The mediation relationship of customer satisfaction between service quality and repurchase intention on e-commerce in Indonesia

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Abstract

This research aims to determine the relationship between service qualities and repurchase intention with customer satisfaction as the mediator variable on e-commerce in Indonesia. Data were obtained from 162 respondents by using close and self-administered types of questions. The respondents independently filled the given questionnaires with the Likert scale and Structural Equation Model (SEM) was used for analysis. The findings show that customer satisfaction variable is a mediation of web service quality and repurchase intention on e-commerce in Indonesia.

Keywords: customer satisfaction; e-commerce; repurchase intention; website service quality.

INTRODUCTION

E-commerce is a product or service transaction conducted through the internet network, therefore, an increase in its number of users tends to impact on the world of marketing in Indonesia positively. Statista (2016), stated that over the past 5 years, there was a significant increase in the development of e-commerce transactions in Indonesia. For instance, in 2018, a total of 144.1 trillion rupiahs were acquired from the total population. The current development of e-commerce is triggered by the variety of products offered as well as innovative, creative, interesting, and easy to use online services.

Due to the yearly continuous increase in online transactions, e-commerce companies need to persuade consumers to visit their websites which are adjusted to suit their needs and improve the quality of their services (Tandon, Kiran, & Sah, 2017).

E-commerce companies are not only obliged to acquire customers' trust, they also encourage them to make repurchases. Online repurchase intentions described in the technology acceptance model (TAM), consists of the following factors of website service

quality ease of use, security & privacy, usability, and functionality (Chen, Hsu, & Lin, 2010; Zhang et al., 2011). Website quality services successfully support e-commerce with a positive influence on customer satisfaction and the ability to reinforce repurchase intentions (Hsu, Chang, Chu, & Lee, 2014).

Furthermore, the fundamental factors used to determine the success of a website are superior information system and other marketing services designed to obtain customer satisfaction (Ha, Swinder, & Muthaly, 2010). According to Park & Kim (2012), customer satisfaction is the evaluation of each experience related to product purchase. It often leads to beneficial results, with an increase in customer retention, positive feedbacks on various online media platforms, and product recommendation to new users (Kumar et al., 2010).

Customer-perceived service quality is defined as the assessment or attitude related to service excellence in terms of comparative offerings (Parasuraman, Zeithaml, & Berry, 1988). The attributes developed by Parasuraman et al. (1988) are the basis of a global measurement tool for service quality also known as SERVQUAL. These include tangibles, reliability, responsibility, empathy, and assurance, although the inability to adequately provide quality to all industries has been identified as weakness. Zhang et al., (2011) reported on the positive influence of online quality, perceived vendor expertise in fulfilling orders, feedback, and perceived website usability on consumers repurchasing ability, while distrust confers a negative effect.

Parasuraman & Grewal (2012) proposed the need to carry out research for determining the importance of changes in the SERVQUAL dimension, especially when customers interact with technology, as against the service personnel. This consequently led to a number of studies to identify the most suitable attributes for online businesses.

Parasuraman & Grewal (2012) also developed websites aimed at influencing the consumers' perception of a product's quality, and ultimately persuaded the online purchase intentions. Nisar & Prabhakar (2017) reported on the positive relationship between customer satisfaction and spending. However, electronic satisfaction is higher in e-commerce than spending, based on the direct relationship between service quality, satisfaction and loyalty in online shopping. Unfortunately, this system faces a lot more challenges compared to traditional retailers, including the inability for customers to feel and try the products. This study, therefore, tries to close this gap by evaluating the mediation of customer satisfaction between the website quality and repurchase intention on e-commerce in Indonesia.

Ahmad, Rahman, & Khan (2016) stated that website service quality had become an important factor in making e-commerce successful. This is because it is easier, more practical, cost-efficient, and less time consuming compared to the conventional method.

According to Liang, Ho, Li, & Turban (2011) and Michaelidou, Siamagka, & Christodoulides (2011), the features, functions, and capabilities of website design tend to improve customer relationships, and support product as well as brand development. The content quality also influences consumer attitudes and interactions on websites (Hasan & Abuelrub, 2011). Meanwhile, design usefulness is one of the most important features of an e-commerce website (Li & Li, 2011). Singh, Malik, & Sarkar (2017) examined the satisfaction, use, attractiveness, simplicity and speed of using e-commerce websites to fulfil its usage and achieve product knowledge.

