E-Servicescape analysis and its effect on perceived value and loyalty on e-commerce online shopping sites in Yogyakarta

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ABSTRACT

The purpose of this study is to explain and analyze the effect of the e-servicescape dimension on perceived value and loyalty to e-commerce sites in Indonesia. The sampling technique used a non-probability sampling technique with a sample of 195 respondents who had shopped at e-commerce more than three times. Data collection is done by spreading the distribution through WhatsApp, Instagram, and Facebook. The research variables consist of aesthetic appeal, layout & functionality, and financial security as independent variables, perceived value as a mediator, and attitude and behavior loyalty variables as dependent variables. The study used AMOS 24 to analyze the data. The results of the study show that the three independent variables are only layout & functionality that have a positive and significant effect on consumers’ perceived value perceptions, while the variables of aesthetic appeal and financial security harm perceived value. Furthermore, the perceived value variable has a positive and significant effect on attitude and behavior loyalty as well as attitude loyalty has a significant positive effect on behavioral loyalty. The implication of this research is to add literature and insight for e-commerce players in Indonesia to increase the aesthetic appeal of online stores and financial security so that consumers are loyal in attitude and behavior so that practices that can harm consumers and negative impacts on e-commerce players do not occur. Research needs to do further research on the same object but with different results or different objects such as electronic products or e-commerce bills.

Introduction

The network serves as a channel both for disseminating information and for covering markets that are still unreached. In general, online shopping is a process that involves users who access the internet to search, select, buy and review goods and services to meet their needs. As many as 45.30 percent of e-commerce businesses in Indonesia began to use the internet in the range of 2017 to 2018, businesses that started using the internet in 2010-2016 were 28.06 percent, while in 2019 as many as 25.11 percent and starting to use the internet before 2010 only 1.53 percent (Badan Pusat Statistik, 2019). Then the results of the 2020 e-commerce survey were 25.25 percent while in 2021 it was 25.92 percent (Badan Pusat Statistik, 2021). The fact that many business activities continue to increase using computers and the internet reveals the core problem of how businesses on the internet can make themselves the most trusted websites and internet shopping (Lin & Sun, 2009). Thus, it is important to understand how the design of e-commerce and e-servicescape systems affects the perception of value and customer loyalty (Mummalaneni, 2005). Therefore, to improve understanding of the e-servicescape, follow the stimulus-organism-response (SOR) framework: environmental stimuli, organisms in consumers, and behavioral responses.

Teng et al., (2018) define e-servicescape as online environmental factors that exist during service delivery, classifying it into the following three dimensions: Aesthetic appeal, layout & functionality, and financial security.
Aesthetic appeal is a website determined based on perceived visual appeal, design originality, and entertainment value (Teng et al., 2018). In addition to the attractiveness of the aesthetic dimension, layout & functionality variables are interrelated variables. Layout refers to the grouping and placement of products, graphic arrangement, and organization of website page structure. Meanwhile, functionality is the convenience felt by website users through the layout (Turley & Milliman, 2000). Security issues in online shopping are also a major concern for consumers in shopping. Park & Kim, (2006) define security or security as the ability of online stores to control and maintain security for data transactions. E-servicescape itself can influence the perception of value in online shopping. Perceived value is a consumer's overall assessment of the usefulness of a product based on perceptions of what is received and what is given (Tankovic & Benazic., 2018). In addition, the perception of value affects the loyalty dimension. Loyalty is a customer's commitment to persist deeply to re-subscribe or make repeated purchases of products consistently in the future, even though the influence of the situation and marketing efforts have the potential to cause behavioral changes (Umar, 2014). Meanwhile, according to Yang & Peterson, (2004) the dimensions of loyalty are divided into two, namely from an attitude point of view. According to Albari & Dewi, (2011) loyalty is defined as a positive attitude to repurchase a certain brand, which is a situation when repurchase behavior is accompanied by psychological trust. While Baloglu, (2002) element of loyalty attitude focuses on the level of commitment and intention of consumer behavior towards a product. In contrast, behavioral loyalty occurs when behavioral intentions are translated into actions. True loyalty consists of buying behavior embedded in a positive attitude towards a product or brand (Lee & Goudeau, 2014). According to Tankovic & Benazic, (2018) e-commerce is the distribution, purchase, sale, and marketing of goods and services through electronic systems such as the internet, TV, www, or other internet networks. In Indonesia, there are already quite a lot of e-commerce sites such as Tokopedia, Shopee, Bukalapak, Blibli, Lazada, and many other online sales sites that make it easier for consumers to shop.

