

Customer Perception of E-Service Quality: An Empirical Study in Indonesia

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Abstract

E-service quality has received attention from customer perception, especially online shopping customers. In the context of online shopping, e-service quality is believed to make an enormous contribution to customer perception. This study examines the effect of e-service quality (web design, responsiveness, reliability, trust, and personalization) on customer perception. A total of 278 respondents from South Sulawesi, North Sulawesi, Maluku, North Maluku, and Papua were involved and selected by purposive sampling method. The validity was tested using factor analysis with a loading factor value of ≥ 0 , the reliability was tested by a Cronbach's Alpha value ≥ 0.6 , and hypotheses were tested by regression analysis. The results show that e-service quality (web design, responsiveness, reliability, trust, and personalization) has a positive effect on customer perception. This study summarizes new findings regarding the positive effect of e-service quality (website design, responsiveness, reliability, trust, personalization) on customer perception as well as providing recommendations for future research. This research underlines that women dominate shopping more than men and that Generation Z dominates online shopping. In addition, the research provides new evidence that earnings do not determine how much online purchases will be made by consumers as the majority of our respondents are students who are active purchasers.

Keywords: Customer Perception, E-Service Quality, Online Shopping, Responsiveness, Reliability

JEL Classification Code: M31, M37, L81

1. Introduction

The Internet has become part of the lifestyle of most people in the world (Harcar & Yucelt, 2012). This can be seen from the level of Internet usage, which has rapidly increased in the last two decades (Trivedi & Trivedi, 2018). Indonesia becomes the second-highest Internet user country in the Asia Pacific region for online shopping (Statista, 2018a; Statista, 2018b; Statista, 2018c; Kalia, 2016; Kalia et al., 2016; Kalia et al., 2017).

The Internet has changed the way of doing business as today's consumers have more ways to access information about

an organization's products and services (Law & Leung, 2000; Muafi et al., 2021; Wattimena & Sin, 2020; Warriar et al., 2021). One of the businesses for which the potential is limitless using the Internet is online shopping (e-commerce) (Guo & Barnes, 2009; Ha et al., 2021). This potential incorporates good service quality since it is one of the main aspects of business success (Tshin et al., 2014). Service quality is defined as a comparison between expectations and reality (Parasuraman et al., 1988). It results in a good consumer experience and leads to greater customer loyalty with higher returns (Tan & Goh, 2017; Dam & Dam, 2021; Putra et al., 2021).

Hapsawati, (2019) argued that service quality carries new customers and maintains their loyalty. In an online shopping environment, e-service quality is understood as customer perceptions and judgments regarding the excellence and quality of delivery (Lee & Lin, 2005). Customer perceptions of the service they received are influenced by several components and determined based on their experience (Rakhmawati et al., 2013). However, the challenge to determine the effect of e-service quality on customer perception in the context of online shopping is the novelty of this study. Most studies discuss consumer perceptions based on the e-service quality

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variable, rather than each variable of customer perception and e-service quality separately (e.g., Kim & Kim, 2020; Setiawan et al., 2020; Suhartanto et al., 2019).

This research was conducted with online shoppers of Shopee and Tokopedia in Indonesia spread over the areas of South Sulawesi, North Sulawesi, Maluku, North Maluku, and Papua. This research breaks new academic grounds in this field.

2. Literature Review

2.1. Web Design

A website is a design process with a more effective approach used in a limited manner and developed based on customer perceptions (Katz et al., 1991; Weinberg, 2000). The successful rise of the Internet has made web-based systems an important medium in connecting service providers or products with their customers (Taherdoost, 2019). Customers' perceptions of the websites change when the information they are looking for is not available and they will move to other websites providing the information they need (Gao, 2005). This means that online shopping must be able to present their website visually attractive, have an easy-to-understand interface for consumers, and a fast and easy completion process (Parasuraman et al., 1988; Kim & Lee, 2002). When this has been fulfilled by online shopping, it will attract the attention of consumers by itself (Ganguly et al., 2010).

