

## E-Satisfaction and E-Loyalty of Online Marketplace Mobile Applications: An Empirical Channel Study in Indonesia

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Received: July 14, 2022. Revised: July 30, 2022. Accepted: September 05, 2022.

### Abstract

**Purpose:** This study analyzes the effects of variables affecting e-satisfaction and e-loyalty in e-commerce. **Research design, data, and methodology:** A survey was conducted to 384 Indonesia online shopping mobile application users. The questionnaire construct was designed based on several independent variables, such as application attractiveness, application functionality, and customer service on e-satisfaction and e-loyalty. E-satisfaction was positioned as an intervening variable to determine the effect on e-loyalty. **Results:** Application attractiveness, application functionality, and customer service shown positive effect on e-satisfaction in online shopping mobile application. At the same time, e-satisfaction also affected e-loyalty significantly as referred in previous studies. However, application attractiveness, while showed positive effect on e-satisfaction, in contrary with previous study does not showed very significant effect. **Conclusion:** Application functionality significantly influences users satisfaction compared to application attractiveness. E-satisfaction mediates as a factor between visual design, information access, and transaction in online shopping mobile application, which stimulates user loyalty. The study findings' can be a reference for companies to create and maintain users' satisfaction and loyalty via different aspects of mobile application. Further research should be conducted on other field of study as the industry has different aspects that affects user loyalty.

**Keywords:** E-Loyalty, E-Satisfaction, Online Marketplace, E-Commerce, Mobile Applications

**JEL Classification code:** D12, L81, M30, M31

### 1. Introduction

Rapid technology advancement transformed website access on computers into the usage of mobile applications on smartphones. Nowadays, the existence of mobile applications has been developed to wide range of users and become a part of people's daily life (Baabdullah et al., 2019;

Lu et al., 2019; Malaquias & Hwang, 2019; Ismagilova et al., 2019). Mobile applications are developed for mobile devices and users have the access to download and facilitate the users with various features. Applications on mobile devices were designed to be used with smartphones and other devices such as iPad, tablet, and others (Alalwan, 2020). By using applications on mobile devices, users are able to use the mobile applications to support many kinds of

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activities that include online shopping. Globally, people are free to visit online marketplace, hence companies developed different applications so that users have access to e-commerce by using smartphones and other mobile devices.

Online shopping has significant differences compared to the brick-and-mortar setting where online marketplace can be easily accessed and practical without the boundary of spaces (Chang & Wang, 2011). Users may browse products on different platforms, so that user-friendly and responsive applications may maintain their users to do repeat purchases on certain online marketplaces. With the current competition in the industry, technology companies need to understand how to satisfy the users, so that companies are able to maintain growth, market share, and loyalty which drives the number of sales and revenue (Aaker, 1991).

Product quality can be considered as a vital component that affects customer satisfaction and loyalty (Yusuf et al., 2019). In the information and technology context, a product is something made to be used by users, for example software or application. One of the challenges in e-commerce is how a platform can create and maintain the user's satisfaction (Rita et al., 2019). Prior studies found that in online marketplace, user's satisfaction has positive effect, both directly and indirectly to user loyalty toward an online shopping platform (Quan et al., 2019; Camilleri, 2021; Kaya et al., 2019).

Loyalty is considered as a complex concept that needs to be evaluated from different aspects of studies (Ha, 2004). Generally, loyalty can be defined as behavior affected by psychological processes that cause bias as a person make decision to purchase goods (Jacoby, 1971). In brand context, loyalty is an attitude, and behavioral response regarding a one or more brands in a certain product category, in which consumers expressed a preference frequently over a period of time (Engel et al., 1973). Other researchers have defined loyalty as a favorable attitude toward a brand, resulting in repeat purchase of a brand over time (Assael, 1984; Keller, 1993).

E-commerce commonly has a business-to-consumer model that directly connects a platform with the buyers (Khan et al., 2019). With the business model, creating and maintaining user's satisfaction becomes necessary by creating attractive and functional mobile applications. Online marketplace also needs to provide service to the users on personal level (Tong et al., 2020). By giving users a service that is able to satisfy their needs, users have the potential to revisit a certain online marketplace and lead to repeat transactions (Li et al., 2017).

In online marketplace context, satisfaction and loyalty can be evaluated as e-satisfaction and e-loyalty. Both concepts have the same characteristics as conventional business. However, the concepts are applied to electronic business or e-commerce, which one of them is online

marketplace. Moreover, loyalty may be evaluated as a metrics to predict business performance (Morgan & Rego, 2006).

## 2. Literature Review

### 2.1. E-Loyalty

Consumer loyalty in the electronic business industry drives users to revisit an e-commerce website or mobile shopping application to repeat a purchase (Cyr et al., 2007). User loyalty towards a certain online shopping platform has a potential to be a major factor to generate profit. Consumers who make good use of mobile shopping applications or websites are expected to find alternative options to satisfy their shopping needs through the use of applications (Anderson & Srinivasan, 2003). Consumers' intention to repurchase is often affected by the likelihood of past experience of shopping in the same stores, websites, or platforms (Nguyen et al., 2018; Zeithaml et al., 1996).

Consumer loyalty in digital context or widely known as e-loyalty prompts users to revisit a website and do repeat purchases for certain products. Anderson and Srinivasan (2003) defined e-loyalty as a customer's positive attitude towards an electronic business, resulting in repeat purchase behavior. Users and their loyalty to an online marketplace is a vital component to generate profit and revenue. Online shopping website or application users tend to be less loyal while online shopping compared to consumers who purchase products or service through brick-and-mortar which provides physical presence of a business (Rajamma et al., 2007).

