

Customer Satisfaction Analysis on E-Commerce Sites: Quo Vadis The Role of Brand Leadership?

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Abstract -This study aims to investigate the effect of brand leadership (consisting of the dimensions of quality, value, innovation, and popularity) perceived by consumers of an e-commerce website on customer satisfaction among private college students. The sample of this research was taken from 1026 students using a simple random sampling technique and using SEM (Structural Equation Model) with SmartPLS software version 3.0 as a statistical tool. The results of this study indicate that all dimensions of brand leadership have a positive and significant effect on customer satisfaction. The quality dimension has the most influence to drive customer satisfaction on e-commerce sites. Then followed by the dimensions of value, innovation, and popularity. The study notes that consumers have logical opinions on leading brands even when they are not yet popular. Online reviews and word-of-mouth reviews can be used to increase brand popularity based on the best product quality.

Keywords: Brand leadership, customer satisfaction, e-commerce.

I. INTRODUCTION

Digital developments have changed the way consumers behave. It is undeniable that currently, people in the world and Indonesia have made a lot of purchases online. The number of transactions from year to year is increasing and the types of goods that people buy are also increasingly diverse. From survey data conducted in the first semester of 2019 conducted by JAKPAT, it is known that 60.5% of respondents prefer to do online shopping activities rather than visiting offline stores. The reasons respondents prefer to make transactions online are because it is faster and more efficient (65.7%), there are many promos and discounts (62.9%), competitive prices tend to be cheaper (59.3%), and time flexibility for shopping (59%). Taking sources from the wearesocial.com report in January 2019, there was an increase in the number of people conducting e-commerce transactions by 5.9% compared to the previous year and this can still grow because the penetration of the e-commerce market in Indonesia is still quite low, which is at 40% (Binus.ac.id, 2019).

In addition, global e-retail sales accounted for 10.2 percent of all retail sales worldwide in 2017, and this number is expected to reach 17.5 percent by 2021 (Chiu & Cho, 2019). Still referring to the report from wearesocial.com, there is a significant increase in the online shopping behavior of the Indonesian people. The highest growth was in the food and care product category, which was 30%, the second was the toy and hobby product category at 25%, and the third was in the electronic goods category at 24%. However, in terms of transaction value, the highest sales were in the online travel category with a nominal value of USD 9,376 billion, then there were sales of furniture of USD 1,674 billion and toys and hobbies of USD 1.46 billion. Looking at the results of these data, it can be seen that nowadays many people have started to switch from those who usually like shopping for household needs by visiting stores,

gradually switching to shopping for household needs online. Other than that, traveling and buying a toy and hobby has become a lifestyle and a necessity for people in Indonesia (Binus.ac.id, 2019).

Due to the intensification of online shopping, the e-commerce war is becoming more and more intense, especially among the most popular e-commerce websites in the US, such as Amazon, eBay, BestBuy, and Target. These e-commerce websites offer an easy and economical way for manufacturers or retailers to distribute their goods more effectively and reach potential consumers (Garín-Muñoz et al., 2019). Meanwhile, consumers have more choices and better transactions on different e-commerce websites. Thus, from a consumer and business point of view, e-commerce managers and academics need to understand these virtual distribution channels (Tsagkias et al., 2021).

In addition, as consumers become more technology-savvy, e-commerce managers and academics need to comprehensively understand consumer needs and the factors that influence their decisions to select and shop on e-commerce websites. In general, there are two stages of understanding online consumption behavior. The first stage is concerned with how to encourage people to buy online, and the second stage is to encourage them to repurchase, the important thing is how to retain customers who have visited e-commerce websites. It costs time and effort to retain existing customers than to acquire new ones. These repeat customers spend more money on their purchases and generate more profitability than new customers (Chiu & Cho, 2019).

Thus, how to retain existing customers to make repurchases is a major concern for e-commerce websites than ever before (Sullivan & Kim, 2018). However, it is said that the repurchase rate is the most neglected indicator for e-retailers. Moreover, it should be noted that only 32 percent of customers repurchase on the same e-commerce website in their first year (Chiu & Cho, 2019).

