

The Role of Technological Acceptance and E-Service Quality in Predicting Customer Satisfaction and Loyalty

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Abstract—This study investigated the influence of technology acceptance factors and e-service quality towards customer satisfaction and loyalty in online shopping context. An on-line causal survey was conducted in Yogyakarta, Indonesia. Sample was selected by purposive sampling criteria involving 150 users of a certain marketplace. Data were analyzed using Structural Equation Modeling (SEM). Results showed that (1) technology acceptance significantly affects customer loyalty, (2) technology acceptance also significantly affects customer satisfaction, (3) e-service quality has a significant impact on consumer satisfaction, while (4) e-service quality does not have a significant impact on customer loyalty, and (5) customer satisfaction has a significant impact on consumer loyalty.

Keywords—technology acceptance factors; e-service quality; customer satisfaction customer loyalty; online shopping

I. INTRODUCTION

The rapid development of information technology, including internet, bring great impact to all aspects of human life. Internet has become a business and marketing media. The rapid growth of internet users has created a potential market for business players. On line services provide benefits for marketers in the forms of fast adjustment to market conditions, lowering costs, fertilizing online marketers relationship with consumers and opportunities to learn more from the customers, as well as measuring the number of consumers through web visitors.

In 2017, Indonesia is recorded as the big six countries in term of internet-user. The amount of internet-user has grown from 83,7 million in 2017 to 112 million in 2017. Indonesia has also become the fourth country with the most internet users in Asia [1]. The use of online shopping in Indonesia increased dramatically. The dramatic changes in technology have changed the way consumers life, the way they spent money, and the way they interacted with others. There are many online shopping sites in Indonesia, which sell various items. In 2015, five e-commerce websites are recorded as the highest visited websites in Indonesia, i.e.: Lazada.com, Bli bli.com, Tokopedia.com, OLX.co.id, Bukalapak.com [2].

The growth of online shopping in Indonesia creates competition in providing the best service and other advantages that are not provided by other sites. Many conveniences are also provided so that consumers can shop easier. The user friendly website, wide range of products offerings, the simpler buying and payment mechanism are some of conveniences which provided to the customers. Such conveniences, in turn, will influence the customer's perception toward acceptance of new technologies in the transaction.

Acceptance toward new technologies in on line transaction is an interesting issue to be investigated. According to Davis, easiness of online shopping application can also affect customer satisfaction and loyalty [3]. Technology Acceptance Model (TAM) is widely used to explain and predict consumer behavior in the acceptance and continuation of information technology. Perceived of usefulness and perceived of easiness is considered and confirmed as the two major predictors of user acceptance of sustainable information systems [3].

Another important aspect in providing on line business services is the services of quality websites. Previous studies show that higher levels of technology acceptance and fulfillment of customer expectations for service quality websites will increase customer satisfaction. Customer satisfaction is one of antecedents for customer loyalty. Consumer reaction, especially when they satisfied with the product performance, will indicate their emotional involvement to the products. Consumer will get satisfied when their expectation regarding the product performance is fulfilled. Customer satisfaction is also a key for consumer to build customers' trust to the visited online store. Consumers who are satisfied during their shopping experience will have higher probability to repurchase the product in the future. Customer loyalty in the context of online shopping is the desire to visit and re-purchase certain online store.

The growth of online shops in Indonesia has become challenges for marketers in creating new strategies to cope with. Companies try to develop websites to perform two-ways interaction with the consumer, so that the company can learn consumers need better. According to Siegel, the quality of website can significantly affect the success of e-commerce [4].

In order to succeed, the website should provide comprehensive information in an easy format, well-designed navigation and easy to operate website so that consumers can access it effectively.

Customers loyalty is commitment to repurchase product or service. Research showed that, customer satisfaction, will in turn influence customer loyalty. Consumers who are on the loyal phase will be very beneficial for company and be a continuous investment for the company. Customer loyalty has been recognized as one of the important factors in creating benefits for the company. The way to build customer loyalty of online shopping is the seller needs to know what customers want to repurchase online. In traditional trade is very easy to establish a relationship between sellers and buyers for their direct interaction, but in online environment is more complicated to establish a social relationship between the seller and the buyer because lack of physical environment and social distance between seller and buyer [5].

OLX.co.id is an Indonesia web focused on buying and selling products and services online. This site is one of the reference to look for new or pre-loved product with good quality such as electronics, automotive, houses, home appliances, and miscellaneous services. In 2016, OLX.co.id on 1176 ranks as the most popular sites in the world and 48th in Indonesia. OLX.co.id as first ranked for popular e-commerce among the buyer transactions.