Loyalty commonly affected by how users are satisfied with products and services purchased (Homburg & Giering, 2001). By repeated shopping experience, e-loyalty may be gradually invested in users or customers (Alshurideh et al., 2012). E-loyalty becomes a significant factor of e-commerce sustainability as acquiring users costs higher compared to maintaining existing customers (Manaf et al., 2018). User loyalty is expressed by the willingness to pay a higher price on a platform compared to others who offer the same service and benefit (Chaudhuri & Holbrook, 2001).

### 2.2. E-Satisfaction

Customer's satisfaction is considered a fundamental concept in marketing studies. Building consumer and user's satisfaction is deemed as one of the main objectives in a business for long term benefit from word of mouth, loyalty and financial profits (Greenwell et al., 2002). It has been used as a construct in various researches to measure overall satisfaction towards a service (Yang & Peterson, 2004; Chen

& Tsai, 2008). Customer satisfaction is often described as subjective judgment driven by consumers' personal experience of pleasure or disappointment according to each own expectation of certain products or services (Oliver, 2014; Walker, 1995).

Satisfaction generated by using online shopping website or mobile application represents users' previous purchasing experience (Anderson & Srinivasan, 2003). It describes fulfillment of needs based on positive and negative response regarding a purchased product or service (Evanschitzky et al., 2014; Collier & Bienstock, 2006). Customer's satisfaction in online shopping context, customer's satisfaction is regarded as e-satisfaction. It constitutes experience of prior purchase on a certain online shopping website or mobile application. Establishing loyalty can be settled by giving added value to a service or platform, which eventually become the main objective of e-commerce websites or mobile applications. Previous studies found that quality of an e-commerce website and user's satisfactions has significant effect towards loyalty in online shopping service (Rodríguez et al., 2020; Nguyen et al., 2018). Prior researches also concluded that e-satisfaction has significant effect on e-loyalty (Chiu et al., 2009; Shankar et al., 2003).

### 2.3. Application Attractiveness

Researchers implied that design and aesthetic outlook of a website or mobile application as an important factor of electronic service quality (Li et al., 2017; Yoo & Donthu, 2001). Aspects including structure, layout, and how contents are organized may be able to grasp the user's attention. In contrast, a website or application that displays unattractive design may trigger user's to visit competitors instead (King et al., 2016). Mobile applications with appealing design are capable of providing clear information to users with its layout and user-friendly fonts. Moreover, visual aid acts to guide users on taking action with clear instruction, creating pleasant experiences for users during the process of transaction (Flanagin et al., 2014). On the contrary, confusing instructions and layout might hinder users from completing transactions on e-commerce applications.

Aesthetic design of a mobile application plays an important role to offer users the best experience on using online service (Li & Yeh, 2010; Ranganathan & Ganapathy, 2002). The looks of a website or mobile application often become the foremost determinant, in which users notice on their first visit. As appearances can be subjective to various individuals based on preference, users may have different views on what gives a mobile application an attractive outlook. Website and application developer applies color and certain logo to interact with the users (Camilleri, 2021). Moreover, images, animations and other multimedia features are included to improve the application looks.

Most of the time, too much or too little images, small texts, and inappropriate images should be avoided as using them on mobile applications is the wrong approach for online users. Several studies reported different findings that attractive designs have an effect on online consumer behaviors. Parasuraman (2000) found that website appearance persuades users to continue browsing and revisit a platform, whether the offered products are appealing or not. Other researchers found that website and application design positively affects customer's satisfaction (Tsang et al., 2010; Wolfenbarger & Gilly, 2003).

### 2.4. Application Functionality

Functionality of a mobile application is related to platform's utility, technical capability, and efficiency on conveying of certain product (Camilleri, 2021). Online users generally perceive functionality of a mobile application if they are checking content and information with very least effort (Collier & Bienstock, 2006). Therefore, online shopping applications should be designed to be helpful and able to fulfill user's needs of information during online shopping activity from browsing products to finishing transactions. Potential consumers need to be in position to clearly understand contents, including terms and conditions. Website and mobile application ought to be reliable, accurate, updated, and complete (Filiari, 2015).

Online shopping application technical functionality connected with e-commerce service accuracy, for example when e-commerce systems should display correct information of product stocks availability. Commonly, users would evaluate a range of products available on an online shopping website or application. Some online shopping platform implemented clear information that offers various flexible payment and delivery methods as per users' preference, also return and refund policy. User's perception on application functionality and e-satisfaction are related to information displayed on online shopping applications (Nguyen et al., 2018). Hence, application functionality is examined as one of the influential dimensions that affects user's satisfaction (Adam et al., 2021; Tsang et al., 2010).

### 2.5. Customer Service

To answer questions from users, a platform may redirect users with chatbots, chat service, or if needed more assistance a customer service representative may offer help (Adam et al., 2021; Nordheim et al., 2019). Customer service refers to the capability of a platform to communicate with users upon issue or trouble occurred during the process of online shopping.

An online shopping platform is able to maintain relationships with its users by resorting to several practices.

A platform should always open a communication channel accessible to all users. When a problem arises, a platform ought to provide help to the concerned users (Wolfenbarger & Gilly, 2003). Moreover, customer service needs to be responsive and aid users as soon as possible upon receiving questions related to the platform service. Customer services also give added value to users' experience and help building relationships with users by presenting additional services and information (Cox & Dale, 2002). By the importance of relationship with users, customer service is considered as an important factor in online services or e-service quality (Gounaris & Dimitriadis, 2003).