Thus, e-commerce websites that focus on these attributes can create a “branded” shopping experience for consumers (Mohseni et al., 2018). Meanwhile, consumers are becoming more aware of the value of e-commerce websites and evaluating various attributes and services provided by e-commerce websites (Garín-Muñoz et al., 2019). However, the role of consumer-perceived brand leadership of e-commerce websites in customer experience and satisfaction is still unknown. Therefore, the main objective of this study was to investigate the effect of perceived brand leadership of e-commerce websites on customer satisfaction. This study explores the dimensions of brand leadership consisting of quality, value, innovation, and popularity. This research seems to be a pioneer in the same study by making university students the subject and unit of analysis.

Therefore, it is important to identify the factors that influence online customer satisfaction behavior. Previous studies have examined various factors that influence online consumer satisfaction on e-commerce websites. These include perceived value, website quality, functionality, innovation, and popularity (Chiu & Cho, 2019). These factors mainly explore consumer perceptions and attributes of a particular e-commerce website. Previous studies have found that consumers perceive brand leadership as influencing their decision-making behavior (Widiandita & Ketut, 2020). More specifically, consumers may prefer a reputable brand or service not only because it provides better quality or value, but also because it represents a self-image (Chang & Ko, 2014). Today, more e-commerce platforms allow consumers to easily browse and compare different e-commerce platforms before making a purchase.

II. METHOD

According to Creswell & Creswell (2017), if the purpose of this study is to determine the relationship between the variables studied, the quantitative approach is the best. Quantitative research methods are suitable for testing theories

and hypotheses through the use of a set of statistical tools (Creswell & Creswell, 2017). Therefore, this study uses a survey method to test the formulated hypothesis. Therefore, a questionnaire was adopted as an instrument to collect the required data. The study population consisted of 1205 students at private universities in Tangerang. Using simple random sampling, 1205 questionnaires were sent online to the population. A total of 1026 questionnaires were returned and valid, making up a response rate of 85.1%. Therefore, according to Roscoe et al. (1975), the number of samples obtained was very adequate.

The nature of this study involves a dependent effect between latent constructs and manifest variables, therefore, the reflective measurement model is suitable for this study (Hair Jr et al., 2017). All adopted items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The Brand Leadership (KM) instrument consists of four dimensions, namely quality consisting of 3 items (KUL1-KUL3), value consisting of 3 items (NIL1-NIL3), innovation consisting of 3 items (INO1-INO3), popularity consisting of 3 items (POP1-POP3) adapted from Chang & Ko (2014). The instrument for measuring customer satisfaction consists of 3 items (KP1-KP3) adapted from Janda et al. (2002).

The most popular statistical techniques under the Structural Equation Model SEM are the covariance-based approach (CB-SEM) and the variance-based partial least squares technique (PLS-SEM) (Sarstedt et al., 2014). However, PLS-SEM has recently received wide attention in many disciplines such as marketing, strategic management, management information systems, and other disciplines (Hair et al., 2012). The ability of PLS-SEM to deal with problematic modeling problems that are common in the social science environment such as unusual data characteristics (e.g. non-normal data) and highly complex models is an important reason behind the increased use of this approach. Considering the advantages of this approach, this study uses PLS-SEM to fully test the proposed hypothesis. SmartPLS 3.0 software was performed to evaluate each outer model and inner model. Testing of the outer model is carried out to ensure the reliability and validity of the measurements, while the hypotheses introduced are checked through the inner model. Furthermore, the final results of the questionnaire which were then used in this study are as mentioned in Table 1.

Table 1. Research Items List

Notations	Item	References
Brand Leadership (BL)		Chang & Ko (2014)
Quality:		
Q1	This online shopping site has a higher standard of quality.	
Q2	This online shopping site excels in quality standards.	
Q3	These online shopping sites offer higher quality features.	
Value:		
V1	Products from this online shopping site have reasonable prices.	
V2	Products from this online shopping site have better benefits in terms of price.	
V3	The products of this online shopping site offer more benefits for the price.	
Innovativeness		
:		
I1	This online shopping site is more dynamic in improvement.	
I2	This online shopping site is more creative in products and services.	
I3	This online shopping site is more of a trendsetter.	
Popularity:		

Notations	Item	References
P1	This online shopping site is preferred.	
P2	This online shopping site is better known.	
Customer Satisfaction (CS)		Janda et al. (2002)
CS1	I am satisfied with my decision to use this online shopping site.	
CS2	Based on all my experiences with this online shopping site, I am very satisfied.	
CS3	I thought I did the right thing when I decided to use this online shopping site.	

