 2013. *Perilaku Konsumen: Pendekatan Praktis*. Yogyakarta: CV Andi Offset
- Saputri, S.M., dan Kurniawati. 2015. Pengaruh perceived quality dan perceived value terhadap purchase intention. *Seminar Nasional Cendekiawan* 2015.
- Schiffman, Leon G, dan Leslie Lazar Kanuk. 2007. *Consumer Behavior*. New Jersey: PrenticeHall.
- Simamora, Bilson. 2003. *Aura Merek*. Jakarta: PT Gramedia Pustaka Utama.
- Simamora, Henry. 2014. *Manajemen Sumber Daya Manusia*. Yogyakarta: Bagian Penerbitan Sekolah Tinggi Ilmu Ekonomi YKPN
- Sinrungtam, Wasana. 2013. Impact of Country of Origin Dimensions on Purchase Intention of Eco Car. *International Journal of Businessand Management*. Vol. 8, No. 11: 51-62.

Sitinjak, Tony, Tumpal. J.R.S. (2005). Pengaruh Citra Merek Dan Sikap Merek Terhadap Ekuitas Merek. *Jurnal Ekonomi Perusahaan*. Volume 12 No 2. Halaman 166-180.

Thakor, M. V and C. S. Kohli. 1996. "Brand Origin: Conceptualization and Review," *Journal of Consumer Marketing* 13 (3).

___ and B. G. Pacheco. 1997. "Foreign Branding and Its Effects on Product Perceptions and Attitudes: A Replication and Extension in a Multicultural Setting," *Journal of Marketing*. Canada Winter (2007): 15-29.

Tjiptono, F. 2005. *Pemasaran Jasa*. Malang: Bayumedia Publising.

Wang, Ya-Hui dan Tsai, Cing-Fen Tsai. 2014. The relationship between brand image and purchase intention: evidence from award winning mutual funds. *The International Journal of Business and Finance Research*, Vol. 8, No. 2, page. 27-40.

Yasin, N.M, Noor, M.n and Mohamad, O. 2007. Does Image Of Country of Origin Matter To Brand Equity?. *Journal of Product & Brand Management*,16/1 (2007) 38-48.

Zahid, W., dan O. Dastane. 2016. Factors Affecting Purchase Intention of South East Asian (SEA) Young Adults towards Global Smartphone Brands. *Asean Marketing Journal*. Vol.VIII - No. 1, hal. 66-84