Customer service refers to level of service and return or refund policy during and after transactions are completed (Blut, 2016). Businesses with brick-and-mortar settings mostly are supported by customer service staff to help customers during the shopping process. In contrast with online businesses, sometimes customers can finish a transaction process without assistance of customer service (McLean & Wilson, 2016). While online users have knowledge of online shopping, some platforms offer customer service that may help users regarding more or detailed information about certain products. Some companies or platforms use internet based media like live chat, online help center, support page, and frequently asked questions (FAQ) in websites or mobile applications (Turel & Connelly, 2013). Lee and Lin (2005) found that customer service slightly affects user's satisfaction in online shopping. Blut (2015) also mentioned that customer service may affect e-service quality, which directly has an effect on e-satisfaction.

### 3. Research Method

#### 3.1. Data Collection

Quantitative approach is used in this research on data collection and analysis (Cresswell, 2017; Neuman, 2013). A survey was conducted to randomly picked respondents, which the criteria of the respondent is a user of online shopping mobile application in Indonesia. This study aims to define the responses of participants by utilizing online questionnaire. Therefore, this study use non-probability sampling method. The total sample of this study was 384 respondents.

The data processing and statistical analysis from questionnaire results are conducted by utilizing AMOS Covariance Based SEM analysis. Analytical details of this study are described with the following: First, the result starts with sample characteristics, then proceeds to survey questions reliability. Lastly, effects between application attractiveness, application functionality, customer service,

e-satisfaction, and e-loyalty are examined. Research models are shown in Figure 1 with five constructs that will be collected by using a questionnaire.

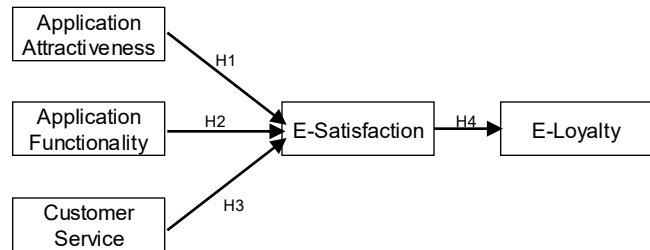


Figure 1: Research Model

### 3.2. Hypothesis Development

#### 3.2.1. Application Attractiveness dan E-Satisfaction

Visual design on a website or application is a differentiating factor among e-commerce platforms as a forte among competition in the industry (Bleier et al., 2019). Appealing website or application display can be considered as an asset for a company. Visuals displayed to the audiences may establish brand image of a company or business and improve online shopping experience (Jiang et al., 2016; Xu & Schrier, 2019). Design visual serves as a balance, emotional appeal, and aesthetics of a website by utilizing colors, shapes, fonts, music, animation, and other media (Cyr et al., 2006).

Previous studies found different results related to visual outlook and the effect to loyalty and repurchase decision on a same platform. A study by Kim and Lennon (2008) findings showed that visual design affects user behavior on using a service, but does not directly affect repurchase intention. Another study found that user's satisfaction is affected by pragmatic factors compared to hedonistic elements, including visual design (Hassenzahl, 2004).

To improve online shopping experience, companies invest in visual design of the website or platform they're using (Jongmans et al., 2022). Attractive website or application visual could serve as a benchmark on how a platform designed by companies to establish satisfaction on the users. This research emphasizes the intervening variable which shows a significant effect between application attractiveness and e-satisfaction (Camilleri, 2021).

**H1:** Application attractiveness has positive effect on e-satisfaction

#### 3.2.2. Application Functionality dan E-Satisfaction

Functionality describes how a website or application is functional, structured, and able to fulfill the users' needs (Bertot et al., 2006). Website and mobile applications equipped with well-designed functionality have the

potential to create and improve quality of service. There are six dimensions of functionality that includes visual, information, transaction process, entertainment, time needed for users on service, and trust (Kim & Stoel, 2004). Seffah et al. (2008) developed a model by adding security dimensions from prior study. Adjustment and personalization also work as an important factor on functionality that affects satisfaction by limiting information, so that users receive sufficient information without being overloaded with non-related details (Liang et al., 2007).

Previous studies found that functionality affects user's satisfaction on online service. Security, privacy, and navigation as functionality dimensions have significant effects on satisfaction (Tandon et al., 2016). Other study discovered that website design, information quality, payment methods, e-service quality, product quality, and shipment service have positive effect on satisfaction (Guo et al., 2012). Application functionality is proved to be essential towards user's satisfaction and needs to further in depth study.

Information display on online shopping mobile applications is considered a crucial element on a platform towards the users. User's perception regarding application functionality on e-satisfaction is possibly affected by the wide range of products and information presented by a platform (Nguyen et al., 2018). Previous study found that application functionality has a positive effect towards e-satisfaction (Adam et al., 2020).

**H2:** Application functionality has positive effect on e-satisfaction

### 3.2.3. Customer Service dan E-Satisfaction

Commonly, customer service is provided in different forms of service, from direct representatives, problem solving, answering questions, payment information, and shipment status of a buyer (Zeithaml et al., 2002; Park & Kim, 2003). Customer service is defined as activity that involves interaction between clients and organization to mutually reach expectation and satisfaction in a business or service (Lovelock, 2015). Hence, two objectives of customer service are determined; customer satisfaction and operational efficiency.

Previous studies found a significant effect of customer service and satisfaction. Satisfied customers potentially use the same service in the near future, which customer deems satisfying (Norizan & Abdullah, 2010). After sales service is also considered as an important factor of customer satisfaction (Reibstein, 2002). There are several fundamental elements of an e-commerce business model, one of them is how a company or service is able to respond to customers or users' questions regarding complaints and service quality (Hsu, 2008; Liu et al., 2008).

Customer service in an online shopping context is defined as the capability of a website or application in maintaining communication with users when trouble occurs during the transaction process. Platforms are able to build long-lasting relationships with the users by offering personalized customer service and giving added value in time of customer's need. Previous study found positive effect of customer service and e-satisfaction (Lee & Lin, 2005).

