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## Brand image and product quality effects on customer loyalty mediated by customer satisfaction

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### Abstract

This qualitative research explores the interplay between brand image, product quality, customer satisfaction, and customer loyalty in the context of Bekasi batik products. The study posits that customer satisfaction is a mediating variable between customer loyalty and the independent variables of brand image and quality. Using a simple random sampling technique, data was gathered through questionnaires distributed to 100 customers at a Bekasi Batik shop located within the Bekasi City Government Office Complex, representing a population of 456 people. Data collection occurred in August 2023 at the government office complex in Bekasi city, West Java, Indonesia. The findings highlight the pivotal role of brand image, product quality, customer satisfaction, and loyalty. The research suggests that business owners in the Bekasi Batik industry should reinforce the brand image by fostering trust, incorporating added values, and cultivating prestige. Additionally, enhancing product quality through improvements in appearance, reliability, durability, and overall product attraction is recommended. The study concludes that strengthening the brand image and improving product quality is essential for fostering customer satisfaction and loyalty. These implications underscore the importance of strategic measures for Batik Bekasi businesses to thrive in a competitive market by ensuring customer contentment and building enduring loyalty.

**Keywords:** Brand Image, Product Quality, Customer Satisfaction, Customer Loyalty

### 1. Introduction

Customer loyalty is every marketer's dream. Loyal customers can ease marketing tasks through repeat purchases and recommendations to those closest to them to recognize and buy a product so that sales volume can increase and promotional activity costs are lower (Soliha et al., 2021). In this way, the company can gain profits, ensuring business continuity in the future (Huang et al., 2019). Both customer satisfaction and customer loyalty are widely discussed in previous studies. However, only a few of these studies discuss products with regional characteristics, such as Batik Bekasi products. Only 1 study was recorded that discussed Madura Batik Wantara & Tambrin (2019) in recent years, so more literature needs to be studied on this matter.

There are differences and similarities between research findings of Wantara & Tambrin, (2019) and this research. In the research of Wantara & Tambrin, (2019), product price and quality serve as independent constructs. Customer loyalty plays a role as a dependent construct. And customer satisfaction is an intervening variable. The difference between the two research is in independent construct. The independent constructs are brand image and product quality variables. Meanwhile, the similarities between these two studies are customer satisfaction as a mediator and in customer loyalty as dependent construct.

Batik Bekasi is one of Bekasi's local products, which is always strived to become a distinctive and popular product among the Bekasi community. Even though it is felt that efforts have been made to increase the popularity and preference of Batik Bekasi, it seems that these efforts have not produced the results as expected. Until now, Batik Bekasi products have not

become a preference among the Bekasi community, especially at the national level, which does not yet have a strong positioning. Even though previous efforts have been made, such as active exhibitions, training, and providing capital. The results have yet to be as expected. To find out the causes of the low popularity and public preference for Batik Bekasi, it is urgent to carry out in-depth research.

This study aims to analyze relationships among variables of brand image, product quality, satisfaction, and loyalty of customers. With hopes, this study results in theoretical and practical contributions for science and society. Looking at the introduction above, the research problems are then formulated:

- a) Do both brand image and product quality affect the loyalty of the Batik Bekasi customers positively and significantly?
- b) Do both brand image and product quality affect satisfaction of the Batik Bekasi customers positively and significantly?
- c) Does the satisfaction of Batik Bekasi customers mediate the effects of the image of Batik Bekasi brand and the quality of Batik Bekasi product on loyalty of Batik Bekasi customers?

## 2. Method

This quantitative study uses Partial Least Square (PLS) method using Smart PLS version 4 to analyze data. The research analyzes the associations among product image, product quality, satisfaction and loyalty of the customers. The variables are chosen based on the previous research. The research instrument is designed by determining the indicators of each variable based on literature reviews. Respondents' choice of each statement in variables is measured in 1-5 Likert scale. Likert scale indicates level of respondents' agreements on the indicators. The population is 456 customers from 1 outlet selling Batik Bekasi in the Bekasi City government complex, West Java Province. Respondents are Batik Bekasi customers. The reason for making Batik Bekasi customers into respondents is because they are the ones who buy and use Batik Bekasi so it is relevant to the variables being measured. Sample is calculated in accordance with the opinion of (Hair Jr et al., 2017) that the sample is determined from the indicator number that is multiplied by 5. The indicators used to measure variables are 18 indicators. Thus, the minimum sample is  $18 \times 5 = 90$  respondents. This study uses a random sampling technique with 100 respondents. Data were obtained randomly from the population so that each population member had the opportunity to be chosen as a respondent fairly.