According to Sekaran & Bougie (2003), the theoretical framework is the foundation on which all research projects are based. From the theoretical framework, hypotheses can be developed that can be tested to determine whether the formulated theory is valid or not. Then later it will be measured by appropriate statistical analysis. For this reason, the authors build a research model as shown in Figure 1 below:

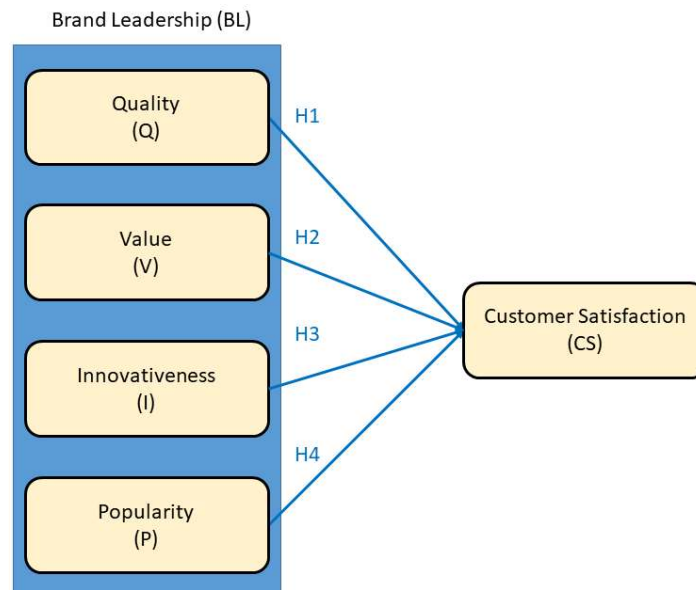


Figure 1. Research Model

In the same vein, the dimensions of Brand Leadership that online consumers value (eg website content and functionality) can increase not only satisfaction but also repurchase intention. For example, Chang et al. (2016) found that perceived Brand Leadership has a significant influence on consumer word of mouth (WOM) promotions. Thus, this study establishes the following:

hypotheses to test the effect of the four dimensions of Brand Leadership (ie quality, value, innovation, and popularity), on customer satisfaction:

- H1. Website quality has a positive influence on customer satisfaction.
- H2. Perceived value has a positive influence on customer satisfaction.
- H3. Perceived innovativeness has a positive influence on customer satisfaction.
- H4. Perceived popularity has a positive influence on customer satisfaction.

III. RESULT AND DISCUSSION

Result

A total of 1026 students participated, consisting of boys (61%) and girls (39%). Almost all respondents have the same age group, namely 17-24 years. The measurement model testing phase includes testing of convergent validity, discriminant validity. Meanwhile, to test construct reliability, Cronbach's alpha and composite reliability values were used. The results of the PLS analysis can be used to test research hypotheses if all indicators in the PLS model have met the requirements of convergent validity, discriminant validity, and reliability testing. Convergent validity test is done by looking at the loading factor value of each indicator to the construct. In most references, a factor weight of 0.7 or more is considered to have strong enough validity to explain the latent construct (Chin, 1998; Ghozali, 2014; J. F. Hair et al., 2010). In this study, the minimum accepted loading factor is 0.7, and with the condition that the AVE value of each construct is > 0.5 (Ghozali, 2014). After going through SmartPLS 3.0 processing, all indicators have a loading factor value above 0.7 and an AVE value above 0.5. The fit or valid model of this study can be seen in Figure 2. Thus, the convergent validity of this research model has met the requirements (Purwanto et al., 2019, 2020; Purwanto, Asbari, & Santoso, 2021b, 2021a; Purwanto, Asbari, Santoso, et al., 2021). The value of loadings, Cronbach's alpha, composite reliability, and AVE for each construct can be seen in Table 2.

Discriminant validity is carried out to ensure that each concept of each latent variable is different from other latent variables. The model has good discriminant validity if the AVE squared value of each exogenous construct (the value on the diagonal) exceeds the correlation between the construct and other constructs (the value below the diagonal) (Ghozali, 2014). The results of the discriminant validity test are using the squared value of AVE, namely by looking at the Fornell-Larcker Criterion Value obtained as shown in Table 3. The results of the discriminant validity test in table 3 show that all constructs have a square root value of AVE above the correlation value with the other latent construct (via the Fornell-Larcker criterion). Likewise, the cross-loading value of all items from one indicator is greater than the other indicator items as mentioned in Table 3, so it can be concluded that the model has met discriminant validity (Fornell & Larcker, 1981).