**H3:** Customer service has positive effect on e-satisfaction

### 3.2.4. E-Satisfaction dan E-Loyalty

In electronic business, e-satisfaction is defined as a thorough assessment between consumer and e-retailer (Smith, 1998). E-satisfaction is considered as a degree of satisfaction by buyers' evaluation after comparing shopping experience with expectation after purchase (Constantin, 2013). E-satisfaction is a fundamental factor that affects loyalty in both online and offline business (Li et al., 2015).

E-loyalty is a consumer's positive attitude towards online services, potentially driving consumers to repurchase in the same platform (Lin & Wang, 2006; Srinivasan et al., 2002). Users who revisit a website to use an online shopping application repeatedly are likely to buy products in the same service (Chiu et al., 2009; Cyr et al., 2010). Other factors such as e-satisfaction, e-trust, perceived value, purchase volume, inertia, and convenience determine e-loyalty (Anderson & Srinivasan, 2003). Several studies also examined factors that determine e-loyalty, where studies found that e-satisfaction is the most significant factor among others (Balabanis et al., 2006; Li et al., 2015; Valvi & West, 2013).

Consumer's loyalty toward a brand or platform has the possibility to drive consumers to repurchase a product or recommend products and services to his or her acquaintances. Association between satisfaction and loyalty has been studied and the correlation between these two concepts can be applied widely to products and services (Brakus et al., 2009; Nysveen et al., 2013). Anderson and Srinivasan (2003) studied the effect between satisfactions towards loyalty in e-commerce context, and concluded the significant effect on the research.

**H4:** E-satisfaction has positive effect on e-loyalty

## 3.3. Measures

There are three main objectives of survey as research instrument: First, to study the correlation of research variables with e-satisfaction as intervening variable; second, to examine the effect of e-satisfaction to e-loyalty based on variables mentioned in the prior hypotheses; lastly, to collect

information about respondents with various characteristics to understand the difference of class and behavior.

This study survey consists of two parts. The first section analyzes respondents and individual demographic variables, while the second section examines the studied research variables. The variables included in this study are application attractiveness, application functionality, customer service, e-satisfaction, and e-loyalty. The variables in this research are determined based on prior studies as a basis on developing a questionnaire.

This study measures refer from previous literature and published research. The first variables consist of four questions, which the construct of application attractiveness was adapted from King et al. (2016) and Wolfnberger and Gilly (2003). The second variable consists of five questions, which the construct of application functionality was adapted from Kwon and Kim (2012), Okazaki et al. (2009), Schenkman and Jönsson (2000), and Gangwar and Date (2016). The third variable consists of five questions based on study by Blut (2016). E-satisfaction is measured by four questions adapted from study by Anderson and Srinivasan (2003). Lastly, e-loyalty is measured with four questions regarding repeat purchase, recommendation, and consistency, which were adapted from Cyr (2008), Keller (1993), and Srinivasan et al. (2002).

The survey stated research purpose stated the study object to give clear instructions to respondents on filling in the questionnaire. After the data collection phase, no variables and questions are excluded as all the data were valid during analysis. Six-point Likert scale was used to conduct this study (1 = strongly agree, 2 = agree, 3 = slightly agree, 4 = slightly disagree, 5 = disagree, 6 = strongly disagree). Data analysis utilizes SmartPLS 3.0 by validating Partial Least Square (PLS) algorithm.

## 4. Results and Discussions

### 4.1. Respondents Profile

The respondents of this study are 384 people. As displayed in Table 1, the samples of the study population are within productive age with the majority age of 17-24 years old (26%) and 25-30 years old (56.5%). Both group age represent online shopping mobile application users with purchasing power and are considered as the main target market of online shopping platforms. Moreover, Table 1 showed that the large part of the respondents are female (75.3%), while male users establish a smaller group in this study (24.7%). This shows that females have a higher tendency compared to male in Indonesia to use online shopping platforms to fulfill their shopping needs.

**Table 1:** Sample's Age and Sex

Variable	Category	n	%
Age	< 17 years old	2	0.5%
	17-24 years old	100	26%
	25-30 years old	217	56.5%
	31-35 years old	42	10.9%
	> 35 years old	23	6%
Gender	Male	95	24.7%
	Female	289	75.3%

Table 2 shows 93% respondents live in Java Island, where logistics and distribution of online shopping services is more accessible for users in the area. Data also shows a great part of users at least make a purchase using online shopping platforms at least once per month. By concluding the data of Table 1 and Table 2, this study found that people in the group aged 17-30 years old have enough purchasing power, becoming regular users in online shopping service.

**Table 2:** Sample's Residence and Online Shopping Frequency

Variable	Category	n	%
Residence	Jakarta	141	36.7%
	Banten	56	14.6%
	West Java	93	24.2%
	Central Java	19	4.5%
	East Java	35	9.1%
	Jogjakarta	15	3.9%
	Outside Java	25	7%
Online Shopping Frequency	More than once a week	86	22.4%
	Once in a week	68	17.7%
	Once in two weeks	109	28.4%
	Once in a month	88	22.9%
	Once in two months	16	4.4%
	Once in more than two months	17	4.2%

Based on composite reliability on Table 3, this study can conclude that variables of this study are valid, as the composite reliability value shows above 0.6. Similar to composite reliability value, variables' reliability of this study is also supported by Cronbach's Alpha that shows above 0.70 value. As seen in Table 3, Cronbach's Alpha value of each variable is above 0.70, additionally supporting the variable's validity from the perspective of composite reliability value.

### 4.2. Measurement Reliability

To verify the convergent validity and discriminant validity of this research measure, measurement analysis is conducted with the following model.