This study aims at explaining and analyzing the effect of the e-servicescape dimension on perceived value and loyalty to e-commerce sites in Indonesia. The sampling technique used a non-probability sampling technique with a sample of 195 respondents who had shopped at e-commerce more than three times.

**Literature Review**

**Theoretical and Conceptual Background**

**Online shopping**

According to Harahap & Dita (2018), online shopping or E-commerce is a transaction process carried out through media or intermediaries in the form of online buying and selling sites or social networks that provide goods or services that are traded. However, there are several obstacles to purchasing products online, namely the impossibility of trying a product, seeing its quality before buying it, and consulting with the seller (Kawaf & Tagg, 2012). Unlike when shopping at a store directly, you can see the quality and try it, there is a technology that offers a way to overcome this online shopping problem. Tankovic & Benazic (2018) states that three visual features of traditional offline store merchandise must be implemented in an online clothing website that assists online path searching such as search engines, site maps, and categorization, then from the atmospheric side of the environment, there are music, video, display, color, the background and color around the product, while in terms of the way the product is presented, it must provide a display method, color and presentation method, and a detailed view.

**SOR model**

The SOR model was discovered by Mehrabian and Russell in 1974, in which environmental stimuli (S) produce emotional responses (O) thereby encouraging behavioral responses (R), its importance in retail settings has been articulated as buying decisions, impulse buying, service fairness, and others. (Zhu et al., 2020). In the SOR paradigm, the avoidance outcome variable or behavioral approach is operationalized because there is a sponsor's behavior or behavioral intention (Ha & Lennon, 2010). The broad extension of the SOR model is presented by exploring the satisfaction variables in the area of the expanded response (R) of cognitive and emotional reactions that occur in the organism (O) such as the intention to WOM. Furthermore (Ha & Im, 2012) analyzes it as cognition because the perception in the online shopping environment is more cognitive than in the offline environment, then in the SOR paradigm, the avoidance outcome variable or behavioral approach is operationalized because there is a sponsor's behavior or behavioral intention (Ha & Lennon, 2010). Behavior and attitude loyalty as a response (R), expand the application of the SOR paradigm to customer loyalty in the online context. The perceived value of e-shopping becomes a mediator between perceptions of e-servicescape (S) that affect customer loyalty as a response (R). Therefore, the SOR model is the most appropriate theoretical framework for this study because it aims to explore the relationship between the three dimensions.

**E-Servicescape**

According to Tankovic & Benazic, (2018) servicescape is the marketing literature that labels an organization's service arrangements as a set of tangible physical cues that represent the organization to its clients. Zeithaml et al., (2002), define servicescape as environmental cues that affect customers indirectly. According to Tankovic & Benazic, (2018) servicescape consists of ambient conditions (temperature, air quality, noise, music, smell), space/function (layout, equipment, furniture), and signs, symbols, and artifacts (signage, personal artifacts, decoration style). Kauppinen et al., (2014) cite different divisions of exterior servicescape elements, general interior, store layout, interior display, human variables then physical, social, socio-symbolic, and natural.
Empirical Review and Hypothesis Development

Aesthetic Appeal

Online aesthetic appeal refers to the online ambient conditions and the degree to which consumers interpret the servicescape as attractive or alluring (Harris & Goode, 2010). In this way, the dimensions of online aesthetic appeal, in part, reflect those of the servicescape. Meanwhile, according to Lee & Jeong, (2012) aesthetic appeal serves to give a positive impression to website visitors when browsing the website, such as looking for information or transacting. This indicates that online business actors must pay attention to the aesthetic value of the website because it relates to the impression created in the minds of users. The aesthetic appeal includes image quality, color, animation effects, music, and virtual features (Jeon & Jeong, 2009). Tankovic & Benazic, (2018) stated that the attributes of aesthetic appeal are originality of design, visual appeal, and entertainment value, then aesthetic appeal does not have a negative relationship with consumers' perceived value but Van, (2003) found that the online aesthetic appeal of a website is positively related to the user's perceived usefulness and ease, this means that Aesthetic appeal can affect consumers' perceived value of e-shopping. Then Jian et al., (2010) incorporated the phenomenon into web design and established the principle of what beauty can be used for, arguing that online aesthetic appeal helps create positive perceptions of usability and credibility. This principle could theoretically serve as the reason for the positive effect of aesthetic appeal on consumers' perceived value of e-shopping. In addition, Yeo et al., (2021) stated in their research that aesthetic appeal is positively related to perceived value. From the explanation above, it can be proposed with the following hypothesis:

H1: Online aesthetic appeal positively affects consumers’ perceived value of e-shopping

Layout & Functionality

As an interrelated variable, layout refers to product grouping and placement, graphic arrangement, and organization of website page structure. Meanwhile, functionality is the convenience felt by website users through the layout (Turley & Milliman, 2000). Layout & functionality in the concept of E-Servicescape relates to website design which refers to the visual structure of the website, arrangement, space effectiveness, and ease of navigation (Jeon & Jeong, 2009). The layout & functionality dimensions of the website have usability, the relevance of information, and interactivity sub-dimensions. Tankovic & Benazic, (2018) said that in their research, layout and functionality have a positive relationship to perceived value. The research of Yeo et al., (2021) proved that layout and functionality have a positive effect on the perceived value of consumers. Then it can be proposed with the following hypothesis:

H2: Layout and online functionality positively affect consumers' perceived value.

Financial Security

Zeithaml & Malhotra, (2002) suggest that Financial Security is an important variable in the e-servicescape, referring to the clarity of payment procedures and the ease of payment facilities. In addition, there is a guarantee of a security system. So financial security is an important variable in an online transaction. Financial security serves to avoid privacy violations and convince consumers when transacting. Two sub-dimensions under the umbrella of financial security are perceived security and ease of payment. In this way, starting with the original Tankovic & Benazic, (2018) the two dimensions can be broadly equated, while the third dimension (signs, symbols, and artifacts) is replaced by financial security, to emphasize this more important element in the online environment. Tankovic & Benazic, (2018) proved in their research that financial security has a positive impact on consumers' perceived value in online shopping. Yeo et al., (2021) said in their research that financial security has a positive effect on perceived value. Then it can be proposed with the following hypothesis:

H3: Online financial security positively affects consumers' perceived value.

Perceived value

The consumer's perception of the perceived value of shopping is a core element in relational exchanges, namely the perception of the expected gains and losses in the repurchase process (Wu et al., 2014). According to Tankovic & Benazic, (2018) the perception of perceived value is defined as the consumer's overall assessment of the usefulness of the product based on the perception of what is received and what is given. The customer's perceived value has received considerable attention in the field of marketing strategy as it achieves a sustainable competitive advantage (Lindgreen & Wynstra, 2005). Then having an important role in predicting buying behavior and influencing the management of value exchange relationships of the salient give and benefit sacrifice components is an important argument not only in the offline environment but also in the online environment (Payne et al., 2001). Carlson et al., (2015) in their research investigated the value of online channels perceived by customers on online channel satisfaction and online channel satisfaction on online channel loyalty. In line Tankovic & Benazic, (2018) said that perceived value perceived as a necessary condition has a positive influence on consumer attitude loyalty. This is also supported by research by Garcia et al., (2018) which discusses online shopping behavior in two different markets by explaining consumer attitudes and behavior loyalty saying that
the perceived value of consumers is directly and positively related to consumer attitude loyalty. Then it can be proposed with the following hypothesis:

H4: Perceived value positively affects consumer attitude loyalty.

Customer loyalty

Customer loyalty can be defined as a preferential buying process, attitudes, and behaviors towards one or more brands that are expressed over a certain period, where loyalty is the result of happy customers providing superior value from excellent service and quality products (Yang & Peterson, 2004). According to Yang & Peterson, (2004) loyalty is divided into two points of view attitude and behavior.

Attitude loyalty

Yang & Peterson, (2004) say attitude loyalty is a special relationship with service providers. Then attitude loyalty approaches brand loyalty mostly as an attitude and focuses on the psychological commitment of consumers (Fatih & Zengin, 2013). Attitudinal loyalty refers to consumer agreement with intensive problem-solving behavior that includes the comparison of brands and features and leads to strong brand preferences (Bennett & Thiele, 2002). The measurement for attitude loyalty uses attitude data which shows affective and psychological factors in the structure of brand loyalty and it is stated that this measurement is related to feelings of commitment and loyalty (Bowen & Chen, 2001). Someone loyal should not only take advantage of the institution but must have positive feelings and cognition towards the institution as a basis for motivation to behave (Albari & Dewi, 2011).