Hasan & Abuelrub (2011) acknowledged web service as a multi-dimensional construct consisting of information, system, and service quality. Tandon et al. (2017) emphasized on the role of enjoyment and usability, while Zehir, Sehitoglu, Baykal, & Zehir (2014) reported on the strong relationship between the quality and Loyalty Intentions towards the Values provided by retail companies using the internet as an e-commerce platform. Web service is because the website attributes influence consumers' perceptions of product quality, especially when the individual has higher information asymmetries (Wells, Valacich, & Hess, 2011).

Service quality also has an indirect positive effect on post-purchase intentions. Shin, Chung, Oh, & Lee (2013) explained web service quality as a combination of six dimensions, comprising of shopping convenience, site design, information usability, transaction security, payment systems, and customer communication. Tandon et al. (2017) reported the following as essential factors: ease of usage, security and privacy, navigation, website design, understanding, consistency, and information usefulness. Generally, the helpfulness of information provided is one of the reasons many consumers benefit from online shopping, while the website design and navigation stimulates the physical environment, with intent to trigger purchases. During the transaction, security and privacy are required to protect the customers' personal information, with effortless ordering procedures, especially in developing countries. Therefore, web service quality is conceptualized as a combination of nine dimensions, including the ease of usage, security and privacy, effortless ordering, navigation, website design, straight forwardness in understanding, adjustment, consistency, and usefulness of the information provided.

Customer satisfaction is defined as the ability to fulfill emotion-based evaluation and response (Shin et al., 2013). It describes customer confidence in the possibility of service that leads to positive results.

Repurchase Intention is the intensity of consumers to make repeated purchases of a product or service twice or more times (Shin et al., 2013). Ha et al. (2010) defined it as a person's planned decision to repurchase of a particular product or service while considering decisions such as situation and level of attractiveness. Zhang et al. (2011) stated that positive customer experience is directly related to repurchase intentions.

Hsu, Chang, & Chen (2012) reported on the significant effect of website quality on customer perceptions and satisfaction on repurchase intentions. This insight was congruent with the study outcome of Shin et al. (2013), while Chen et al. (2010) stipulated the direct influence of repurchase intentions on a company revenue and profitability. This study, therefore, focuses on repurchase intentions as the final dependent variable of the proposed model.

The research on consumer decision-making processes in India by Jain (2014), highlighted the feeling of safety in a majority during online shopping, with cash-on-delivery as the preferred payment mode. Tandon et al. (2017) studied the extent of customer satisfaction, and emphasized on the positive influence of COD, hence the persuasion to make repurchases. Tandon et al. (2017) stated that the safety factor significantly influenced the intention to carry out the COD payment mode, which needs to be developed in e-commerce.

Hsu et al. (2014) concentrated on the role of website quality and reported on the ability for positive emotions to promote beneficial behavior. Gounaris, Dimitriadis, &

Stathakopoulos (2010) explained the mediating characteristics of electronic satisfaction between the effect of electronic service quality and customer behavioral intentions, in terms of website revisits, communication, and repeat purchases.

Therefore, Abdul-Muhmin (2011) reported on the positive or negative effect of satisfaction and attitude on online repurchase intentions. Meanwhile, Shin et al. (2013) attributed the outcome to the website quality, possibly achieved by increasing customer satisfaction during transactions. According to Tandon et al. (2017), these activities are accomplished by increasing mediators, including customer satisfaction. In addition, this study aims to examine the direct and indirect effects of web service quality on repurchase intentions.

METHODS

Data were obtained from a minimum of 155 consumers that purchased products online at e-commerce websites in Indonesia using the non-probability sampling method. The SEM was used to determine the minimum sample size of five times the number of questions (Hair, Black, Babin, & Anderson, 2014). Therefore, the total numbers of questionnaires in this study are 5 x 31 statements. Furthermore, the purposive sampling technique with the following criteria was used: First, having online shopping experience more than three times a year on e-commerce websites in Indonesia. Second, in possession of a computer or laptop with an internet network used to access the website, and a bank account to make payments.

The research questionnaire was designed using the close-ended, and scaled response formats, with each variable, examined using five measurement scales (Likert). Google Form was used to distribute questionnaires by using online links to explain the research to be conducted to the target respondents through social media such as Whatsapp, Line, Instagram direct messages and other social media. Therefore, it helps to accelerate and facilitate respondents in filling out the questionnaire with the results stored digitally.