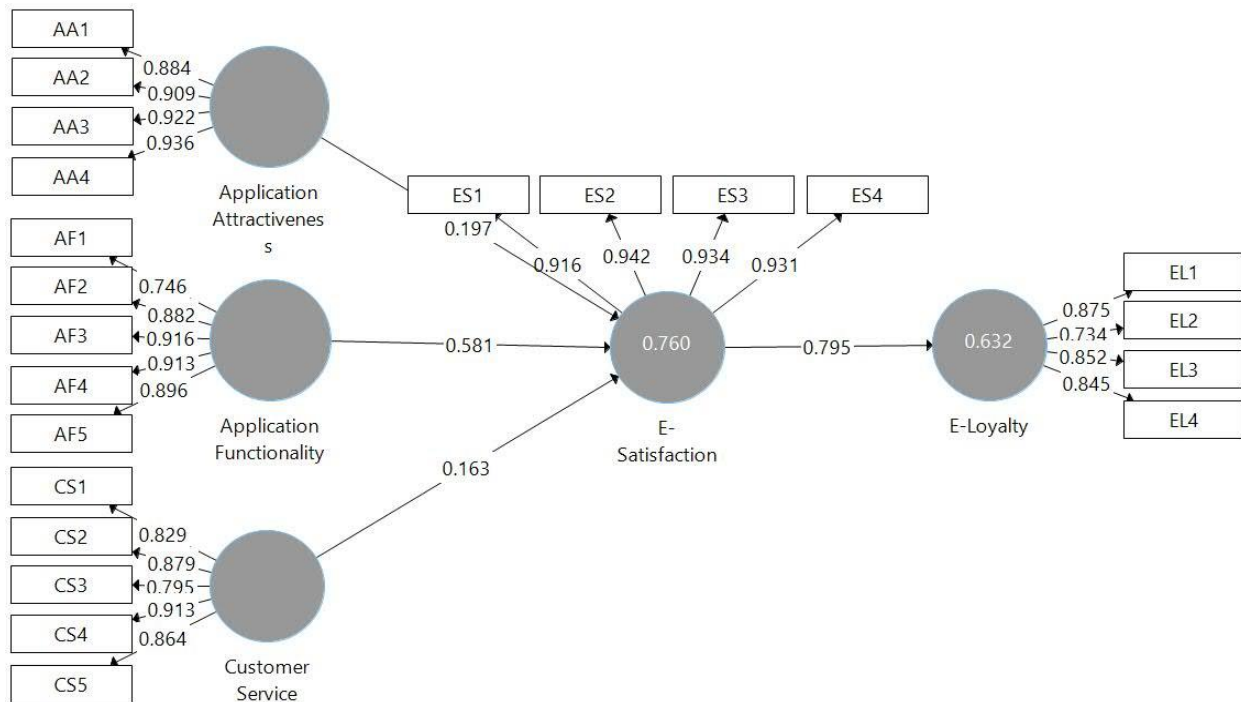


Figure 2: SmartPLS Hypothesized Model

Data on Figure 2 displayed loading factors of each construct above 0.6 value. This certified every indicator of each variable is valid and passed the criteria. In addition to outer loading values, validity is also supported by Average Variance Extracted (AVE) above 0.5 value as the prerequisite of data validity. Table 3 showed each variable met the criteria for validity testing.

Table 3: Reliability and Confirmatory Factor Analysis

Construct	Average Variance Extracted (AVE)	Cronbach's Alpha	Composite Reliability
Application Attractiveness	0.834	0.933	0.952
Application Functionality	0.762	0.921	0.941
Customer Service	0.734	0.909	0.932
E-Satisfaction	0.867	0.949	0.963
E-Loyalty	0.686	0.847	0.897

### 4.3. Structural Model Evaluation

To examine hypothesis testing, a variable requires to meet the value of T-statistic above 1.96 and simultaneously P value below 0.05. Based on hypothesis testing, this study indicates application attractiveness, application functionality, and customer service has a positive effect on e-satisfaction. As an intervening variable, e-satisfaction has a highly significant effect on e-loyalty. All five variables showed T statistic value above 1.96, concluding all

hypothesis are supported from previous studies.

Table 4: Hypothesis of the Structural Model

Constructs	Beta	T statistic	P Values	Hypothesis
Application Attractiveness → E-Satisfaction	0.197	2.800	0.005	Significant
Application Functionality → E-Satisfaction	0.581	8.643	0.000	Significant
Customer Service → E-Satisfaction	0.163	4.313	0.000	Significant
E-Satisfaction → E-Loyalty	0.795	31.696	0.000	Significant

## 5. Conclusions

While this research aims to give insight regarding determinants that affect e-satisfaction and e-loyalty on online shopping applications, there are limitations in this study. With the majority of respondents residing in Java Island, differences in behavior, culture, access, and other factors compared to respondents outside Java Island will give broader insight of online shopping service satisfaction and loyalty. In addition, further research should be conducted on other field of study as the online shopping platform has different aspects that affects user satisfaction and loyalty. Study with online shopping platforms as the object research also should consider demographic population and behavior or cultural factors that may affect

satisfaction and loyalty in online shopping activity.

### 5.1. Theoretical Implications

This study aims to examine the effect of application attractiveness, application functionality, and customer service towards e-satisfaction. Moreover, previous studies found the significant effect of e-satisfaction and e-loyalty. Based on the studies discussed previously, e-loyalty is defined as a concept where online customers or users have positive bias and tendency to repurchase a product or reuse a service in electronic business. In online shopping application context, loyal users are the users who use a certain platform to shop repeatedly.

The research consists of variables with different dimensions that affect user's satisfaction in online shopping service applications. Visual, information, and customer service dimensions are validated as dimensions that have a positive effect on e-satisfaction. Users who are satisfied with a certain platform tend to be loyal and build a positive bias toward a service. Hypothesis testing was conducted with SEM-PLS with four independent variables, one of them an intervening variable, and a dependent variable.