Behavioral loyalty can be understood as a concept that emphasizes the sequence of purchases, the proportion of purchases, and the probability of purchase (Darsono, 2014). Behavioral loyalty is more due to price changes, the convenient location of a buyer, and based on the evaluation of benefits (sloping prices), perceived value can have a positive effect on behavioral loyalty (Wahyuni & Ihsanuddin, 2019). Statistically, there is an effect of perceived value on behavioral loyalty. Then it can be proposed with the following hypothesis:

H5. Perceived value positively affects behavioral loyalty

Behavioral loyalty

Yang & Peterson, (2004) define customer loyalty as repeated patronage or the proportion of time a buyer chooses the same product or service in a particular category. Behavioral loyalty considers brand loyalty as the behavior of people who buy certain brands continuously and will be loyal to that brand (Fatih & Zengin, 2013). Behavioral loyalty can be defined as the behavior shown by consumers to a brand in the form of repeated purchases (Back & Parks, 2003). However behavioral measures are insufficient to explain how and why brand loyalty develops in consumers and they do not allow research to reveal whether repeat purchases arise from situational reasons or complicated psychological causes other than habitual actions (Odin et al., 2001). With the increase in internet transactions and purchases, new constructs of e-loyalty have often been used, this has been classified as a customer's favorable attitude towards e-retailers that results in repeat purchase behavior (Tankovic & Benazic, 2018).

Consumer loyalty is more complex and involves attitudinal and behavioral components, attitudinal loyalty is an analysis of consumer attitudes that includes consumer psychological loyalty to brands (Fatih & Zengin, 2013). Meanwhile, according to Bennett & Thiele, (2002) behavioral loyalty is an observable result of attitude loyalty. While Thiele & Mackay, (2001) the correlation between attitude and behavioral loyalty must be positive. Also, some reviews on this issue reveal that there is a relationship between attitude and a positive effect on behavioral loyalty. Previous research has proven that attitude loyalty has a positive relationship to behavioral loyalty which has been determined empirically (Lee & Goudeau, 2014).

In addition, Lee et al., (2014) measure loyalty by examining the attitude and behavior side and show that cognitive image and affective image are important predictors of attitude loyalty, and the results of their research show that attitude loyalty positively and significantly affects behavioral loyalty. by Picon et al., (2016) that perceived value has a positive and significant effect on behavioral loyalty. Previously, Wahyuni & Ihsanuddin, (2019) also gave the same conclusion that behavioral intention in the form of behavioral loyalty is influenced by perceived value. Then it can be proposed with the following hypothesis:

H6: Attitude loyalty has a positive effect on behavioral loyalty.
**Research and Methodology**

The type of research used is a quantitative approach. The research location is in Indonesia. This study uses a non-probability sampling technique, the probability of the selected population element is not known, so this technique does not require population identity. The technique used is convenience sampling by selecting the population by chance and suitable to be a member of the sample. In practice, the sampling technique will be implemented on respondents who are willing to fill out the questionnaire through the Google form. This study used a 6-point Likert scale. The data were analyzed using AMOS 24 with a total sample of 195 respondents who had shopped at e-commerce minimum 3x purchase.

In this study, there are variables of aesthetic appeal, layout & functionality, and financial security as independent variables, perceived value as a mediator variable, and attitude and behavior loyalty as dependent variables.

**Aesthetic appeal**

Based on the opinion of Jeon & Jeong, (2009), the aesthetic appeal in this study includes image quality, color, animation effects, music, and virtual features to give a positive impression to website visitors. The aesthetic appeal variable is the independent variable that affects the perceived value. The 5 indicators of the Aesthetic Appeal variable in the study (Tankovic & Benazic, 2018) are as follows:

1. I like how attractive the product looks. 2. I like the look of this website. 3. This website is easy to understand. 4. I think this site is very entertaining. 5. The enthusiasm of this website appeals to me

**Layout & functionality**

Based on the opinion of Jeon & Jeong, (2009), layout & functionality in this study includes website design which refers to the visual structure of the website, arrangement, space effectiveness, and ease of navigation. Variable layout & functionality as independent variables that affect the Perceived Value. 7 indicators can assess layout and functionality in research (Tankovic & Benazic, 2018), which are as follows:

1. Websites are not easy to navigate. 2. Navigation through this website is intuitively logical. 3. This website is difficult to use. 4. This website is user-friendly. 5. Technical details about product scanning are easily accessible. 6. This website is customized for me. 7. I don't find it a very attractive website.