2.2. Responsiveness

Responsiveness refers to the speed and accuracy of responding to consumer requests and transactions (Zeithaml et al., 2002; Hu et al., 2012; Ayo et al., 2016). It concurrently fulfills the commitment of the online shopping party, both listening and providing clear information to consumers (Zemblytė, 2015). Besides, post-purchase inconveniences still occur frequently. Online shopping responds to this by providing support and after-sales service to respond to customer problems, which are part of the quality of the process that can only be felt (Bauer et al., 2006). Consumers expect online shopping parties to respond to their complaints promptly as quick responses help consumers solve their problems and make decisions in a timely manner (Wolfenbarger & Gilly, 2003; Liao & Cheung, 2002). A quick response to consumer demand is likely to increase perceived comfort and reduce uncertainty (Gummerus et al., 2004). Thus, high responsiveness can form positive consumer perceptions.

2.3. Reliability

Reliability deals with the ability to perform the promised services accurately, reliably, and punctually (Parasuraman

et al., 1988). It covers the ability to solve problems, blemished transactions with adequate security (Lee & Lin, 2005; Chang et al., 2016). Reliability is a major factor that motivates consumers to purchase. The reliability of products available online encourages consumers to make online purchases (Rishi, 2010). For this reason, every online shopping must be able to run its business at certain times, have a sincere intention to provide solutions to the problems faced by consumers, and avoid mistakes, whether intentional or unintentional (Parasuraman et al., 1988; Kim & Lee, 2002). This certainly has an impact on consumer perceptions of being comfortable when shopping. Therefore, one aspect of the Internet as a shopping platform is the reliability system that guarantees further examination of its convenience (Jun et al., 2004; Kim & Park, 2012; Udo et al., 2010; Yang & Fang, 2004).

2.4. Trust

Trust is the level of risk when involved in a relationship to get the expected results (Tandiono et al., 2020). Casaló et al., (2010) defined trust as an attitude to use social media toward the privacy and security issues. Trust in online shopping must be able to maintain the confidentiality of consumer data, not occur fraud related to financial transactions, must be able to protect online financial transactions, have a relatively low risk, be able to carry out obligations as an online shopping party, be highly competent in the field of e-commerce and have a good reputation (Parasuraman et al., 1988; Yang & Jun, 2002; Fang et al., 2011; Djojo et al., 2015). It has a direct influence on attitudes since perceptions are developed in the online shopping experience (Pavlou & Fygenson, 2006). It also has an impact on the decision to return to shopping in the future (Wu et al., 2008; Zheng et al., 2019). Trust also influences online shopping behavior (Hong & Cho, 2011). Teoh et al., (2013) contended that trust has an effect on customer perception in the context of online payment systems.

2.5. Personalization

According to Vesanen, (2007), there is no universally-accepted definition of personalization. It reflects the extent to which information is tailored to meet the needs of individual users and becomes an important determinant of positive experiences (Bilgihan et al., 2016). As positive experiences form a better consumer perception, online shopping (e-commerce) attempts to provide relevance by offering interesting content or products as a solution to consumer needs (Riegger et al., 2021). This includes targeted e-mails for new consumers, providing alternative recommendations for products and services based on consumer preferences, and providing a home or free space for consumers (Parasuraman et al., 1988; Yang & Jun, 2002; Fang et al., 2011; Djojo et al., 2015). Implicit relevance incorporates context specificity, which is important for personalization to

deliver the right content to the right people and at the right time (Tam & Ho, 2006). Personalization generates greater attention to offerings by creating self-associations, providing a good match with customer preferences, and encouraging increased elaboration of relevant information. These efforts are more likely to succeed in positively influencing purchasing decisions, by creating joy, gratitude, or customer satisfaction (Bock et al., 2016). Anderson and Liem (2020) stated that there are various factors that influence customers to buy products and service and experience when buy products and service is one of significant factor.