The following conclusions are drawn from this study: First, application attractiveness, application functionality, and customer service has a positive effect towards online shopping platform users in Indonesia. Visual design, comprehensive information, simple transaction method, and responsive customer service play an important role whether users are satisfied or not in using an online service, especially in online shopping service. Second, e-satisfaction has a significant effect on e-loyalty. As previous studies suggested, all five hypothesis are supported and e-satisfaction has the most effect on online service users' loyalty. Lastly, while the hypothesis of application attractiveness has the effect of e-satisfaction supported, on the contrary to previous study, this research does not show a significant effect of the variable.

### 5.2. Practical Implications

Activity in online shopping platforms involves various parties from buyers to business owners, such as sellers and the e-commerce applications owned by companies. Online shopping service providers may learn buyer's behavior to improve the platform's element from visual, functionality, and customer service of the platform. Companies may refer to data displayed in this study regarding buyer's preference that affects user satisfaction and loyalty, which are strongly related in business perspective. The findings in this study may also enable companies to plan further marketing and communication strategies in order to acquire or retain existing users in the online shopping platforms. In summary,

this study contributes suggestions for companies and online business owners to create differentiation for each platform among their competitors.

### 5.3. Limitation and Future Research

While this research aims to give insight regarding determinants that affect e-satisfaction and e-loyalty on online shopping applications, there are limitations in this study. With the majority of respondents residing in Java Island, differences in behavior, culture, access, and other factors compared to respondents outside Java Island will give broader insight of online shopping service satisfaction and loyalty. In addition, further research should be conducted on other field of study as the online shopping platform has different aspects that affects user satisfaction and loyalty. Study with online shopping platforms as the object research also should consider demographic population and behavior or cultural factors that may affect satisfaction and loyalty in online shopping activity.

## References

- Aaker, J. (1991). The negative attraction effect? A study of the attraction effect under judgment and choice. *ACR North American Advances*.
- Adam, M., Wessel, M., & Benlian, A. (2021). AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, 31(2), 427-445.
- Alalwan, A. A. (2020). Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse. *International Journal of Information Management*, 50, 28-44.
- Alshurideh, M., Nicholson, M., & Xiao, S. (2012). The effect of previous experience on mobile subscribers' repeat purchase behaviour. *European Journal of Social Sciences*, 30(3), 366-376.
- Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology & Marketing*, 20(2), 123-138.
- Assael, H. (1984). *Consumer behavior and marketing action*. Kent Pub. Co..
- Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Patil, P., & Dwivedi, Y. K. (2019). An integrated model for m-banking adoption in Saudi Arabia. *International Journal of Bank Marketing*, 20(2), 452-478.
- Balabanis, G., Reynolds, N., & Simintiras, A. (2006). Bases of e-store loyalty: Perceived switching barriers and satisfaction. *Journal of Business Research*, 59(2), 214-224.
- Bertot, J. C., Snead, J. T., Jaeger, P. T., & McClure, C. R. (2006). Functionality, usability, and accessibility: Iterative user-centered evaluation strategies for digital libraries. *Performance Measurement and Metrics*, 7(1), 17-28.
- Bleier, A., Harmeling, C. M., & Palmatier, R. W. (2019). Creating effective online customer experiences. *Journal of Marketing*,