**Financial security**

According to Zeithaml & Malhotra, (2002) stated that financial security in this study refers to the clarity of payment procedures and the ease of payment facilities, besides that there is a guarantee of the security system. So financial security is an important variable in an online transaction. Financial Security serves to avoid breaches of privacy and reassure consumers when transacting. Then the financial security variable is an independent variable that affects the perceived value. 3 indicators can assess financial security in research (Tankovic & Benazic, 2018), which are as follows:

1. The payment procedure seems to take a long time. 2. Paying for goods involves entering a lot of details. 3. When buying from this website, I was not convinced by the safety procedures.

**Perceived value**

Based on the opinion of Kusdyah, (2012), perceived value in this study is a process of consumer evaluation of the products and services received by consumers according to the price paid. Perceived value has an important role in predicting buying behavior and influencing relationship management (Tankovic & Benazic, 2018). Perceived value is a mediator variable that affects the loyalty of
attitudes and behavior. 5 indicators can measure the extent of perceived value in research (Tankovic & Benazic, 2018), which are as follows:

1. This website offers great economic value. 2. The product/service I bought from this website was a good buy. 3. When I purchase from this website, I save time. 4. It is very easy to shop for products/services on this website. 5. The effort I have to make to buy from this website is low.

**Attitude loyalty**

Customer loyalty can be defined as a preferential buying process, attitudes, and behaviors towards one or more brands that are expressed over a certain period, where loyalty is the result of happy customers providing superior value from excellent service and quality products (Yang & Peterson, 2004). According to Yang & Peterson, (2004) from an attitude point of view, customer loyalty is a special relationship with a service provider. Meanwhile, according to Putra, (2022) attitudinal loyalty in this study is a reflection of psychological and emotional attitudes related to loyalty. Attitudinal loyalty components such as providing recommendations to others and retention of better offers. Measurements in attitudinal loyalty refer to attitudinal components such as beliefs, feelings, and the will to purchase the product. Attitude loyalty is the dependent variable that affects behavioral loyalty variables where 6 indicators can assess attitude loyalty in research (Tankovic & Benazic, 2018), which are as follows:

1. I like to use this website. 2. For me, this website is the best retail website for doing business. 3. I believe this is my favorite retail website. 4. I will recommend this website to others. 5. I will recommend this site to my friends. 6. I would encourage people to do business with this site.

**Behavioral Loyalty**

According to Yang & Peterson, (2004) customer loyalty behavior is defined as repeated patronage or the proportion of time buyers choose the same product or service in a particular category. Meanwhile, according to Putra, (2022) behavioral loyalty in this study is a behavior that is carried out by actually revisiting the website and the ratio of the total budget being spent on that one website. A behavioral variable is a dependent variable that is influenced by perceived value. 6 indicators can assess behavioral loyalty in research (Tankovic & Benazic, 2018), which are as follows:

1. I rarely consider switching to another website. 2. As long as this service continues, I doubt whether I will switch to another website. 3. I try to use this website whenever I need to make a purchase. 4. I will use this online shop again. 5. When I need to make a purchase, this website is my first choice.

**Table 1: Summary of Literature Review**

<table>
<thead>
<tr>
<th>Author (Date)</th>
<th>Subject</th>
<th>Variables</th>
<th>Methods</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tankovic &amp; Benazic (2018)</td>
<td>Enhancing the interest in identifying the factors that influence shoppers' loyalty</td>
<td>Aesthetic appeal, Layout and functionality, financial security, Perceived value, Attitude loyalty, and Behavioral Loyalty</td>
<td>Partial least squares approach to analyze structural equations (SEM)</td>
<td>Consumers' interpretation of e-servicescape exerts a positive influence over perceived e-shopping value and loyalty, layout and functionality, and financial security, as the salient attributes of the e-servicescape dimension, set the point of perceived e-shopping value which affects attitudinal loyalty</td>
</tr>
<tr>
<td>Zhu et al., (2020)</td>
<td>The rapid growth of e-commerce has encouraged online retailers to adapt to the purchase behavior of Generation Y consumers</td>
<td>Website appearance, Security, online Promotion, Online trust, and online repurchase intention</td>
<td>SPSS 24 was used to analyze Generation Y consumers' demographic information and reliability test. Amos 24 was utilized to examine measurement models and structural equation models</td>
<td>Website security presents the strongest influence on Generation Y consumers' trust. Also, online promotion possesses the weakest association with Generation Y consumers' trust. More importantly, Generation Y consumers online repurchase intention is positively influenced by the degree of trust they have in websites</td>
</tr>
</tbody>
</table>

**Source:** Authors
Findings and Discussions

Findings that the majority of respondents are female as much as 68%, aged over 21-30 years, the average education level is 84%, most of them work as employees 48%, with expenses of Rp. 2600,000 – Rp. 3500,000 as much as 49%.