According to the abovemention data, OLX.co.id was choosen as the setting in this study. OLX.co.id is one of the largest online trading-site in Indonesia. This website established in 2005 with the name of tokobagus.com and on May 20, 2014 has been renamed as OLX.co.id. OLX is a marketplace for the sellers and buyers to meet each other in a virtual world easily and quickly. OLX also easy to be searched due to not only visitors who can find advertisement about OLX, but also people who are looking for products and services through search engine such as Google will also find OLX advertisements. This online media comes with many advantages, especially for sellers who can post free advertisement. OLX provide a lot of goods that can be searched on this platform such as hand phones, computers, home appliances, automobiles, motorcycles, houses, properties and even jobs and other related services.

Several previous studies have been conducted to examine the influence of acceptance of the technology and service quality websites to customer satisfaction and loyalty. One of those studies is conducted by Lin and Sun in Taiwan [6]. Lin and Sun study's use the e-service quality, technology acceptance factor, specific holdup cost as an independent variable and customer e-satisfaction, customer e-loyalty as the dependent variable. The results of this research showed that that technology acceptance factor significantly influence the customer e-satisfaction, the second hypothesis is that technology acceptance factor significantly influence customer e-loyalty, e-service quality significantly influence the customer e-satisfaction, e-service quality significantly influence the customer e-loyalty, specific holdup cost significantly influence the customer e-loyalty, and customer e-satisfaction significantly influence the customer e-loyalty. A similar study

also conducted by Chang and Wang [7]. Results of Chang and Wang study showed that e-service quality significantly influence the customer e-satisfaction, customer e-satisfaction significantly affect customer e-loyalty, e-service quality significantly influence the perceived value, perceived value significantly influence the customer e-satisfaction and perceived value significantly influence the customer e-loyalty [7].

Based on the model developed by Lin and Sun, this study investigates the roles of technological acceptance factors and e-service quality on satisfaction and loyalty of on line customer in the setting of OLX.co.id [6]. The term 'website' will be used interchangeable with the term 'electronic' in the next section of the paper.

II. THEORETICAL FRAMEWORK

This study integrates theory of technological acceptance model and theory of service quality to predict customer satisfaction and loyalty. Customer satisfaction itself, happened when customers feel that the service provider could meet their expectations. Theoretically, customer loyalty is an outcome that occurs when a customer feels satisfied [8]. In on line business context, customer expectations to the service providers include factors related to specific characteristics of the business, such as the extent to which they can accept the technology that become the bases of the on line business. This phenomenon was investigated by Davis and formulated in a causal model called Technological Acceptance Model [9]. Another variable that is considered to influence customer satisfaction is service quality (SERVQUAL) developed by Parasuraman [10].

A. Technology Acceptance Model

Technology Acceptance Model (TAM) is built to analyze and explain the factors that affect the users' acceptance to the information system [9]. TAM explains the factors that affect acceptance technology within an organization through a causal relationship between customer belief about benefits of information system and user easiness with the actual behavior of the user of an information system. Referring to TAM [9], there are several factors that affects the integration of technology, namely: a. perception of usefulness b. ease of use perception, c. attitude towards the use, d. behavioral intention to use.

Users' perception of the benefits of the technology can be measured in several forms: a. increasing user productivity, b. improving user performance, c. improving the efficiency of the process performed by users. In general, the experience of using technology might have positive or negative impact on the provided technology. Perception of ease of use toward the technology can have impact both on customer satisfaction and customer loyalty.

B. Quality Service Website

Website service quality is defined as the ability of a website to facilitate shopping, purchasing and distribution effectively and efficiently [11]. Website Quality is one of the concepts used in measuring the quality of a website based on the

perception of the end user. This concept is an extension of previous SERVQUAL which widely used in measuring quality services. Website Quality or commonly called WebQual been developed since 1998 and has undergone several iterations in the preparation of the dimensions and questions. Hyejeong and Niehm revealed that the previous researchers divide the website into five dimensions of quality [11]: a. Information, including the quality of the content, usefulness, completeness, accurate, and relevant, b. Security, including trust, privacy and security, c. Ease, includes easy to operate, easy to understand, and the speed, d. Leisure, include visual appeal, emotional appeal, creative and attractive design, and e. Quality of service, including the completeness online.