Furthermore, collinearity evaluation is carried out to determine whether there is a collinearity problem in the model. To find the collinearity, we need the VIF collinearity statistics of each construct. If the VIF is more than 5, then the model has collinearity (Hair et al., 2014). As shown in Table 4, all VIF scores are less than 5, i.e. the results of the collinearity structural model reveal VIF values below 2. This shows that this research model does not have multicollinearity problems.

Construct reliability can be assessed from the value of Cronbach's alpha and composite reliability of each construct. The recommended value of composite reliability and Cronbach's alpha is more than 0.7 (Ghozali, 2014). The results of the reliability test in table 2 show that all constructs have composite reliability and Cronbach's alpha values greater than 0.7 (> 0.7). In conclusion, all constructs have met the required reliability.

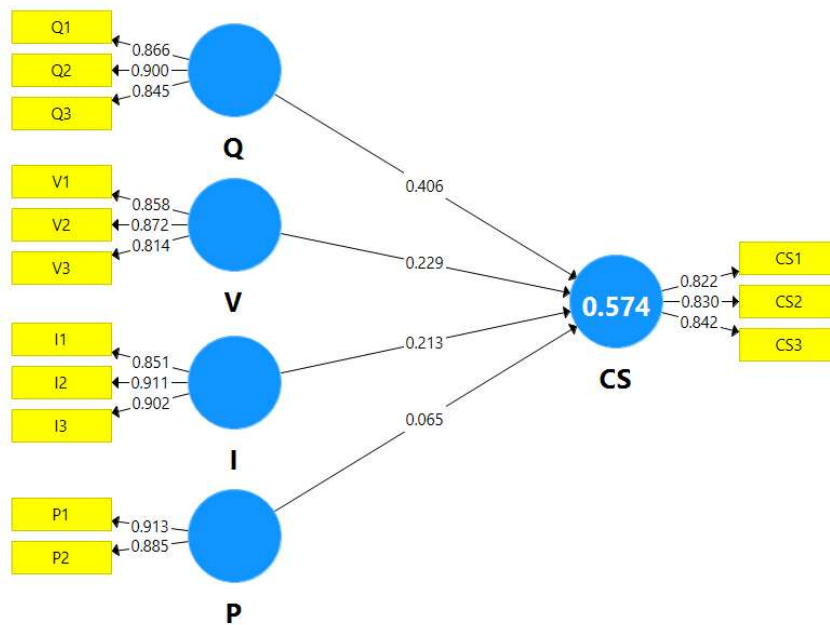


Figure 2. Valid Research Model
Source: SmartPLS 3.0 Processing Results (2022)

Table 2. Items Loadings, Cronbach’s Alpha, Composite Reliability, and Average Variance Extracted (AVE)

Variables	Items	Loadings	Cronbach’s Alpha	Rho_A	Composite Reliability	AVE
<i>Brand Leadership: Quality (Q)</i>	Q1	0.866	0.840	0.840	0.904	0.758
	Q2	0.900				
	Q3	0.845				
<i>Brand Leadership: Value (V)</i>	V1	0.858	0.805	0.808	0.885	0.720
	V2	0.872				
	V3	0.814				
<i>Brand Leadership: Innovativeness (I)</i>	I1	0.851	0.866	0.867	0.918	0.789
	I2	0.911				
	I3	0.902				
<i>Brand Leadership: Popularity (P)</i>	P1	0.913	0.764	0.773	0.894	0.809
	P2	0.885				
Customer Satisfaction (CS)	CS1	0.822	0.777	0.780	0.870	0.691
	CS2	0.830				
	CS3	0.842				

Source: SmartPLS 3.0 Processing Results (2022)

Table 3. Discriminant Validity

Variables	I	CS	Q	V	P
I	0.888				
CS	0.583	0.831			
Q	0.483	0.678	0.870		
V	0.565	0.627	0.615	0.848	

Variables	I	CS	Q	V	P
P	0.685	0.485	0.431	0.434	0.899

Source: SmartPLS 3.0 Processing Results (2022)

Table 4. Collinearity (VIF)

Variables	I	CS	Q	V	P
I	2.279				
CS					
Q		1.714			
V		1.893			
P		1.931			

Source: SmartPLS 3.0 Processing Results (2022)

