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How product quality, brand image, and customer satisfaction affect the purchase decisions of Indonesian automotive customers

Aris Insan Waluya and M. Ali Iqbal

Mercu Buana University,

Jl. Maruya Selatan No. 1, Kembangan Jakarta Barat 11650, Indonesia

Email: aris_insan_waluya@hpm.co.id Email: ali.iqbal@mercubuana.ac.id

Rhian Indradewa*

Esa Unggul University, Jl. Arjuna Utara 9, Kebon Jeruk, Jakarta, Indonesia Email: rhian.indradewa@sbm-itb.ac.id *Corresponding author

Abstract: This research aims to examine product quality and brand image mediated by customer satisfaction that affect the purchase decisions of Indonesian automotive customers. The method of data collection is using primary data from 200 respondents, who are automotive customers, through questionnaires, direct observation of the object under study and literature review. The method of analysis is using quantitative data with the path analysis method using SPSS 23 to test the level of significance of product quality and brand image to the purchase decisions, mediated by customer satisfaction, of Indonesian automotive customers, Overall, the results showed that product quality and brand image have an effect on customer satisfaction. Product quality and brand image have a direct influence on the purchase decision process. Additionally, product quality and brand image have an effect on the purchase decisions, mediated by customer satisfaction, of Indonesian automotive customers. The practical implications are that the automotive industry should manage its brand image as the most important factor influencing purchasing decisions. Mediated by customer satisfaction, brand image also is the greatest factor influencing the purchase decision. The other managerial implication is that the automotive industry should manage product quality and communicate that aspect to customers.

Keywords: product quality; brand image; customer satisfaction; purchase decision.

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Biographical notes: Aris Insan Waluya graduated from the Department of Industrial Engineering, Pasundan University in 2007. During his study at the Pasundan University, he was actively participating in lab works as a Lab Assistant, both at the Production Process Laboratory and Engineering Design

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Laboratory from 2004 to 2006. In 2017, he earned his Master's in Management from the Department of Marketing Management, Mercu Buana University. He works at one of automotive manufacturing since 2007 until present. He was involved in Assembling Engine Department as quality staff since 2007 until 2011, in 2012 until 2017 involved in Engine Casting Department as the Quality Section Head. In 2017, he was involved in the Engine Quality Department as the Ouality Inspection Engineer Section Head.

M. Ali Iqbal received his Bachelor from the Academy of Fisheries, Indonesia, he also received a scholarship for his Master in Agricultural Economics from the Kasetsart University, Thailand where he was also awarded for the best thesis of the year. Then he received his PhD in Human Resource Management from the Universitas Negeri Jakarta, Indonesia. He also participated in workshops of Macroeconomic Adjustment and Food/Agriculture Policy and in Budgeting of the Public Sector, both at the Harvard University, USA. He previously served as researcher at the Centre of Social Economy, Ministry of Marine and Fisheries. He is also the Head of Sub Division Public Information Centre, Ministry of Marine and Fisheries and the Head of Sub Division of Policy Development at the Ministry of Agriculture. He actively serves as Lecturer at the Universitas Mercu Buana, Jakarta, Indonesia.

Rhian Indradewa completed his Bachelor of Engineering Faculty at the University of Indonesia in 2001, Master in Marketing Management Science in Economic Faculty University of Indonesia in 2005 and Doctoral in School of Business and Management Institut Teknologi Bandung, Indonesia in 2016. His specialisation is in strategic and technology management. He is a practitioner and has many experiences in oil and gas, and energy sector industry such as Petronas (a Malaysian oil and gas company) and since 2010 joined Pertamina (an Indonesian oil and gas company). He is also a Lecturer in the Esa Unggul University, SBM ITB and some private universities.

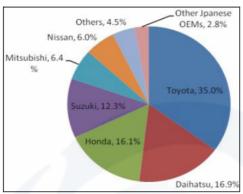
1 Introduction

1.1 Research background

The Indonesian automotive industry has become an important pillar in the manufacturing sector of the country, as many world-renowned automobile companies are opening manufacturing plants or increasing their production capacity in this country, which has the largest economy in Southeast Asia. Now, Indonesia is undergoing a tremendous transition as it transforms from just being a car production location for exports (especially to Southeast Asia) to being a large car sales market due to increased per capita gross domestic product (GDP).