There are secondary and primary data. The secondary data that support primary are gathered from the activities of literature studies such as journals, proceedings, and other information. The primary data are the result of questionnaires. The variables that will be used are independent, intervening and dependent variables based on the level of indicator size used by looking at previous researches. Hypothesis testing uses an inferential statistical approach via the Partial Least Square method. Hypothesis testing through data processing and testing with Smart PLS Version 4 was conducted to analyze the associations among the variables. Validity testing comes from the results of outer loadings with loading factor values above 0.7 (Sugiyono, 2018). Apart from that, validity testing can be seen from discriminant validity, where the targeted construct's loading value is more than the loading value of others. Validity is also seen from Average Variance Extracted as abbreviated by AVE. It is considered valid if its loading factor is  $> 0.5$  (Sugiyono, 2018). Reliability testing is seen from composite reliability, with a value  $> 0.7$ . Cronbach' Alpha can strengthen the reliability test with a value  $> 0.6$  for all constructs, and for Rho A a value  $> 0.7$  (Sugiyono, 2018).

Structural model measurements are from R Square and R Square Adjusted values. The value of the R Square is the determination coefficient on the dependent variable with a value of 0.75 which is considered strong, 0.5 which is considered medium, and 0.25 which is considered

weak (Sugiyono, 2018). The influences between variables are known through Bootstrapping. In the path coefficients, the *t* statistic and *p* value are shown. If the *t* statistic > *t* table and the *p* value < 5% then the hypothesis is accepted. Bootstrapping is also used to test the mediating variable. Test calculations are seen in Specific Indirect Effects provided that if the *t* statistic > *t* table and *p* value < 5%, then this means intervening variable succeeds in mediating the independent variables in influencing the dependent one.

### 3. Results and Discussion

In the first data analysis, several indicators were found to be invalid, so they had to be discarded. The invalid indicators are X<sub>1.1</sub>, X<sub>1.2</sub>, X<sub>2.1</sub>, X<sub>2.3</sub>, Z<sub>1.4</sub>, and Z<sub>1.5</sub>. In the second data analysis, the outer model is measured by presenting validity tests. The validity is confirmed from the outer loading results, cross loading results, and Average Variance Extracted as abbreviated by AVE. A reliability test was also conducted to measure the outer model. And reliability is confirmed from composite reliability, Cronbach's Alpha and rho-A. The SmartPLS output for the loading factor shows in Table 1.

Table 1.

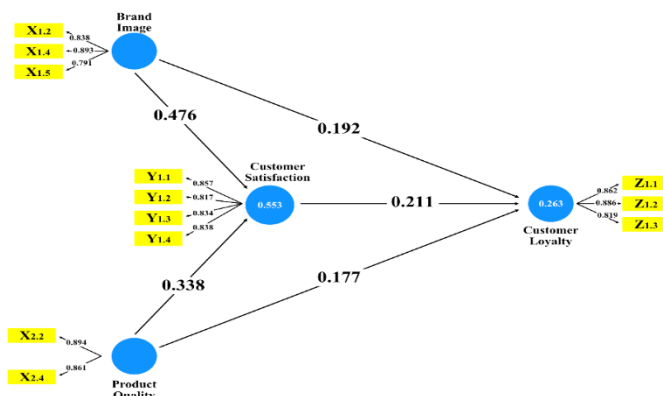
#### Outer Loading

	Cust. Satisfaction	Cust. loyalty	Product quality	Brand image
X <sub>1.3</sub>				0.838
X <sub>1.4</sub>				0.893
X <sub>1.5</sub>				0.791
X <sub>2.2</sub>			0.894	
X <sub>2.4</sub>			0.861	
Y <sub>1.1</sub>	0.857			
Y <sub>1.2</sub>	0.817			
Y <sub>1.3</sub>	0.834			
Y <sub>1.4</sub>	0.838			
Z <sub>1.1</sub>		0.862		
Z <sub>1.2</sub>		0.886		
Z <sub>1.3</sub>		0.819		

Validity is confirmed from the results of the outer loading. As shown in Table 4 all of indicators are valid as their loading factors are > 0.5. X<sub>15</sub> indicator of the brand image variable is the lowest loading factor (0.791). As the indicators of all variables have loading factors > 0.5 it means that all indicators measure all constructs are valid. The loading factors are seen in the following Figure 1.

Figure 1

#### Loading Factor Value



Next, the discriminant validity test indicators with cross loading values are shown in the following Table 2.