Table 5. R Square Value

Variables	R Square	R Square Adjusted
CS	0.574	0.573

Source: SmartPLS 3.0 Processing Results (2022)

Table 6. Hypotheses Testing

Hypotheses	Relations hip	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
H1	Q -> CS	0.406	0.403	0.026	15.918	0.000	Supported
H2	V -> CS	0.229	0.232	0.033	6.830	0.000	Supported
H3	I -> CS	0.213	0.213	0.038	5.665	0.000	Supported
H4	P -> CS	0.065	0.065	0.032	2.010	0.045	Supported

Source: SmartPLS 3.0 Processing Results (2022)

Hypothesis testing in PLS is also known as inner model testing. This test includes a test of the significance of direct and indirect effects as well as measuring the magnitude of the effect of exogenous variables on endogenous variables. To determine the effect of the four dimensions of Brand Leadership consisting of quality (Q), value, innovation, and popularity on customer satisfaction, a direct influence test is needed. The effect test was carried out using the t-statistical test in the partial least squared (PLS) analysis model using the SmartPLS 3.0 software. With the bootstrapping technique, the R Square value and the significance test value were obtained in Table 5 and Table 6. The results for all hypotheses (H1, H2, H3, H4) are supported.

Discussion

Based on Table 5, the R Square value of customer satisfaction (CS) is 0.574 which means that the customer satisfaction (CS) variable can be explained by the four dimensions of Brand Leadership, namely quality (Q), value (V), innovation (I), and popularity. (P) is 57.4%, while the remaining 42.6% is explained by other variables not discussed in this study. Meanwhile, Table 6 displays the t-statistics and p-values that show the influence between the research variables that have been mentioned.

The main objective of this study was to investigate the effect of Brand Leadership on customer satisfaction in purchasing at e-commerce sites based on CAPS (Mischel and Shoda, 1995) and ECT (Oliver, 1980). This research is relatively new which is applied to the unit of analysis of university students in Indonesia. The results of this study confirm that all dimensions of Brand Leadership are found to have a positive and significant positive effect on customer satisfaction.

In addition, the quality dimension of Brand Leadership was found to have the most significant effect on satisfaction. Next followed by the dimensions of value, innovation and the last is the dominance of popularity. The discussion of this research describes each dimension of Brand Leadership. First, it has been noted that, among various aspects of Brand Leadership, the perceived quality of online sites is the most important area in the e-commerce field (Bai et al., 2008). The results obtained in this study support the perception that the quality of a website has a positive effect on satisfaction (H1). This finding echoes previous research that perceived website quality to play an influential role in consumer satisfaction. Meanwhile, the popularity dimension has the lowest effect (0.065) to influence customer satisfaction among students. That is, this study indicates that the student respondents use the logic of quality rather than emotional popularity.

However, this study differs from the findings of Chiu & Cho (2019). In Chiu & Cho's research (2019), the dimensions of quality and innovation do not have a positive and significant effect on customer satisfaction, while this study finds that the four dimensions of brand leadership have a positive and significant effect, with different levels of significance. This study proves that students' perceptions of evaluating e-commerce sites are more logical, holistic, and comprehensive. In the perception of the respondents in this study, the quality dimension does rank at the top, but the respondents still assess the need for other brand leadership factors or dimensions that must be properly involved.

The practical implication of the findings of this study is that to attract non-tech-savvy consumers, word of mouth is a powerful marketing tool and an effective marketing tool for building popularity. Of course, it must be followed by adequate quality and innovation. Therefore, when service providers ensure that this quality dimension is well developed, it can encourage consumers to be loyal to the brand in question.

However, this research is also not without limitations. This study in the future needs to involve the gender and age factors of the respondents so that they can map out in more detail each influence of the existing brand leadership dimensions. Perhaps, the findings of this study will reveal new, more detailed, and useful facts for the development of e-commerce businesses in the future. It is also possible to extend the theoretical model of this study to include additional dependent variables such as consumer satisfaction and community culture.

IV. CONCLUSION

Finally, the findings of this study confirm that all dimensions of brand leadership, which consist of the dimensions of quality, value, innovation, and popularity, have a positive and significant influence on customer satisfaction on products marketed on e-commerce sites. The findings and implications of this study are largely in line with the existing literature, which was discussed earlier.

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