Today, Thailand controls approximately 43.5% of automotive sales in Southeast Asia, while Indonesia ranks second, with 34% of the market share. Frost and Sullivan predict that Indonesia will become the largest automotive market in Southeast Asia in 2019. To expand the automotive industry, system quality and brand name are all positively associated with success in domestic and international business expansion (Lertkornkitja, 2017). From the data below, it can be seen that the car market share in Indonesia is still dominated by Japanese automotive companies. This study aims to examine what factors are the basis of car purchase decisions in Indonesia.

Figure 1 Indonesian automotive market share in 2017 (see online version for colours)



Source: http://www.marklines.com

According to Oledepo and Odunlami (2015), brands play a number of important roles that improve the lives of customers and increase a company's financial value. Customers learn about brands through their past experiences with their products and marketing programs. The brand will affect customer satisfaction that will ultimately determine the purchase decision. Corporate image has been assessed as an important antecedent of customer satisfaction, and corporate brand is vital because positive corporate brands help companies achieve higher performance, such as increased sales (Te-Tu et al., 2012).

In addition to the brand, the product quality will increase the purchase decision mediated by the perceived value (Levyda, 2017). Quality affects customers' perceived playfulness and perceived flow and, in turn, influences their satisfaction and purchase intention (Hsu et al., 2011). According to Nataraj (2012), part of this satisfaction depends on two variables that are psychologically and physically correlated with the customer satisfaction, such as re-buying and recommending to others. According to Kotler and Armstrong (2010), customer satisfaction is the extent to which a product's perceived performance matches a buyer's expectation, and it is a measurement of satisfaction level, closely related to product quality. According to Jahanshasi and Gashti (2011), quality has become an elusive concept in the automotive industry. Quality is the totality of features and characteristics of a product or service that relies on its ability to satisfy consumer need (Kotler and Keller, 2009). Some of the product quality criteria in the automotive industry include safety, comfort and air pollution; ergonomic requirements; product design; and functional quality such as output or kilometres per litre. In addition to some of the above quality criteria, based on the customer voice survey, other criteria that are also related to quality factors are shown in Table 1.

Related to the relationship between customer satisfaction and purchase decisions, satisfaction is a significant positive predictor of customers' repurchase intentions toward online shopping (Yu-Hui, 2011). How to improve a company's environmental performance effectively is the major challenge facing many managers. Based on the description above, brand, quality and customer satisfaction will influence the purchase decision. According to Kotler (2009), purchasing decisions are actions of customers to want to buy a product or not. Of the various factors that affect customers in buying a

product or service, customers usually consider the quality and products that are already known by the community.

Table 1 Quality criteria in automotive products

No.	Criteria	Percentage
1	Driving experience	8.54%
2	Breaks are noisy	7.28%
3	Breaks vibrate/shudder	6.65%
4	Abnormal engine noises	6.01%
5	Manual transmission - clutch chatter	5.70%
6	Seat squeaks/rattles	4.75%
7	Abnormal noises under vehicle	4.75%
8	Seatbelt latches/releases	4.11%
9	Breaks do not have enough stopping power	4.11%
10	Front doors - squeak/abnormal noises	4.11%
11	Vehicle pulls noticeably	3.16%
12	Emergency/parking brake - too loose	3.16%
13	Steering wheel vibrates excessively while driving	3.16%
14	Emergency/parking brake - too much effort	2.85%
15	Vehicle vibrates excessively – while driving	2.85%
16	Horn – broken/not working	2.53%
17	Seat belt locks up inappropriately	2.22%
18	Door locks – broken/not working	1.90%
19	Other seats	1.90%
20	Rear side doors – squeak/abnormal noises	1.90%
21	Other HVAC	1.90%
22	Recliner adjustment	1.58%
23	Air from vents smells mouldy/stale	1.58%
24	Auto transmission - shifts at wrong times	1.58%
25	Windshield wipers/washer - broken	1.58%
26	Rear side doors – difficult to open/close	1.58%
27	Ext light prob fog/condensation in lenses	1.58%
28	Other exterior	1.58%
29	Instrument panel/dashboard - squeak/rattle	1.58%
30	Exhaust system problem	1.27%
31	Manual transmission - gearshift difficult to operate	1.27%
32	Emergency/parking brake - will not hold vehicle	1.27%