2.6. Customer Perception

In the context of online shopping, consumer perceptions come from previous experiences (Tandiono et al., 2020). As perception is the source of subjective norms (Pudaruth & Nursing, 2017), consumers' perceptions determine the success of e-service quality (Cristobal et al., 2007). The success of electronic services is largely determined by consumer perceptions of the online shopping system compared to offline methods, including the effectiveness and efficiency of services and the time required by consumers when shopping online compared to offline and consumer perceptions regarding the appearance of a friendly design and being able to attract the desire to shop online compared offline (Teoh et al., 2013; Fang et al., 2011). It is largely determined by the application of e-service quality such as web design, responsiveness, reliability, and trust (Lee & Lin, 2005) as well as personalization (Bues et al., 2017).

Based on the description above, this study illustrates the research model as in Figure 1 and proposes the following hypotheses:

H1: *Web design has a positive effect on customer perception.*

H2: *Responsiveness has a positive effect on customer perception.*

H3: *Reliability has a positive effect on customer perception.*

H4: *Trust has a positive effect on customer perception.*

H5: *Personalization has a positive effect on customer perception.*

3. Methodology

The population of this study is online shoppers of Shopee and Tokopedia. The sample was taken by purposive probability sampling method fulfilling the criterion of having made an online purchase from Shopee and or Tokopedia. The questionnaires were distributed in May-June 2019 with a total sample of 278 respondents. The validity was tested using factor analysis with a loading factor value of ≥ 0.5 (Hair et al., 2010), and the reliability was tested by a Cronbach's Alpha value ≥ 0.6 (Hair et al., 2009). The hypotheses were tested by simple regression analysis (Hair, Jr, 2015). The e-service quality measurement was adopted from Lee and Lin (2005) suggesting that e-service quality is divided into five variables, including website design, reliability, and responsiveness measured by a questionnaire developed by Parasuraman et al. (1988) and Kim and Lee, (2002). Furthermore, trust and personalization variables were measured by a questionnaire developed by Djojo et al. (2015), Fang et al. (2011), Parasuraman et al. (1988) and Yang and Jun, (2002). The customer perception variables were measured with a questionnaire developed by Teoh et al. (2013) and Fang et al. (2011).

4. Results and Discussion

The questionnaires were directly distributed to respondents in North Maluku, and for those in North Sulawesi, South Sulawesi, Maluku, and Papua, they were

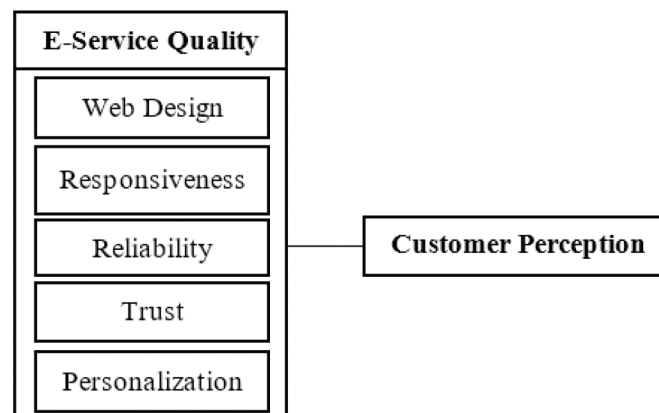


Figure 1: Research Model

given the questionnaire through Google Form link via WhatsApp group. Among the 350 questionnaires distributed, 298 (85%) were returned and 278 (79%) were eligible for further testing. Table 1 presents the respondent profile.

Table 1 shows the profile of the respondents by their gender, age, shopping frequency, occupation, purchased item price, and provinces. In general, the majority of the respondents were women, aged 15–24 years old with a shopping frequency of three times. Most of them are students purchasing products less than IDR1,000,000 worth. They come from five provinces, namely, South Sulawesi, North Sulawesi, Maluku, North Maluku, and Papua.

Table 1 implies that women enjoy shopping more, have more brand and price awareness, have higher self-confidence, and are hedonistic, while men prioritize functional and time-saving aspects when shopping (Seock & Bailey, 2008). By age and occupation, respondents are

generally Generation Z, followed by Millennial Generation, Generation X, and the Baby Boomers Generation. This underlines that Generation Z is more proficient in using the Internet than other generations so that the average goods purchased are under IDR1,000,000 (Ayuni, 2019; Dharmesti et al., 2019; Koksas, 2019; Ladhari et al., 2019).