The items in this study are closely related to the research as shown in appendix 1 (Loiacono et al., 2007; Tandon et al., 2017; Shin et al., 2013; Bansal, McDougall, Dikolli, & Sedatole., 2004; Zhou, Lu, & Wang, 2009; Wolfinbarger & Gilly, 2003; Chen et al., 2010). Several items were selected, adapted, and measured using a 5-point Likert scale, from 1 for "strongly disagree" to 5 for "strongly agree".

All developed models have a corresponding value, used to explain empirical information according to the data collected. Also, the Goodness-of-fit tests for all SEM models are shown in Table 1. According to the table, 8 out of 12 estimates show good results, while the remaining 4 are less good.

Table 1
The Results of the Goodness-of-fit Test for all SEM Model

GOF Size	Target-Level of Goodness-of-fit	Estimated Results	Level of Goodness-of-fit
Chi-Square	Small values p>0.05	101.290(P=.000)	Poor fit
NCP Interval	Small values and narrow interval	39.510; 99.500	Poor fit
RMSEA p	RMSEA ≤ 0.08	.110	Marginal fit

GOF Size	Target-Level of Goodness-of-fit	Estimated Results	Level of Goodness-of-fit
(close fit)	p<0.05	.000	
NFI	NFI ≥0.90 Good Fit 0.80 ≤ NFI ≤ 0.90 marginal fit	.890	Marginal fit
NNFI	NNFI ≥ 0.90 good fit 0.80 ≤ NNFI ≤ 0.90 marginal fit	.900	Good fit
CFI	CFI>0.90 good fit 0.80< CFI<0.90 marginal fit	.920	Good fit
IFI	IFI>0.90 good fit 0.80< IFI<0.90 marginal fit	.930	Good fit
RFI	RFI>0.90 good fit 0.80< RFI<0.90 marginal fit	.860	Marginal fit
CN	CN>200	90.910	Poor fit
RMR	Standardized RMR< 0.05	.078	Poor fit
GFI	GFI>0.90 good fit 0.80< GFI<0.90 marginal fit	.890	Marginal fit
AGFI	AGFI>0.90 good fit 0.80< AGFI<0.90 marginal fit	.820	Marginal fit

Source: data processed

This study uses significant and confident levels of .05 and 95%, therefore, the t-value of the structural equation coefficient needs to be greater than 1.97. A t-value above 1.97 the validity of each indicator or latent change is obtained as shown in appendix 2.

RESULTS AND DISCUSSION

Result

Based on the results of the questionnaire distribution conducted on a non-probability basis through Google documents, 162 questionnaires were obtained, which were processed into research data. The profile of respondents that filled out the questionnaire is as follows:

Table 2
Characteristics of Respondents

Statement	Description	Number	Percentage
Gender	Male	78	48.140
	Female	84	51.850
Age	19-23	87	53.700
	24-28	49	30.240
	29-34	19	11.720
	25 and more	7	4.320
Profession	Student	88	54.320
	Private employees	45	27.770
	Government employees	13	8.020
	State-owned enterprises employees	3	1.820
	Others	15	9.250

Income	<Rp 3,000,000	112	69.130
	Rp 3,000,000 – Rp 6,000,000	30	18.510
	Rp 6,000,000 – Rp 9,000,000	14	8.640
	Rp 9,000,000 – Rp 12,000,000	2	1.230
	> Rp 12,000,000	4	2.460
E-Commerce Websites that are Frequently or Ever Visited	Lazada	53	12.210
	Zilinggo	38	8.760
	Bukalapak	95	21.89
	Tokopedia	97	22.350
	Elevenia	12	2.760
	Shopee	101	23.270
	Blibli	10	2.300
	JD.ID	24	5.530
	Others	4	.920

Source: data processed

The results of this questionnaire distribution showed that customers between the age of 19-23 years made more use of e-commerce shopping websites, while students are the most active group in using the internet. Furthermore, Shopee is the most visited website with approximately 23.37 percent, due to the ability of the respondent to compare product features from visiting the site (Ahmad et al., 2016)

Structural model analysis shows the significant effect from the t-value, assessed to be above 1.97. In addition, the web service quality construct confers a positive and significant effect on customer satisfaction at t-value of 7.07, and an estimated value of .63, and no significant effect was recognized on repurchase intention. This was because the t-value was 1.19, which is below the 1.97 benchmark. Furthermore, customer satisfaction on repurchase intention has a positive and significant influence at t-value of 4.61 and an estimated value of .36, while the indirect effect of web service quality on repurchase intention mediated by customer satisfaction leads to positive and significant consequences, with a t-value of $\{[7.07 \times 4.61] + 1.19\} = 33.78$ and an estimated value of $\{[.63 \times 0.36] + .11\} = .34$.