Source: IQS Verbatim J.D. Power

1.2 Research objective and questions

The objective of this research is to develop a model to measure the purchase decisions of Indonesian automotive customers related to product quality, brand image, and customer satisfaction. This study includes the following theoretical objectives:

- To introduce a model for the purchase decisions of Indonesian automotive customers.
- To find the relationships between product quality, brand image, and customer satisfaction related to the purchase decisions of Indonesian automotive customers.
- 3 To find and measure some indicators related to product quality, brand image, customer satisfaction and purchase decisions.

Based on the explanation set forth above, the research questions can be defined and formulated as follows:

- 1 How is the relationship between product quality and purchase decisions of Indonesian automotive customers mediated by customer satisfaction?
- 2 How is the relationship between brand image and purchase decisions of Indonesian automotive customers mediated by customer satisfaction?
- 3 What is the relationship between product quality and customer satisfaction?
- 4 What is the relationship between brand image and customer satisfaction?
- 5 What is the direct relationship between product quality and purchase decisions?
- 6 What is the direct relationship between brand image and purchase decisions?

2 Literature review

2.1 Product quality

According to Kotler (2009), quality is defined as the overall characteristics and nature of goods and services that affect the ability to meet the stated or implied needs of consumers. To identify the price effects of product quality, product cost, and product safety on customer satisfaction in the USA, the automobile industry is one of the most important factors involved in hypotheses in management theory and professional practice (Bresnahan, 2010; Harper and Porter, 2011). Therefore, difficulties in managing high-quality customer products, quality control, and mitigating product costs to enhance product safety to meet or exceed customer satisfactions and/or customer loyalty and company revenue objectives continue to emerge (Eckert and Hughes, 2010; Hill et al., 2011)

According to Jahanshasi and Gashti (2011), product quality at Tata Motors improves customer satisfaction, and there is also a positive relationship between customer satisfaction and customer loyalty in the context of the Indian automotive industry. Quality impact on customer satisfaction affects the higher lifetime value for customers and businesses (Fetscherin and Toncar, 2009; Verhoef and Lemon, 2013). Xu et al. (2013) believe that customers have the final say on quality, which means that quality

efforts not only focus on simply meeting the specifications and reducing defects and variations but also focus on ensuring the reliability of products when they reach customers. Increasing service and product quality will improve operational efficiency (Firli et al., 2017). According to Doležalová et al. (2016), customers make purchases based on significantly better quality as the main criterion, before price. Customers also consider freshness to be an important attribute of quality and pay less attention to the appearance of the organic food purchased. Guatam (2014) states that safety, appearance, shape, interior features, and presale and post-sale features affect customers' choice to buy a car. Hyundai and Volkswagen emerge as very strong brands in this area compared to other brands. Perception will affect the quality of the product (Shukla and Garg, 2017).

2.2 Brand image

A brand is a term, design, name, symbol or any other feature that distinguishes one company's product from those of other companies. According to Neupane (2015), brand image and customer satisfaction have a strong positive relationship; brand image and customer loyalty also have a strong positive relationship. Moreover, customer satisfaction and customer loyalty have a strong positive relationship. Kambiz and Naimi (2014) found that the effect of customer satisfaction on brand image has been significant and that the effect of customer loyalty intention on customer satisfaction is significant; for the customers to have a positive brand image, specific attention should be paid to customer satisfaction and all factors that will lead to customer satisfaction.

According to Oledepo and Odunlami (2015), brand image and promotional mix have an influence on customer purchase decisions. An empirical study proves that brand image is able to influence customer purchase decisions. Gurleen and Pooja (2014) state that brand image significantly affects buying behaviour. According to Wang et al. (2016), the role of pricing and branding in an incumbent firm's decision when facing competition from an entrant firm with limited capacity is becoming increasingly important.