- 83(2), 98-119.
- Brakus, J. J., Schmitt, B. H., & Zarantonello, L. (2009). Brand experience: what is it? How is it measured? Does it affect loyalty?. *Journal of Marketing*, 73(3), 52-68.
- Blut, M. (2016). E-service quality: development of a hierarchical model. *Journal of Retailing*, 92(4), 500-517.
- Camilleri, M. A. (2021). E-commerce websites, consumer order fulfillment and after-sales service satisfaction: The customer is always right, even after the shopping cart check-out. *Journal of Strategy and Management*, 15(3), 377-296.
- Chang, H. H., & Wang, H. W. (2011). The moderating effect of customer perceived value on online shopping behaviour. *Online Information Review*, 35(3), 333-359.
- Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty. *Journal of Marketing*, 65(2), 81-93.
- Chen, C. F., & Tsai, M. H. (2008). Perceived value, satisfaction, and loyalty of TV travel product shopping: Involvement as a moderator. *Tourism Management*, 29(6), 1166-1171.
- Chiu, C. M., Lin, H. Y., Sun, S. Y., & Hsu, M. H. (2009). Understanding customers' loyalty intentions towards online shopping: an integration of technology acceptance model and fairness theory. *Behaviour & Information Technology*, 28(4), 347-360.
- Collier, J. E., & Bienstock, C. C. (2006). Measuring service quality in e-retailing. *Journal of Service Research*, 8(3), 260-275.
- Constantin, A. M. (2012). The antecedents of e-satisfaction and e-loyalty. *Timisoara Journal of Economics*, 5(18), 236-252.
- Cox, J., & Dale, B. G. (2002). Key quality factors in Web site design and use: an examination. *International Journal of Quality & Reliability Management*, 19(7), 862-888.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.
- Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). The role of social presence in establishing loyalty in e-service environments. *Interacting With Computers*, 19(1), 43-56.
- Cyr, D., Head, M., & Larios, H. (2010). Colour appeal in website design within and across cultures: A multi-method evaluation. *International Journal of Human-Computer Studies*, 68(1-2), 1-21.
- Kollat, D. T., Engel, J. F., & Blackwell, R. D. (1973). *Consumer Behavior*. Taiwan: Holt, Rinehart and Winston.
- Evanschitzky, H., Iyer, G. R., Hesse, J., & Ahlert, D. (2004). E-satisfaction: a re-examination. *Journal of Retailing*, 80(3), 239-247.
- Flanagin, A. J., Metzger, M. J., Pure, R., Markov, A., & Hartsell, E. (2014). Mitigating risk in ecommerce transactions: perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention. *Electronic Commerce Research*, 14(1), 1-23.
- Fu Tsang, N. K., Lai, M. T., & Law, R. (2010). Measuring e-service quality for online travel agencies. *Journal of Travel & Tourism Marketing*, 27(3), 306-323.
- Gangwar, H., & Date, H. (2016). Critical factors of cloud computing adoption in organizations: An empirical study. *Global Business Review*, 17(4), 886-904.
- Gounaris, S., & Dimitriadis, S. (2003). Assessing service quality on the Web: evidence from business-to-consumer portals. *Journal of Services Marketing*, 17(5), 529-548.
- Greenwell, T. C., Fink, J. S., & Pastore, D. L. (2002). Assessing the influence of the physical sports facility on customer satisfaction within the context of the service experience. *Sport Management Review*, 5(2), 129-148.
- Guo, X., Ling, K. C., & Liu, M. (2012). Evaluating factors influencing consumer satisfaction towards online shopping in China. *Asian Social Science*, 8(13), 40-50.
- Ha, H. Y. (2004). Factors influencing consumer perceptions of brand trust online. *Journal of Product & Brand Management*, 13(5), 329-342.
- Hassenzahl, M. (2004). The interplay of beauty, goodness, and usability in interactive products. *Human-Computer Interaction*, 19(4), 319-349.
- Homburg, C., & Giering, A. (2001). Personal characteristics as moderators of the relationship between customer satisfaction and loyalty—an empirical analysis. *Psychology & Marketing*, 18(1), 43-66.
- Hsu, S. H. (2008). Developing an index for online customer satisfaction: Adaptation of American Customer Satisfaction Index. *Expert Systems with Applications*, 34(4), 3033-3042.
- Ismagilova, E., Hughes, L., Dwivedi, Y. K., & Raman, K. R. (2019). Smart cities: Advances in research—An information systems perspective. *International Journal of Information Management*, 47, 88-100.
- Jacoby, J. (1971). Brand loyalty: A conceptual definition. In *Proceedings of the Annual Convention of the American Psychological Association*. American Psychological Association.
- Jiang, Z., Wang, W., Tan, B. C., & Yu, J. (2016). The determinants and impacts of aesthetics in users' first interaction with websites. *Journal of Management Information Systems*, 33(1), 229-259.
- Jongmans, E., Jeannot, F., Liang, L., & Dampérat, M. (2022). Impact of website visual design on user experience and website evaluation: the sequential mediating roles of usability and pleasure. *Journal of Marketing Management*, 1-36.
- Kassim, N., & Abdullah, N. A. (2010). The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross cultural analysis. *Asia Pacific Journal of Marketing and Logistics*, 22(3), 351-371.
- Kaya, B., Behraves, E., Abubakar, A. M., Kaya, O. S., & Orús, C. (2019). The moderating role of website familiarity in the relationships between e-service quality, e-satisfaction and e-loyalty. *Journal of Internet Commerce*, 18(4), 369-394.
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1-22.
- Kim, M., & Lennon, S. (2008). The effects of visual and verbal information on attitudes and purchase intentions in internet shopping. *Psychology & Marketing*, 25(2), 146-178.
- Kim, S., & Stoel, L. (2004). Apparel retailers: website quality dimensions and satisfaction. *Journal of Retailing and Consumer Services*, 11(2), 109-117.
- King, R. A., Racherla, P., & Bush, V. D. (2014). What we know and don't know about online word-of-mouth: A review and synthesis of the literature. *Journal of Interactive Marketing*, 28(3), 167-183.
- King, R. C., Schilhavy, R. A., Chowa, C., & Chin, W. W. (2016).