Table 2 indicates the results of testing the validity and reliability among the variables studied. Website design, responsiveness, trust, personalization, and customer perception, all showed a loading factor value of ≥ 0.5 . Only the variable reliability has to be tested for validity twice because one question item does not meet the loading factor value. Furthermore, all variables were declared valid (Hair et al., 2010). Furthermore, for the results of reliability testing for the variables studied, all of them had a Cronbach's Alpha value ≥ 0.6 , so that all variables (website design, reliability, responsiveness, trust, personalization, and customer

Table 1: Profile of Respondents

Profile	Description	Frequency	Percentage
Gender	Male	92	33.09
	Female	186	66.91
Age	15–24 year	92	33.09
	25–34 year	80	28.78
	35–44 year	69	24.82
	≥ 45 year	37	13.31
Shopping frequency in the last 6 months	3 times	123	44.24
	4 times	96	34.53
	>5 times	59	21.22
Occupations	Pegawai Negeri Sipil	47	16.91
	TNI/POLRI	38	13.67
	Private Sector	56	20.14
	Student	137	49.28
Price of item purchased	\leq Rp1.000.000	115	41.37
	Rp1.000.000–Rp2.000.000	39	14.03
	Rp2.000.000–Rp3.000.000	51	18.35
	Rp3.000.000–Rp4.000.000	32	11.51
	Rp4.000.000–Rp5.000.000	29	10.43
	\geq Rp5.000.000	12	4.32
Province	South Sulawesi	71	25.54
	North Sulawesi	79	28.42
	Maluku	57	20.50
	North Maluku	50	17.99
	Papua	21	7.55

Table 2: Validity and Reliability Testing Results

Factor and Scale	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Website Design = Cronbach α 0.818						
Website Design1	0.888					
Website Design2	0.872					
Website Design3	0.814					
Responsiveness = Cronbach α 0.680						
Responsiveness1		0.874				
Responsiveness2		0.822				
Responsiveness3		0.667				
Reliability = Cronbach α 0.771						
Reliability2			0.844			
Reliability3			0.752			
Reliability4			0.900			
Trust = Cronbach α 0.848						
Trust1				0.704		
Trust2				0.799		
Trust3				0.824		
Trust4				0.743		
Trust5				0.777		
Trust6				0.557		
Trust7				0.639		
Personalization = Cronbach α 0.637						
Personalization1					0.572	
Personalization2					0.840	
Personalization3					0.868	
Customer Perception = Cronbach α 0.835						
Customer Perception1						0.883
Customer Perception2						0.912
Customer Perception3						0.807

perception), were declared reliable (Hair, Jr, 2015). This shows that valid questions must be reliable and the analysis can be continued to the following stages (Sekaran & Bougie, 2016).

Also, the results of validity and reliability testing in Table 2 shows that among the variables studied, the website design variables, responsiveness, trust, personalization, and customer perception, all showed a loading factor value ≥ 0.5 . Only the reliability variable, which is one question item, must be discarded because it does not meet the loading factor value. Furthermore, all variables are declared valid. Furthermore, for

the results of reliability testing for the variables studied, all of them had a Cronbach's Alpha value ≥ 0.6 , so that all variables were declared reliable. This shows that valid questions must be reliable and can be continued at the following stages.

Table 3 indicates that the majority of respondents agreed that website design must be visually attractive with a well-organized appearance and quick and easy transaction completion. As for the responsiveness, the respondents agreed about the importance of providing fast service, customer assistance, and proper responses to customer requests. They

Table 3: Respondents Perception

Variables	(%) Strongly Disagree	(%) Disagree	(%) Neutral	(%) Agree	(%) Strongly Agree	Modus
Website Design	–	2.2%	6.5%	54.3%	37.1%	Agree
Responsiveness	–	2.2%	14.4%	65.8%	17.6%	Agree
Reliability	2.2%	6.1%	34.9%	47.1%	9.7%	Agree
Trust	–	2.2%	16.5%	65.1%	16.2%	Agree
Personalization	–	–	22.3%	62.2%	15.5%	Agree
Customer Perception	2.2%	4%	27%	43.2%	23.7%	Agree

also agreed that reliability shows a sincere desire to solve customer problems flawlessly and with adequate security.