2.3 Customer satisfaction

According to Oliver (1997), satisfaction is the customers' fulfilment response. It is a judgement that product or service features or the product or service itself provide (or is providing) a pleasurable level of consumption-related satisfaction, including levels of under- or over fulfilment. According to Vavra (2002), customers can obtain satisfaction from the overall service or product; the particular performance of the product; the representatives of the company or department; the various transactions such as presentation of sales, delivery of products, repair service, post-sale service, and complaint handling; and the post-purchase and pre-purchase relationships generated by a company with their customers.

According to Cochran (2003), customer satisfaction is the fundamental goal for organisations. Jiradilok et al. (2014) found that satisfaction in appropriate pricing and website information has a positive relationship with purchase intention. According to Sukwadi (2017), there is a relationship between customer value and customer satisfaction that moderates service innovation.

2.4 Buying decision

According to Peter and Olson (2006), the purchase decision is an integration process that combines knowledge to evaluate two or more alternative behaviours and choose one of them. Kotler and Keller (2006) found that purchase decisions have several stages that are performed by the customer before making a purchase decision about a product. Chapman and Wahlers (2009) found that purchase decisions are customers' desire to buy a product. Customers will decide which products to buy based on their perceptions of the product related to the ability of the product to meet their needs. According to Buchari (2008), buyers have purchasing motives that encourage them to make purchases. Regarding purchase motives, there are three types: primary buying motive, which is the true motive to buy; selective buying motive, in which the selection of goods can be based on the ratio; and patronage buying motive, which is a selective buying motive directed at a particular place or store. This motive can arise because of satisfactory service, a close place, adequate inventory, etc. Buying decisions will increase company performance. The role of green information systems in improving a company's environmental performance becomes important. Companies should have to determine the antecedents in helping to create an effective green information system (Liu et al., 2018).

3 Research model and hypotheses

3.1 Research model

From the above explanation, this paper developed the research framework as shown below in Figure 2. Product quality and brand image as independent variables will affect customer satisfaction as a mediating variable. In addition, product quality and brand image will have effects on the purchase decisions, as a dependent variable, of Indonesian automotive customers. Figure 2 provides an overview of the research model.

Figure 2 Research model



Figure 2 shows that to obtain positive purchase decisions, product quality and brand image, as independent variables, will affect customer satisfaction, as a mediating variable, and should be managed in Indonesian automotive customers.

3.2 Hypotheses

Based on the literature review and interviews, the results of previous research and the above framework, the hypotheses are as follows:

- H1 Product quality positively and directly influences customer satisfaction.
- H2 Brand image positively and directly influences customer satisfaction.
- H3 Product quality positively and directly influences purchase decisions.
- H4 Brand image positively and directly influences purchase decisions.
- H5 Customer satisfaction positively and directly influences purchase decisions.
- H6 Product quality positively and indirectly influences purchase decisions with customer satisfaction as a mediating variable.
- H7 Brand image positively and indirectly influences purchase decisions with customer satisfaction as a mediating variable.

4 Methodology

This study was conducted in the Indonesian automotive market. To answer the research questions, quantitative approaches are adopted. Quantitative research aims to test the research model, the significance of the relationships among the variables and factors, and the hypotheses (Saunders and Lewis, 2012). A quantitative method was used, which involved administering a questionnaire to selected respondents among Indonesian automotive customers. This stage consisted of four activities: a pre-test survey, the establishment of the research model, a confirmatory study, and data analysis (Neuman, 2006). A pre-test survey was conducted by distributing questionnaires containing preliminary closed-ended questions on a 5-point Likert scale to 40 Indonesian automotive customers. This questionnaire-deployment technique used proportional random sampling. Once the process was complete, SPSS version 23 was used to determine the factors that were relevant to measuring these variables to create a good questionnaire and measure its reliability and validity.

After the pre-test, a test survey is distributed to 160 Indonesian automotive customers. The data will be analysed using path analysis methods. Path analysis is a technique for the development of multiple linear regressions. This technique is used to examine the contribution indicated by the path coefficients in each diagram, showing a causal relationship between variables X1, X2 and Y, Z. Channel analysis is a technique for analysing the causal relationships that occur in regression if multiple independent variables affect the dependent variable not only directly but also indirectly (Retherford, 1993). Path analysis is a direct development of the multiple regression form with the aim of providing an estimate of the level of interest (magnitude) and significance of the hypothetical causal relationship in a set of variables. Garson (2003) defines path analysis as expansion of the regression models that were used by the researcher to test the

correlation matrix alignment with two or more models of causality. The model is depicted in picture form, showing a circle and an arrow, where the single arrow indicates the regression of the variables in a model as a dependent variable (donor response), while the others indicate the cause. The weighting regression was predicted in a model that compared the observed correlation matrixes for all variables and performed a statistical calculation alignment test (Garson, 2003).