Table 3
Hypothesis Test Results

Hypothesis	Pathway	t-value	estimation	Conclusion
1	Web service quality is a multi-dimensional construction that is easy to understand, use, order, provide information, security and privacy, website design, navigation, and customization.	Minimum Loading Value is .70		The structural model assessment is used for the suitability of latent variables
2	Website service quality to customer satisfaction	7.07	.63	The results are supported

Hypothesis	Pathway	t-value	estimation	Conclusion
3	Website service quality to repurchase intention	1.19	6.19	The results are not supported
4	Customer satisfaction to repurchase intention	4.61	.36	The results are supported
5	Customer satisfaction mediates the relationship between website service quality and repurchase intention	33.78	.34	The results are supported

Source: data processed

The results demonstrated the significant positive effect of website service quality on customer satisfaction. This is proven from the clients' opinion in relation with the online shopping experience. Ahmad et al. (2016) reported on the important role of website service quality in attaining e-commerce success. This is due to the ease, practicality, zero cost, and timeliness of comparing product features online, in comparison with conventional markets.

Web service quality has no significant effect on repurchase intention, due to the poor satisfaction of consumers with shopping experience with the ease of understanding, usage, ordering, information usefulness, security and privacy, website design, navigation, and customization. Therefore, it is important for companies to maintain and improve the dimensions of electronic services, particularly with online shopping, due to the pleasant experience made available to consumers. Shin et al. (2013) reported website quality as an important factor for increasing repurchases intentions in a customer's perspective.

SEM results show the inability for website service quality to effect on repurchase intention. Zhang et al. (2011) reported on the direct relationship between positive customer experiences and repurchase intentions, hence the need to have sound knowledge of the product or service.

Furthermore, SEM results show the significant positive effect of Website service quality on customer satisfaction, which consequently affects repurchase intention, thus serving as a mediator. The findings are consistent with study of Gounaris et al. (2010), where a significant association was established between website quality and user satisfaction, subsequently influencing the use of online services. Gounaris et al. (2010) reported on the mediating characteristics of electronic satisfaction between the influence of service quality and customer behavioral intentions. These include site revisits, word of mouth communication, and repeat purchases.

CONCLUSION

In conclusion, web service quality is a multi-dimensional construction consisting of ease of understanding, usage, ordering, information usefulness, security and privacy, website design, navigation, and customization. This result is shown from the t-value, which shows that the loading to the corresponding latent variable, at least .70.

This research proves that customer satisfaction is able to mediate the effect of website service quality on repurchase intention. It also shows that the indirect effect of website service quality on repurchase intention is greater when mediated by customer satisfaction.

Therefore, e-commerce marketplace service providers in Indonesia need to focus on factors capable of creating long-term customer satisfaction and mutually benefit marketplace service providers and consumers. It also has the ability to increase positive word of mouth recommendation on the services offered by the marketplace in Indonesia.

Also, when creating strategies to retain online customers, it is necessary to develop quality products, reliable deliveries, and increase the payment system conducted.

This research is limited to the inability to take samples from e-commerce websites frequently visited by respondents, therefore, further research is needed.

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Appendix 1 Variable Operations

Construct
Sources

Ease of Understanding:
EASEUND1   The language used by e-commerce websites is easy to understand
EASEUND2   The display page leads to more understandable information
EASEUND3   The transaction process of an e-commerce website is understandable
EASEUND4   Easy to order online
Adapted from Loiacono et al., (2007); Tandon et al., (2017)

Ease of Use:
EASEUSE1   Easy to shop via the internet
EASEUSE2   This e-commerce website is easy to use
EASEUSE3   It is easy to navigate Navigation through an e-commerce website
Adapted from Loiacono et al., (2007)

Ease of Ordering:
EASEORED1   This e-commerce website makes it easy for customers to track orders
             online.
EASEORED2   This e-commerce website has detailed instructions for modifying orders
             online.
EASEORED3   This e-commerce website has detailed instructions for canceling orders
             online.
Adapted from Tandon et al., (2017)