- Do customers identify with our website? The effects of website identification on repeat purchase intention. *International Journal of Electronic Commerce*, 20(3), 319-354.
- Khan, M. A., Zubair, S. S., & Malik, M. (2019). An assessment of e-service quality, e-satisfaction and e-loyalty: Case of online shopping in Pakistan. *South Asian Journal of Business Studies*, 8(3), 283-302.
- Kwon, K., & Kim, C. (2012). How to design personalization in a context of customer retention: Who personalizes what and to what extent?. *Electronic Commerce Research and Applications*, 11(2), 101-116.
- Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management*, 33(2), 161-176.
- Li, L., Peng, M., Jiang, N., & Law, R. (2017). An empirical study on the influence of economy hotel website quality on online booking intentions. *International Journal of Hospitality Management*, 63, 1-10.
- Li, Y. M., & Yeh, Y. S. (2010). Increasing trust in mobile commerce through design aesthetics. *Computers in Human Behavior*, 26(4), 673-684.
- Liang, T. P., Lai, H. J., & Ku, Y. C. (2006). Personalized content recommendation and user satisfaction: Theoretical synthesis and empirical findings. *Journal of Management Information Systems*, 23(3), 45-70.
- Li, H., Aham-Anyanwu, N., Tevriczi, C., & Luo, X. (2015). The interplay between value and service quality experience: e-loyalty development process through the eTailQ scale and value perception. *Electronic Commerce Research*, 15(4), 585-615.
- Lin, H. H., & Wang, Y. S. (2006). An examination of the determinants of customer loyalty in mobile commerce contexts. *Information & Management*, 43(3), 271-282.
- Liu, X., He, M., Gao, F., & Xie, P. (2008). An empirical study of online shopping customer satisfaction in China: a holistic perspective. *International Journal of Retail & Distribution Management*, 36(11), 919-940.
- Lu, C. C., Wu, L., & Hsiao, W. H. (2019). Developing customer product loyalty through mobile advertising: Affective and cognitive perspectives. *International Journal of Information Management*, 47, 101-111.
- Lovelock, C., Wirtz, J. (2015). *Services Marketing: People, Technology, Strategy*. Singapore: Pearson Education South Asia Pte Limited.
- Malaquias, R. F., & Hwang, Y. (2019). Mobile banking use: A comparative study with Brazilian and US participants. *International Journal of Information Management*, 44, 132-140.
- Manaf, P. A., Rachmawati, I., Witanto, M., & Nugroho, A. (2018). E-satisfaction as a reflection of e-marketing and e-sequel in influencing e-loyalty on e-commerce. *International Journal of Engineering & Technology*, 7(4.44), 94-98.
- McLean, G., & Wilson, A. (2016). Evolving the online customer experience... is there a role for online customer support?. *Computers in Human Behavior*, 60, 602-610.
- Morgan, N. A., & Rego, L. L. (2006). The value of different customer satisfaction and loyalty metrics in predicting business performance. *Marketing Science*, 25(5), 426-439.
- Neuman, W. L. (2013). *Social Research Methods: Qualitative and Quantitative Approaches*. United Kingdom: Pearson.
- Nordheim, C. B., Følstad, A., & Bjørkli, C. A. (2019). An initial model of trust in chatbots for customer service—findings from a questionnaire study. *Interacting with Computers*, 31(3), 317-335.
- Nguyen, D. H., de Leeuw, S., & Dullaert, W. E. (2018). Consumer behaviour and order fulfilment in online retailing: A systematic review. *International Journal of Management Reviews*, 20(2), 255-276.
- Nysveen, H., Pedersen, P. E., & Skard, S. (2013). Brand experiences in service organizations: Exploring the individual effects of brand experience dimensions. *Journal of Brand Management*, 20(5), 404-423.
- Oliver, R. L. (2014). *Satisfaction: A behavioral perspective on the consumer*. Routledge.
- Parasuraman, A. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, 2(4), 307-320.
- Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, 31(1), 16-29.
- Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. *International Journal of Electronic Commerce*, 11(4), 125-148.
- Okazaki, S., Li, H., & Hirose, M. (2009). Consumer privacy concerns and preference for degree of regulatory control. *Journal of Advertising*, 38(4), 63-77.
- Quan, N., Chi, N. T. K. C., Nhung, D., Ngan, N., & Phong, L. (2020). The influence of website brand equity, e-brand experience on e-loyalty: The mediating role of e-satisfaction. *Management Science Letters*, 10(1), 63-76.
- Rajamma, R. K., Paswan, A. K., & Ganesh, G. (2007). Services purchased at brick and mortar versus online stores, and shopping motivation. *Journal of Services Marketing*, 21(3), 200-212.
- Ranganathan, C., & Ganapathy, S. (2002). Key dimensions of business-to-consumer web sites. *Information & Management*, 39(6), 457-465.
- Reibstein, D. J. (2002). What attracts customers to online stores, and what keeps them coming back?. *Journal of The Academy of Marketing Science*, 30(4), 465-473.
- Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, 5(10), e02690.
- Rodríguez, P. G., Villarreal, R., Valiño, P. C., & Blozis, S. (2020). A PLS-SEM approach to understanding E-SQ, e-satisfaction and e-loyalty for fashion e-retailers in Spain. *Journal of Retailing and Consumer Services*, 57, 102201.
- Seffah, A., Mohamed, T., Habieb-Mammar, H., & Abran, A. (2008). Reconciling usability and interactive system architecture using patterns. *Journal of Systems and Software*, 81(11), 1845-1852.
- Schenkman, B. N., & Jönsson, F. U. (2000). Aesthetics and preferences of web pages. *Behaviour & Information Technology*, 19(5), 367-377.
- Shankar, V., Smith, A. K., & Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments. *International Journal of Research in Marketing*, 20(2), 153-

- 175.
- Srinivasan, S. S., Anderson, R., & Ponnnavolu, K. (2002). Customer loyalty in e-commerce: an exploration of its antecedents and consequences. *Journal of Retailing*, 78(1), 41-50.
- Tandon, U., Kiran, R., & Sah, A. N. (2016). Customer satisfaction using website functionality, perceived usability and perceived usefulness towards online shopping in India. *Information Development*, 32(5), 1657-1673.
- Turel, O., & Connelly, C. E. (2013). Too busy to help: Antecedents and outcomes of interactional justice in web-based service encounters. *International Journal of Information Management*, 33(4), 674-683.
- Tong, S., Luo, X., & Xu, B. (2020). Personalized mobile marketing strategies. *Journal of the Academy of Marketing Science*, 48(1), 64-78.
- Valvi, A. C., & West, D. C. (2013). E-loyalty is not all about trust, price also matters: extending expectation-confirmation theory in bookselling websites. *Journal of Electronic Commerce Research*, 14(1), 99.
- Walker, J. L. (1995). Service encounter satisfaction: conceptualized. *Journal of Services Marketing*, 9(1), 5-14
- Wolfenbarger, M., & Gilly, M. C. (2003). eTailQ: dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, 79(3), 183-198.
- Xu, X., & Schrier, T. (2019). Hierarchical effects of website aesthetics on customers' intention to book on hospitality sharing economy platforms. *Electronic Commerce Research and Applications*, 35, 100856.
- Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology & Marketing*, 21(10), 799-822.
- Yusuf, M., Putra, Putra, A. H. P. K., & Nurhilalia. (2019). The Impact of Product Quality, Price, and Distribution on Satisfaction and Loyalty. *Journal of Distribution Science*, 17(10), 17-26.
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(2), 31-46.
- Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: a critical review of extant knowledge. *Journal of The Academy of Marketing Science*, 30(4), 362-375.