The collected data were analyzed using the Structural Equation Model (SEM) used to analyze the validity and reliability tests in this chapter were conducted to determine whether the data obtained met the valid and reliable criteria set out in the previous chapter. This study consisted of 31 questions representing 6 variables which had been answered by 195 respondents. Furthermore, the data was tested using AMOS 24. Then further tested the quality of the data including data normality test, multicollinearity outliers, Confirmatory Factor Analysis (CFA) test, variance extracted value, and composite reliability. This is done by testing the measurement model which includes validity and reliability tests on all latent variables whose results are valid and reliable can be seen in the table below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicator</th>
<th>Valid Loading Factor</th>
<th>Construct Reliability</th>
<th>Variance Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Security</td>
<td>FS3</td>
<td>0.820</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>FS2</td>
<td>0.866</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FS1</td>
<td>0.902</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Value</td>
<td>PV5</td>
<td>0.801</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>PV4</td>
<td>0.787</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV3</td>
<td>0.840</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>PV2</td>
<td>0.850</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>PV1</td>
<td>0.861</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Layout &amp; Functionality</td>
<td>LF3</td>
<td>0.834</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>LF2</td>
<td>0.898</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>LF1</td>
<td>0.840</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LF4</td>
<td>0.837</td>
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</tr>
<tr>
<td></td>
<td>LF5</td>
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<tr>
<td></td>
<td>LF6</td>
<td>0.869</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>LF7</td>
<td>0.819</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aesthetic Appeal</td>
<td>AP3</td>
<td>0.774</td>
<td>0.7</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>AP2</td>
<td>0.627</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AP1</td>
<td>0.684</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudinal Loyalty</td>
<td>AL1</td>
<td>0.949</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>AL2</td>
<td>0.951</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AL3</td>
<td>0.577</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AL5</td>
<td>0.600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Loyalty</td>
<td>BL1</td>
<td>0.819</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>BL2</td>
<td>0.738</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BL3</td>
<td>0.778</td>
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<tr>
<td></td>
<td>BL4</td>
<td>0.798</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>BL5</td>
<td>0.796</td>
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<td></td>
</tr>
</tbody>
</table>

Source: Authors

From the table above, it is known that the construct reliability of all variables has shown 0.7. As for the variance extracted in this study, each variable also has a value of 0.5. So, it can be concluded that the questionnaire used for this study is declared reliable.

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>Cut off value</th>
<th>Measurement model</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CMIN/DF</td>
<td>≤ 2</td>
<td>1.670</td>
<td>Good Fit</td>
</tr>
<tr>
<td>2</td>
<td>RMSEA</td>
<td>≤ 0.08</td>
<td>0.059</td>
<td>Good Fit</td>
</tr>
<tr>
<td>3</td>
<td>GFI</td>
<td>≥ 0.90</td>
<td>0.843</td>
<td>Marginal Fit</td>
</tr>
<tr>
<td>4</td>
<td>AGFI</td>
<td>≥ 0.90</td>
<td>0.811</td>
<td>Marginal Fit</td>
</tr>
<tr>
<td>5</td>
<td>TLI</td>
<td>≥ 0.90</td>
<td>0.923</td>
<td>Good Fit</td>
</tr>
<tr>
<td>6</td>
<td>NFI</td>
<td>≥ 0.90</td>
<td>0.846</td>
<td>Marginal Fit</td>
</tr>
</tbody>
</table>

Source: Authors

From the picture above, it can be concluded that there is 3 goodness of fit conditions in a marginal fit evaluation state, and there are 3 evaluations in a good fit condition when compared to the predetermined cut of value. The results of CMIN/DF 2 in this study were 1.670 which is a good fit, RMSEA value 0.08 the result of this study is 0.059 which means a good fit. The GFI value in this study is 0.843 which is said to be a marginal fit because the cut-off value is close to 0.90. The result of AGFI is 0.811 marginal fit because it
has not yet reached 0.90. The TLI value is 0.923 good fit because it has exceeded 0.90 and the NFI value is 0.846 which means marginal fit because the cut-off value is close to 0.90.