5 Result

In this study, questionnaires were distributed to 200 Indonesian automotive customers. The results are shown in Tables 2 to 5.

5.1 Validity and reliability test

The significance of a variable factor is considered high when its value is greater than 0.5 (≥0.5) (Igbaria et al., 1997). Testing the reliability of the measurement model is measured by looking at the value of Cronbach's alpha. Cronbach's alpha measures the lower limit value of the reliability of a construct. Constructs are said to be reliable if the Cronbach's alpha values and composite reliability are greater than 0.70. A Cronbach's alpha value higher than 0.7 is considered satisfactory (Hair et al., 2011).

Table 2 Validity and reliability test results

Variables	Dimensions	Validity	Reliability	
Product quality (X1)	Performance	0.553	0.879	
	Conformance to specifications	0.607		
	Features	0.573		
	Serviceability	0.511		
Brand image (X2)	Producer brand image	0.536	0.864	
	User brand image	0.639		
	Product brand image	0.682		
Customer satisfaction (Y)	Relationship marketing	0.553	0.894	
	Complaint handling	0.537		
	Unconditional guarantees	0.616		
Purchase decision (Z)	Social factors	0.642	0.859	
	Personal factors	0.566		
	Psychological factors	0.566		

Source: SPSS Version 23

Based on the results of data processing in the table above, all items are valid for factor loading values above 0.5. For the reliability test, four variables are reliable because the Cronbach's alpha value is above 0.7, namely, product quality (0.879), brand image (0.864), customer satisfaction (0.894) and purchase decision (0.859).

5.2 Test of assumption

The test of assumption is absolutely necessary before test path analysis is performed. There are three test assumptions in this study that must be met before the test path analysis is carried out, namely, a normality test, heteroscedasticity test, and linearity test.

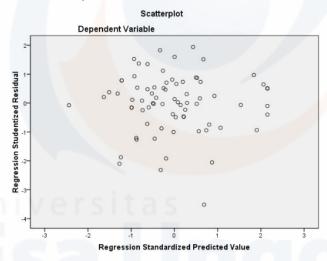
5.2.1 Normality test

From the normality test, it can be seen that the data are normally distributed, which is due to the significance of the results (asymp. sig) of each variable, and the result is greater than 0.05. The output of the normality test results, according to the method of Kolmogorov-Smirnov (Z and z grades) for the four variables is as follows: product quality (1.874), brand image (2.138), customer satisfaction (3.304) and purchase decision (2.814), all greater than 0.196, which means that the data are normally distributed.

5.2.2 Heteroscedasticity test

From Figure 3, it can be seen that the dots randomly spread, and it can be concluded that there is no heteroscedasticity in the regression model. It can be concluded that the regression model is eligible to predict purchase decisions.

Figure 3 Heteroscedasticity test

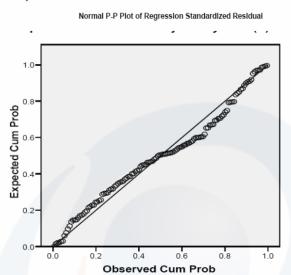


Source: SPSS Version 23

5.2.3 Linearity test

From Figure 4, as shown in the P-P plot, the distribution of unstandardised residuals follows and spreads around the diagonal line, and it can be concluded that the regression model has a normal distribution and is linear.

Figure 4 Linearity test



Source: SPSS Version 23

5.3 Path analysis

Model path analysis is used to explain the patterns of the relationships between variables to determine the direct or indirect effects from a set of independent variables (exogenous) to the dependent variable (endogenous).

5.3.1 Correlation test

In the path analysis method, to find a causal relationship among variables, we first calculate the correlation matrix of the variables of product quality, brand image, and customer satisfaction. Second, we calculate the correlation matrix of the variables of product quality, brand image, and customer satisfaction with purchase decisions.