Table 2

*Cross Loading Value*

	Cust. satisfaction	Cust. Loyalty	Product quality	Brand image
X <sub>1.3</sub>	0.627	0.507	0.581	0.838
X <sub>1.4</sub>	0.557	0.334	0.529	0.893
X <sub>1.5</sub>	0.567	0.275	0.534	0.791
X <sub>2.2</sub>	0.611	0.402	0.894	0.631
X <sub>2.4</sub>	0.526	0.370	0.861	0.513
Y <sub>1.1</sub>	0.857	0.443	0.587	0.472
Y <sub>1.2</sub>	0.817	0.354	0.503	0.622
Y <sub>1.3</sub>	0.834	0.392	0.569	0.588
Y <sub>1.4</sub>	0.838	0.355	0.517	0.652
Z <sub>1.1</sub>	0.385	0.862	0.409	0.396
Z <sub>1.2</sub>	0.384	0.886	0.292	0.405
Z <sub>1.3</sub>	0.412	0.819	0.421	0.370

As shown in Table 2, cross loading factor on several variables where there is a loading factor value from the indicator whose value is the highest of loading factor values from other indicators. The other way to find out validity is from the square root of the value of AVE (Table 3).

Table 3

*Average Variance Extracted*

Variable	AVE
Cust. Satisfaction	0.700
Cust. Loyalty	0.733
Product Quality	0.771
Brand Image	0.708

The AVE value is > 0.5. As can be seen in Table 5, the value of AVE is appropriate for all of constructs in the research model. The lowest AVE value is 0.700 in the customer satisfaction construct and the highest AVE value in product quality one is 0.771. From these three validity testing forms, it can be confirmed that the instruments are considered valid. Reliability test is conducted by considering composite reliability, Cronbach's Alpha and rho A values.

Table 3

*Reliability Test*

Variable	Composite Reliability	Cronbach's Alpha	rho_A
Cust. Satisfaction	0.903	0.857	0.857
Cust. Loyalty	0.892	0.817	0.817
Product quality	0.870	0.703	0.711
Brand image	0.879	0.795	0.806

Apart from the instrument validity testing, another test was carried out on the instrument reliability. There are three indicators determining reliability. They are the composite reliability value of several variables measured, the value of the Cronbach's Alpha, and the value of the rho-A. The composite reliability results are considered satisfactory if they are > 0.7. Table 6 shows all of the variables have composite reliability values exceeding the requirement. It shows

constructs have met the criteria of discriminant validity. The value for product quality is the lowest (0.870).

The same thing applies to Cronbach's Alpha which shows that the values for all of constructs are  $> 0.6$ . Product quality has the lowest value (0.703). The values of Cronbach's Alpha for each variable far exceed the requirement. The lowest rho A value is 0.711, which is product quality. In conclusion, the instrument is reliable for measuring the variables. As the estimated model has met the criteria of outer model, the test of structural model is then conducted. Table 4 shows R-Square values, indicating that customer satisfaction can explain the customer loyalty variable.

Table 4

*R Square dan R Square Adjusted*

Variable	R Square	R Square Adjusted
Cust. Satisfaction	0.553	0.543
Cust. Loyalty	0.263	0.240

The value of R Square is stated strong if it is  $> 0.7$ , moderate if  $> 0.5$ , and weak if  $> 0.25$  (Hair Jr et al., 2017). As seen at Table 7, the value of R Square is 0.553. It indicates that customer satisfaction can predict accurately the customer loyalty as dependent variable. For the hypothesis testing, the path coefficient is shown in the following Table 5.

Table 5

*Path Coefficient of Direct and Indirect Effects*

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
<b>Direct Effect</b>					
Brand image -> Cust. Loyalty	0.192	0.203	0.167	1.154	0.249
Brand image -> Cust. Satisfaction	0.476	0.474	0.090	5.315	0.000
Product quality -> Cust. Loyalty	0.177	0.153	0.125	1.422	0.156
Product quality -> Cust. Satisfaction	0.338	0.341	0.075	4.529	0.000
Cust. satisfaction -> Cust. Loyalty	0.211	0.229	0.168	1.256	0.210
<b>Indirect Effects</b>					
Brand Image -> Cust. Satisfaction -> Cust. Loyalty	0.101	0.112	0.090	1.120	0.263
Product Quality -> Cust. Satisfaction -> Cust. Loyalty	0.072	0.078	0.062	1.157	0.248