WebQual is a method to measure the quality of a website based on user perception. This method is the development of *ServQual Zeithaml* which widely used to measure service quality. Fulfillment of the whole dimensions of the quality of the website mentioned above, can make the user feel comfortable and satisfied when using a website. Comfort and satisfaction received by user can affect user's loyalty on web site usage

C. Customer Satisfaction

According to Kotler and Keller customer satisfaction is feeling happy or disappointed arising from comparing the performance of perceived product (result) to their expectations [12]. A consumer, if they satisfied with the value provided by a product or service, it is very likely to be a consumer in a long time. Bitner and Zeithaml suggested that satisfaction is a much broader concept than just assessing the quality of services, but is also influenced by other factors which can be explained as follows [8]:

- Service quality, customers would be satisfied if they get good service or as expected.
- Product quality, customers would be satisfied if they can show if their products are in a good quality
- The price, which is a product that has the same quality but set a relatively cheap price would give a higher value to consumers.
- Situational factors, namely the circumstances or conditions experienced by consumers.
- Personal factors of the consumer, which is consumer characteristics that include personal needs.

Kotler explains that there are several methods of measuring customer satisfaction [12], including: system of complaints and suggestions, ghost shopping, lost customer analysis, customer satisfaction surveys. Customer satisfaction can affect customer loyalty. Consumers who are satisfied with the service, price and the factors mentioned above, would think to repurchase in future.

D. Customer Loyalty

Hur et al., defined consumer loyalty as the commitment to repeat buying the product or service of the firm consistently in the future [13]. Customer satisfaction, resulting in repurchase

the products or services with the same brand, although there are situational influences and marketing efforts from other brands that potential to cause switching behavior. Kotler explain the factors that influence customer loyalty to a product i.e., [12]:

- Customer satisfaction. Consumer satisfaction is a measurement of the gap between consumer expectation with fact which they receive or feel.
- Service quality. Quality of service is the expected level of excellence and control over the excellence level in order to fulfill consumer desires.

Some indicators, such as repeat purchase, retention rate and referrals commonly used to measure customer loyalty. Kotler identified several advantages to be obtained because the company has a loyal customer like [12]: reduce marketing costs, reduce transaction costs, reducing the cost of turnover consumers, improve cross-selling will increase the market share of the company, word of mouth is more positive with assumption if consumers are loyal also means they are satisfied, and reduce the cost of failure.

Therefore, it can be concluded that a loyal customer is a consumer who has the confidence to shop online and buy repeatedly and committed to the products offered although they have several options competitors' products. In addition, loyal customers will refer the product to the surrounding environment.

E. Relationship Among Variables and Research Hypothesis

1) *Technology acceptance factor influence on customer loyalty*: Shih argues that individual attitudes toward online shopping is strongly and positive correlation with user acceptance [14]. The results of empirical research confirmed that the perceived ease of use of online trading significantly determine individual loyalty towards online shopping. The findings of the above leads to the following hypothesis.

H1: Technology acceptance factor significant affects customer loyalty

2) *Effect of acceptance factor technology and customer satisfaction*: The latest research shows that customer satisfaction in the online environment is significantly higher than in traditional channels as a result of the ease of use in obtaining information [7,15-18]. Based on these research findings led to the formulation of the following hypothesis.

H2: Factor technology acceptance significantly affects customer satisfaction

3) *Effect of website service quality and customer satisfaction*: Some studies claim that the quality of website services are beginning to find their form relationships that influence the attitudes and behavior of consumers within the scope of online purchases. Wu and Lin showed that a good website and easy to use in the transaction will more easily attract customers to make repeat purchases and ultimately lead to consumer satisfaction [19].

According to Chinomona et al., there are two attributes of service quality website that can determine customer satisfaction is ease of use of the web (the response speed, navigation

support, the use of new web technologies) and content information (quantity, quality, accuracy, customized information) [20]. Therefore, it would appear that the website service quality dimensions contribute to satisfy Internet users when visiting a site. By the logic above, formulated the following hypotheses.

H3: The quality of website services have a significant effect on customer satisfaction.

4) *Effect of website service quality and customer loyalty:* Researchers generally agree that the quality of website services have a significant impact on customer loyalty in the online business [22]. In Chang and Wang, states that the advantages of the web site is user friendly and quite informative, the more likely consumers to buy and make repurchases [22]. In addition, the reputation of an online shopping positively affect customer loyalty.