Table 3 First correlation test result

Correlation	Coefficient correlation	Category	Probability	Classification
Product quality (X1) and customer satisfaction (Y)	0.307	Moderate	0.038	Significant
Brand image (X2) and customer satisfaction (Y)	0.436	Moderate	0.004	Significant

Source: SPSS Version 23

Table 4 Second correlation test result

Correlation	Coefficient correlation	Category	Probability	Classification
Product quality (X1) and customer satisfaction (Y)	0.343	Moderate	0.005	Significant
Brand image (X2) and customer satisfaction (Y)	0.368	Moderate	0.004	Significant
Customer satisfaction (Y) and purchase decision (Z) (ryz)	0.196	Moderate	0.039	Significant

Source: SPSS Version 23

Tables 3 and 4 show the correlation between variables. The correlation coefficient is positive (+) and indicates that there is a relationship between two variables that is significant due to the probability value <0.05.

5.3.2 Path analysis test

The data processing techniques further used in completing this research are path analysis, where the path analysis is used to determine the direct and indirect effects of the collection of variables, such as the cause variable (exogenous), on a set of other variables, which are causal variables (endogenous).

5.3.2.1 Direct and indirect influence among variables

The direct and indirect influence of exogenous variables consists of that of product quality (X1) and brand image (X2) on customer satisfaction as a mediating variable (Y) and purchase decision as endogenous variable (Z).

Table 5 Path analysis test result

Direct and indirect effe	ct	Calculation	Contribution	
X1 on Y	ρX1Y	(0.307)	0.307	
X2 on Y	ρX2Y	(0.436)	0.436	
X1 on Z	ρX1Z	(0.343)	0.343	
X2 on Z	ρX2Z	(0.368)	0.368	
Y on Z	ρYZ	(0.196)	0.196	
X1 on Z mediating Y	$\rho X1Y \cdot \rho YZ$	(0.307) (0.343)	0.105301	
$X2$ on Z mediating $Y = \rho X2Y \cdot \rho YZ$		(0.436) (0.368)	0.160448	

From Table 5, it can be seen that the amount of direct and indirect influence between variables is as follows:

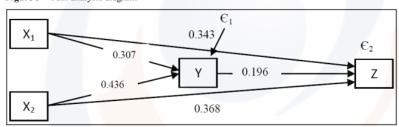
- 1 The direct effect of the product quality variable (X1) on the customer satisfaction variable (Y) is 30.7%.
- 2 The direct effect of the brand image variable (X2) on the customer satisfaction variable (Y) is 43.6%.

- 3 The direct effect of the product quality variable (X1) on the purchase decision variable (Z) is 34.3%.
- 4 The direct effect of the brand image variable (X2) on the purchase decision variable (Z) is 36.8%.
- 5 The direct effect of the customer satisfaction variable (Y) on the purchase decision variable (Z) is 19.6%.
- 6 The indirect effect of the product quality variable (X1) on the purchase decision variable (Z) through the customer satisfaction variable (Y) is 10.5%.
- The indirect effect of the brand image variable (X2) on the purchase decision variable (Z) through the customer satisfaction variable (Y) is 16.0%.

5.3.2.2 Path analysis diagram

The magnitude of the path coefficients is shown by the output path diagram using SPSS software. The values for the overall flow coefficient variables are shown in Figure 5.

Figure 5 Path analysis diagram



Source: SPSS Version 23

Based on the path analysis diagram in Figure 5, there are two lines of analysis equations. First, the exogenous variables of product quality (X1) and brand image (X2) affect the endogenous variable of customer satisfaction (Y). Second, note that the variables of product quality (X1), brand image (X2), and customer satisfaction (Y) are the three exogenous variables that have a correlative link with and directly and indirectly affect the endogenous variable of purchase decision (Z).

6 Findings and discussion

Product quality and brand image have a direct influence on the purchase decision process. The product quality variable directly influences the purchase decision process by 34.3%. This may imply that product quality accounted for 34.3% of the success rate of the purchase decision-making process of Indonesian automotive customers. If the automotive industry manages product quality well, then customers will make a purchase decision that accounts for 34.3% of the success rate. Another meaning for this result is that 65.7% of

the other variables can improve the purchase decision directly, which was not observed in this study.