Information Usefulness:
INFOUSE1   This e-commerce website provides lots of information on product features
             and quality.
INFOUSE2   The information provided by this e-commerce website helps customers in
             purchasing products.
INFOUSE3   This e-commerce website provides useful information on the product.
Adapted from Shin, et al. (2013) ; Bansal et al., (2004)

Website Design:
WEBD1   The attractive color scheme of this e-commerce website facilitates
             customersto shop.
WEBD2   The graphics displayed on this e-commerce website facilitate custoemrs to
             order products.
WEBD3   Shopping online is a pleasant experience.
Adapted from Wolfinbarger & Gilly, (2003) ; Zhou et al., (2009)

Navigation:
NAV1   Product images are quickly downloaded
NAV2   The search function on this e-commerce website is very helpful
NAV3   This e-commerce website facilitates users to return to the previous page
             display
NAV4   This e-commerce website is easy to obtain main information
Adapted from Bansal et al., (2004); Wolfinbarger & Gilly, (2003)

Security and Privacy:
SANDP1   This e-commerce website has adequate security measures.

SANDP2   Customers feel safe when using their credit/debit card on this e-commerce website.
SANDP3   This e-commerce website does provide customers personal information to other websites without their permission.
Adapted from Chen et al., (2010); Shin et al., (2013)

Customization:
CUSTOM1   This e-commerce website allows customers to customize their product before ordering.
CUSTOM2   This e-commerce website responds to customer needs.
Adapted from Wolfinbarger & Gilly, (2003)

Customer Satisfaction:
CUSAT1   Customers are satisfied with the quality of the products offered online
CUSAT2   Online shopping is a satisfying experience because it offers products that are adjusted to customers' convenience.
CUSAT3   Customers are satisfied with the cash-on-deliver payment mode.
Adapted from Wolfinbarger & Gilly, (2003)

Repurchase Intention:
RI1   Customers want to repurchase products from this e-commerce continuously
RI2   Customers wish to pay via cash-on-delivery continuously
RI3   At other times, they like to repurchase products online by paying through cash-on-delivery.
Adapted from (Shin et al., (2013)

Appendix 2: Validity and Reliability Test Results

Variable	*SLF ≥ .50	Error	*CR≥.70	*VE≥.50	Conclusion
Ease of Understanding					
			.790	.540	Good reliability
UASEUND1	.520	.730			Good validity
UASEUND2	.670	.550			Good validity
UASEUND3	.810	.350			Good validity
UASEUND4	.780	.390			Good validity
Ease of Use			.730	.490	Good reliability
EASEUSE1	.540	.710			Good validity
EASEUSE2	.920	.160			Good validity
EASEUSE3	.590	.650			Good validity
Ease of Ordering			.700	.450	Good reliability
EASEORD1	.560	.690			Good validity
EASEORD2	.650	.580			Good validity
EASEORD3	.780	.390			Good validity
Information Usefulness			.730	.440	Good reliability
INFORUSE1	.600	.640			Good validity
INFORUSE2	.810	.340			Good validity
INFORUSE3	.650	.580			Good validity
Web Design			.700	.420	Good reliability
WEBD1	.720	.470			Good validity
WEBD2	.720	.480			Good validity
WEBD3	.520	.820			Good validity
Navigation			.740	.430	Good reliability
NAV1	.530	.710			Good validity
NAV2	.620	.620			Good validity
NAV3	.840	.300			Good validity
NAV4	.590	.650			Good validity
Security and Privacy			.880	.730	Good reliability
SANDP1	.530	.720			Good validity
SANDP2	.980	.030			Good validity
SANDP3	.980	.040			Good validity
Customization			.970	.950	Good reliability
CUSTOM1	.990	.030			Good validity
CUSTOM2	.970	.060			Good validity
Customer Satisfaction			.890	.740	Good reliability
CUSAT1	.980	.040			Good validity
CUSAT2	.550	.700			Good validity

Variable	*SLF ≥ .50	Error	*CR≥.70	*VE≥.50	Conclusion
CUSAT3	.980	.030			Good validity
Repurchase Intention			.760	.520	Good reliability
RI1	.680	.850			Good validity
RI2	.920	.150			Good validity
RI3	.650	.580			Good validity

Source: data processed

Variable	*SLF ≥ .50	Error	*CR≥.70	*VE≥.50	Conclusion