## Discussion

Referring to the path coefficient values hypotheses are verified to be accepted or not. It is shown that the t-statistic on the brand image effect on customer loyalty is  $1.154 < t_{table} (1.96)$ . The original sample is 0.192 with a P value of 0.249. It indicates that brand image effect on customer loyalty is positive but not significant so that the hypothesis  $H_1$  is rejected. This

supports the findings of previous research conducted by Ayuningtyas & Rahayu (2023), Sisi (2023), and Ihsan et al. (2023). Besides, the t-statistic on the brand image effect on customer satisfaction is  $5,315 > t_{table} (1.96)$ . The original sample is 0.476 with a P value of 0.000. It indicates that the brand image effect on customer satisfaction is positive and significant so that hypothesis H<sub>2</sub> is accepted. This supports the findings of previous research conducted by Diputra & Yasa, (2021), Rivai (2021), Dos et al., (2021), Syafarudin (2021), and Hakim (2021). And, the t-statistic on the product quality effect on customer loyalty is  $1.422 < t_{table} (1.96)$ . The original sample is 0.177 with a P value of 0.156. It indicates that the product quality effect on customer loyalty is positive but not significant so that hypothesis H<sub>3</sub> is rejected. This supports the findings of previous research conducted by Taufik et al. (2022), Wantara & Tambrin, (2019), Ayuningtyas & Rahayu, (2023), and Septianingrum et al., (2023). Furthermore, the t-statistic on the product quality effect on customer satisfaction is  $4,529 > t_{table} (1.96)$ . The original sample is 0.338 with a P value of 0.000. It indicates that product quality effect on customer satisfaction is positive and significant so that hypothesis H<sub>4</sub> is accepted. This supports the findings of previous research conducted by Diputra & Yasa (2021), Rivai (2021), Syafarudin (2021), Arif et al. (2023), and Hakim (2021), and then, the t-statistic on the customer satisfaction effect on customer loyalty is  $1.256 < t_{table} (1.96)$ . The original sample is 0.211 with a P value of 0.210. It indicates that customer satisfaction effect on customer loyalty is positive but not significant, so the hypothesis H<sub>5</sub> is rejected. This is in accordance with and supports the findings of previous research conducted by Ayuningtyas & Rahayu (2023), and Nortey & Twih (2023).

It is informed that the t-statistic on the brand image effect on customer loyalty which is mediated by customer satisfaction is  $1,120 < t_{table} (1.96)$ . The original sample is 0.101 with a P value of 0.263. It indicates that brand image effect on customer loyalty which is mediated by customer satisfaction is positive but not significant so that hypothesis H<sub>6</sub> is denied. This supports researches conducted by Hayati et al., (2020) and the t-statistic on the effect of product quality on customer loyalty which is mediated by customer satisfaction is  $1.157 < t_{table} (1.96)$ . The original sample is 0.072 with a P value of 0.248. It indicates that the product quality effect on customer loyalty which is mediated by customer satisfaction is positive but not significant so that hypothesis H<sub>7</sub> is denied. This supports the finding of previous research conducted by Rusiyati et al. (2022) and Arif et al. (2023).

This study has found that there is a positive and significant effect of brand image on customer satisfaction. This means customer satisfaction with Batik Bekasi products will increase if the brand image of Batik Bekasi also increases in the eyes of customers. Therefore, structured, scheduled and continuous efforts are needed to improve the image of Batik Bekasi in the perception of customers. To satisfy their customers the owners of Batik Bekasi industries need to create trust, added values and prestige. Apart from that, it was also found that product quality influences customer satisfaction positively and significantly. It means customer satisfaction will increase if Batik Bekasi product quality has been improved. Therefore, it is important for the owners of Batik Bekasi industries to satisfy their customers. They need to improve the appearance, reliability, durability, and attraction of their products. In this study, no variables mediate the effect of brand image and product quality on customer loyalty. It means customers of Batik Bekasi products have only reached the stage of being satisfied but have not yet reached the stage of being loyal to Batik Bekasi products. This means that the Batik Bekasi customer satisfaction level still needs to be further optimized to create loyal Batik Bekasi customers.

#### 4. Conclusion

As a conclusion, this study is quantitative in nature to analyze the effects of brand image and product quality on customer loyalty mediated by customer satisfaction. The research population is customers of one of the Batik Bekasi outlets operating at the Bekasi City Government Office, totaling 456 customers. Meanwhile, the number of respondents in this study was 100 respondents. Data were collected through questionnaires distributed face to face with respondents by providing the questionnaire in hard copy form or showing a barcode to be scanned to obtain an electronic questionnaire. The questionnaire was recapitulated, and the result is processed using the smartPLS version 4 application to test the validity and reliability of the research instrument and find relationships between variables to verify the hypotheses that had been previously developed. To verify the hypothesis, it found brand image has a positive and significant effect on customer satisfaction. Besides, product quality has a positive and significant effect on customer satisfaction. However, neither brand image nor product quality have significant effects on customer loyalty either directly or indirectly. And customer satisfaction does not mediate the effects of brand image and product quality on customer loyalty. It is advisable for Batik Bekasi industry owners to strengthen the brand image of Batik Bekasi by creating trust, added values and prestige and to improve their product quality by improving the appearance, reliability, durability, and attraction of their products. It is believed that the strengthening of brand image and product quality improvements will create satisfaction and loyalty of customers.

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