**Hypothesis testing**

<table>
<thead>
<tr>
<th>Estimate</th>
<th>SE</th>
<th>CR</th>
<th>P</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV</td>
<td>.014</td>
<td>0.016</td>
<td>.722</td>
<td>.470</td>
</tr>
<tr>
<td>PV</td>
<td>.711</td>
<td>.274</td>
<td>2.696</td>
<td>.007</td>
</tr>
<tr>
<td>PV</td>
<td>.268</td>
<td>.217</td>
<td>1.015</td>
<td>.310</td>
</tr>
<tr>
<td>AL</td>
<td>.828</td>
<td>.063</td>
<td>13.720</td>
<td>***</td>
</tr>
<tr>
<td>BL</td>
<td>.708</td>
<td>.069</td>
<td>9.422</td>
<td>***</td>
</tr>
<tr>
<td>BL</td>
<td>.311</td>
<td>0.055</td>
<td>4.947</td>
<td>***</td>
</tr>
</tbody>
</table>

**Source:** Authors

From the results of hypothesis testing, it can be explained that H1 can be seen that the estimated regression weight parameter value is 0.012 with a CR value of 0.722 and a probability value of 0.470 which shows insignificant results because the CR value is less than 1.90 and the probability value is greater than 0.05, then from that H1 “aesthetic appeal has a positive effect on perception” the value is rejected. Then in H2 in this study, the parameter estimate value is 0.738 then the CR value is 2.696 where this result shows that layout & functionality has a positive effect on perceived value. This means that the better the layout, the better the perception of value. The probability value is 0.007 (p <0.05), then H2 "layout & functionality has a positive effect on perceived value” is supported and stated to have a positive effect. H3 in this study shows a parameter estimate value of 0.220 then CR 1.015 and a P value of 0.310, therefore the results show that the results are not significant because the CR value is less than 1.96 and the probability value is greater than 0.05, therefore this H3 financial security has a positive effect on value perception” is rejected.

The estimated parameter value of the standardized regression weight coefficient is 0.220 and the CR value is 13,720, this shows that the relationship between perceived value and attitude loyalty has a positive effect. This means that the better the perception of value built, the more loyal the attitude will be. The test of these two variables shows a probability value of 0.000 (p <0.05), so H4 "perceived value has a positive effect on attitude loyalty” is supported and can be said to have a direct effect on perceived value and attitude loyalty. It can be seen that PV to BL shows that the parameter estimate value is Reliability of 0.647 and CR of 9.422, therefore it can be said that the relationship between perceived value and behavioral loyalty has a significant effect. So, the better the perceived value that is built, the more loyal behaviorally, where the probability value is 0.000 (p <0.05) then H5 "perceived value has a positive effect on attitude loyalty” is supported and has a direct and positive effect.

The estimated parameter value and standardized regression weight coefficient are 0.270 and the CR value is 4.947, therefore the relationship between attitude loyalty and behavioral loyalty has a significant relationship, this is evidenced by the probability of 0.000 less than 0.05, then H6 "attitude loyalty has a positive effect on behavioral loyalty.” proved to have a positive and significant effect.

**Table 5: Effect of the independent variable**

<table>
<thead>
<tr>
<th>Total Influence</th>
<th>Direct Influence</th>
<th>Indirect Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP, LF, FS, PV, AL, BL</td>
<td>PV, AL, BL</td>
<td>PV, AL, BL</td>
</tr>
<tr>
<td>PV</td>
<td>0.014</td>
<td>0.7</td>
</tr>
<tr>
<td>AL</td>
<td>0.012</td>
<td>0.6</td>
</tr>
<tr>
<td>BL</td>
<td>0.014</td>
<td>0.7</td>
</tr>
</tbody>
</table>

**Source:** Authors

Based on the table above, it can be seen that the total effect of the aesthetic attractiveness variable on the perceived value is 0.014, while the direct effect is 0.01. Thus, the aesthetic attractiveness variable has no significant effect on the perception of value because it is only 1.4%. Then the layout & functionality variables have a total influence on the perceived value of 0.7 and a direct influence of 0.711.