Furthermore, regarding the trust variable, the respondents agreed that the value of privacy protection, trustworthiness, transaction protection, low risk, proper obligation fulfillment, and e-commerce competency and good reputation. Also, as for personalization, the respondents agreed that targeted emails, product recommendations, and free personal homepages for customers will be beneficial. Table 3 also highlights that the respondents perceived online purchasing method is better and more efficient than the traditional method, and the user-friendly interfaces on e-commerce websites influence their purchasing decisions.

The results of hypothesis testing (see Table 4) show that website design has a positive effect on customer perception ($\beta = 0.409$, $t = 5.121$, $P < 0.05$), responsiveness has a positive effect on customer perception ($\beta = 0.761$, $t = 9.194$, $P < 0.05$), reliability has a positive effect on customer perception ($\beta = 0.433$, $t = 6.881$, $P < 0.05$), trust has a positive effect on customer perception ($\beta = 0.800$, $t = 10.878$, $P < 0.05$), and personalization has a positive effect on customer perception ($\beta = 0.228$, $t = 2.511$, $P < 0.05$). This concludes that all five hypotheses are supported. The results of hypothesis testing are shown in Table 4.

The hypothesis testing reveals that website design has a positive effect on customer perception. This implies that website design is the main medium that connects online shopping with consumers (Taherdoost, 2019). Thus, a good website must meet the elements of being visually attractive, having a well-organized appearance, and providing speed transactions (Kim & Lee, 2002; Parasuraman et al., 1988). Both Shopee and Tokopedia have fulfilled this.

The hypothesis testing also proves that responsiveness has a positive effect on customer perception. This shows that Shopee and Tokopedia have been able to handle complaints and respond quickly. E-commerce must constantly carry out its commitment to listen to the customers or provide clear information (Zemblytė, 2015), give fast service, help

Table 4: Hypotheses Testing

Independent Variable	Customer Perception		
	β	T	Sig
Website Design	0.409	5.121	0.000
Responsiveness	0.761	9.194	0.000
Reliability	0.433	6.881	0.000
Trust	0.800	10.878	0.000
Personalization	0.228	2.511	0.013

Note: Beta (β), t count (t), significant (Sig).

customers, and respond to their requests quickly (Kim & Lee, 2002; Parasuraman et al., 1988).

The hypothesis testing also suggests that reliability has a positive effect on customer perception. It is the main factor that motivates consumers to shop (Rishi, 2010). Good reliability performs the promised service accurately, reliably, and promptly (Parasuraman et al., 1988).

Also, the hypothesis testing signifies that trust has a positive effect on customer perception. Shopee and Tokopedia have been able to maintain consumer privacy and security which shape their consumer perceptions. This impacts their repurchasing decision (Wu et al., 2008; Zheng et al., 2019). This finding is in line with Teoh et al., (2013).

Subsequently, personalization has a positive effect on customer perception. This implies that positive shopping experiences in Shopee and Tokopedia form better consumer perceptions. This in turn creates a sense of joy, gratitude, and customer satisfaction (Bock et al., 2016).

5. Conclusion

This study summarizes new findings regarding the positive effect of e-service quality (website design, responsiveness, reliability, trust, personalization) on customer perception as

well as providing recommendations for future research. It also provides descriptive aspects such as gender, age, and occupation. This research underlines that women dominate shopping more than men and that online shopping is dominated by Generation Z. In addition, the research provides new evidence that earnings do not determine how much online purchases consumers will make as our respondents are students who are active purchasers. The challenge for future research will be to add other variables, both antecedents (customer knowledge, experiences, and perceived usefulness) and consequences (e-consumer satisfaction and purchase intention).

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