Brand image has a direct impact on 36.8% of the purchase decision process. This implies that brand image contributed to 36.8% of the purchase decision process. If the automotive industry manages brand image well, then customers will make a purchase decision that accounts for 36.8% of the success rate. Another meaning for this result is that 63.2% of the other variables can improve the purchase decision directly, which was not observed in this study.

Customer satisfaction has a direct influence on 19.6% of the purchase decision. This implies that customer satisfaction contributes directly to 19.6% of the purchase decision process. If the level of customer satisfaction is good, it is able to contribute 19.6% of the increase in purchase decisions. Another meaning for this result is that 80.4% of the other variables can improve purchase decisions directly, which was not observed in this study.

Product quality, brand image, and customer satisfaction have a direct influence on purchase decisions, and the variables of product quality and brand image have no direct influence on purchase decisions through the variable of customer satisfaction.

7 Conclusions

7.1 Practical implications

The results show that the greatest factor influencing purchasing decisions is brand image. The dimensions that have the greatest influence on purchasing decisions are the image of the user, the indicator of customer expectations of a certain brand being fulfilled, and confidence when using a particular brand. Thus, the company must be able to meet customer expectations by continuing to improve the quality of its products. Continuous product quality improvement will also give customers confidence when using a product.

The greatest factor influencing customer decisions through customer satisfaction is brand image. The dimension that has the next greatest influence is user image. The indicator of the user image dimension is the customer's complaint compared with the usage of automotive products. Companies can further enhance the alertness of service staff in responding to customer complaints and quickly provide solutions to customer complaints. In addition, this user image dimension allows dealers to understand the information directly from customers and to confirm the actual car in question. Thus, by knowing the direct customer complaints, the company can provide a direct explanation to the customer and make the correct improvements to improve customer satisfaction.

7.2 Theoretical contributions

Product quality and brand image affect customer satisfaction either partially or simultaneously. The results of this study indicate that product quality significantly influences customer satisfaction. This result is in line with the previous research by Jahanshasi and Gashti (2011), which stated that product quality at Tata Motors increases customer satisfaction, and there is also a positive relationship between customer satisfaction and customer loyalty in the context of the Indian automotive industry.

Quality impact on customer satisfaction affects the higher lifetime value for customers and businesses (Verhoef and Lemon, 2013). Brand image has a significant

effect on customer satisfaction. These results are in line with previous research that has been done by Neupane (2015), who said that brand image has a positive influence on customer satisfaction. Kambiz and Naimi (2014) found that the effect of customer satisfaction on brand image has been significant.

Product quality has a significant effect on purchase decision. These results are in line with previous research by Doležalová et al. (2016), who states that customers make purchase decisions based more on significantly better quality, as the main criterion, than on price. Guatam (2014) states that safety, appearance, shape, interior features and presale and post-sale features affect customers' decision to purchase a car.

Brand image has a significant effect on purchase decisions. These results reinforce the previous research by Gurleen and Pooja (2014) that found that brand image significantly affects purchase behaviour. A similar study was conducted by Oledepo and Odunlami (2015), stating that brand image has an influence on customer purchase decisions.

Customer satisfaction has a significant effect on purchase decisions. This result reinforces the previous research conducted by Jiradilok et al. (2014) that found that satisfaction toward appropriate pricing and website information has a positive relationship with purchase intention.

7.3 Limitations of research

This study did not explore other variables that also affect purchase decisions, such as customer value and customer loyalty. This study was conducted at only one private agency and, therefore, cannot be generalised to private agencies in Indonesia. As the measurement occurred at a single point in time, whether the conclusions still apply in the long-term cannot be determined. A longitudinal study may provide a decisive answer to the question of whether the conclusion of this research still applies in the long-term.

7.4 Future research direction

Further research should expand the object of research to more than one private agency such that the results can be generalised to all private agencies in Indonesia. As previously noted, this study was conducted at a single point in time. Longitudinal research will have more moments of measurement over time. Companies need to conduct their own research to know what is desired by customers so that customer expectations can be met, and when these expectations are met, the confidence of customers when using a product is directly increased.

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