Furthermore, the layout & functionality variables have a significant effect on perceived value. Then on the financial security variable (FS), it can be seen that the total effect on the perceived value variable is 0.3 while the direct effect is 0.268, so it can be said to be influential but not significant. The perceived value variable as a mediator has a total influence on attitude loyalty of 0.828, the magnitude of the direct influence is the same as the total effect, while the behavioral loyalty has a total effect of 0.966 then the direct influence is 0.706. Furthermore, the attitude loyalty variable has a total influence on behavioral loyalty of 0.311 while the direct influence has the same value, it can be said that the three hypotheses H4, H5, and H6 have a significant positive effect.
Discussion

There was an insignificant relationship between aesthetic appeal. So this is in line with previous research from Tankovic & Benazic, (2018) which states that aesthetic attractiveness does not have a positive relationship with consumers' perceived value, meaning that the results of this study have new findings. However, this study is not in line with Van, (2003) finding that the online aesthetic appeal of a website is positively related to the perceived usefulness and convenience of users, this means that aesthetic appeal can affect consumers' perceived value of e-shopping.

The second hypothesis states that there is a positive and significant relationship between layout & functionality on perceived value. This is in line with the previous theory which states that online site design with customers in an online service setting can be interpreted as the design of web pages to create a positive effect on users to increase favorable consumer responses (Dailey, 2004). Internet webpages as a stretch of electronic services have marked a significant presence in the business world and are predicted to continue to gain popularity (Lai et al., 2014).

The results of the hypothesis in this study are that financial security has an insignificant relationship with perceived value. This means that this research is not in line with Harris & Goode, (2010) who state that three sub-dimensions of the e-servicescape are used to test online shopping intentions and buying experience. Then customer evaluation of the website and shopping behavior, trust or security on the website in making payments, and consumer experience in online shopping have a positive effect on perceived value (Huang et al., 2017). Tankovic & Benazic, (2018) proved in their research that financial security has a positive impact on consumers' perceived value in online shopping. Yeo et al., (2021) said in their research that financial security has a positive effect on perceived value. Therefore, it can be interpreted that e-commerce in Indonesia must be considered in terms of financial security in transactions, many consumers in Indonesia still do not trust the security system when transacting in e-commerce, therefore e-commerce parties must provide more education to consumers.

Next, the results of research between perceived value and loyalty of consumer attitudes have a significant effect. This means that this research is in line with Tankovic & Benazic, (2018) who states that perceived value is understood as a necessary condition to have a positive influence on consumer attitude loyalty. This is also supported by research by Garcia et al., (2018) which discusses online shopping behavior in two different markets by explaining consumer attitudes and behavior loyalty saying that the perceived value of consumers is directly and positively related to consumer attitude loyalty. From this research to the previous, it still proves that it still has a positive effect, meaning that a well-constructed perceived value will cause consumers to become loyal in attitude.

The results of the hypothesis in this study state that there is a positive and significant relationship between perceived value and behavioral loyalty. This is in line with previous research which states that behavioral loyalty is more due to price changes, the convenient location of a buyer, and based on the evaluation of benefits (sloping prices), perceived value can have a positive effect on behavioral loyalty (Wahyun & Ihsanuddin, 2019). Statistically, there is an effect of perceived value on behavioral loyalty as evidenced by Picon et al., (2016) that perceived value has a positive and significant effect on behavioral loyalty.

Hypothesis 6 in this study states and is proven to have a positive and significant relationship between attitude loyalty and behavioral loyalty. Therefore, it can be interpreted that the results of this study are in line with previous research which says that attitude loyalty has a positive relationship to behavioral loyalty which has been determined empirically (Lee and Goudeau, 2014). In addition, Lee et al., (2014) measure loyalty by examining the attitude and behavior side and show that cognitive image and affective image are important predictors of attitude loyalty, and the results of their research show that attitude loyalty positively and significantly affects behavioral loyalty. While Thiele & Mackay (2001), the correlation between attitude and behavioral loyalty must be positive. Also, some reviews reveal that there is a relationship between attitudes having a positive effect on behavioral loyalty (Huang & Zhang, 2008). Therefore, the results of this study are in line with previous research that has been proven statistically, therefore e-commerce actors must be consistent in building consumer loyalty behaviorally.

Conclusions

This research is different from previous research because the three important variables in the stimulus are only the layout & functionality variables which have been shown to have a significant effect, while the two variables of aesthetic appeal and financial security have not been shown to have a positive effect. Future research hopes to be able to re-examine the same object but with different results or try with other objects such as electronic products, and billing products available in e-commerce which are packaged in the SOR model concept.

This study has the most respondents shopee visitors where the object of research is not only shopee so that the respondent's answers are less representative of each e-commerce site chosen by the researcher, therefore it is hoped that in the future there will be respondents' answers that represent each e-commerce so that can describe the real situation.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

References


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