Cheng et al., shows that customer loyalty can be influenced by the quality of online services [23]. They found that the dimensions of the quality of online services or the quality of website services has a relationship with loyalty. Therefore, more and more users tend to trust the quality of service of the website, the more they tend to be loyal to the online business. Relating to the impact of service quality on customer loyalty this website, the following hypotheses derived.

H4: The website service quality have significant effect on consumer loyalty.

5) *Effect of customer satisfaction and customer loyalty:* Consumers who are satisfied will visit a website more often and it will increase loyalty. Because, once the online consumer has a habit of shopping at a particular site, purchase decision process become accustomed. Consumer satisfaction is widely recognized as a key predictor of customer loyalty [22]. Consumers who are satisfied are more likely to tell others about their experience advantageous. Alleged influence consumer satisfaction on loyalty is tested in the following hypothesis.

H5: Consumer satisfaction significant affects consumer loyalty.

III. RESEARCH MODEL

According to discussion about the causal relationship among technology acceptance factors, quality of website services, satisfaction and loyalty, the research model can be described as in Figure 1.

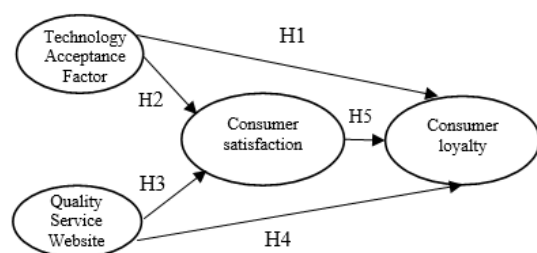


Fig. 1. Research model.

IV. METHOD

This study is conducted using quantitative causal survey design. The research settings is OLX.co.id. The sampling method is non-probability sampling method, i.e.: purposive sampling. The criteria for selected sample are: the respondents are people who live in Yogyakarta, aged 17 years or above and have been purchased through OLX.co.id at least 3 times during the last three months. Sekaran suggests that the minimum sample size is 5-10 times the estimated number of indicators [24]. The number of indicators developed in this study was 22 the questions. Based on the above general rule, the targeted number of respondents for this research is 150 respondents. The data is collected by distributing on line questionnaires using google docs and spread the link using online chat applications.

V. MEASUREMENT

The model consists of two independent variables, i.e.: factors of technology acceptance and websites service quality. Technological acceptance factors were measured in form of the usefulness of the technology, perceived ease of use, the perception of attitude towards the use of technology, perceived of behavioral intention to use, refers to Davis [3]. Website service quality variables were measured from the website information, website security, website convenience, comfort, quality of service, refers to the Hyejeong and Niehm [11]. This research model also accommodates satisfaction toward the website as mediating variable. Meanwhile, the dependent variables used in this model is customer loyalty, which is measured through: repeat purchase, resistance to the negative influence on the company (retention), and willingness to refer the total existence of the company (referalls).

Confirmatory Factor Analysis (CFA) was conducted to test the validity of the items of measured constructs. The required factor loading for each item is more than 0.50. While, reliability testing is conducted by measuring the Cronbach Alpha of each construct with the criteria for Cronbach alpha is more than 0.60.

VI. RESULTS

A. Description of the Respondents

Based on the results of online survey (via link <https://goo.gl/forms/2xsUAvwr3WSZI4s12>), the obtained responses are 165 respondents. Fifteen of these are unusable, so that 150 responses left to be used in further analysis. The descriptive data of the respondents are shown in Table 1.

According to Table 1, it showed the same percentage of male and female respondents. Most of the respondent (89%) aged between 17-25 years old and all of them already made purchased at OLX.co.id more than three times. The residential areas sources of the respondents are dominated by the regencies of Yogyakarta and Bantul and Sleman.

TABLE I. DESCRIPTION OF RESPONDENTS

Characteristics of Respondents	Categories	Number of responses	Number of responses Percentage
Gender	Man	75	50%
	Woman	75	50%
	Total	150	100%
Age	17-25 years	134	89%
	26-34 years	10	7%
	35-43 years	2	1%
	44-53 years	4	3%
	Total	150	100%
The intensity of using OLX during last 3 months	> 3 times	150	100%
	<3 times	0	0%
	Total	150	100%
Regency	Yogyakarta	40	27%
	Sleman	30	20%
	Bantul	41	27%
	Kulon Progo	26	17%
	Gunung Kidul	13	9%
	Total	150	100%

TABLE II. VALIDITY AND RELIABILITY TEST RESULTS

Indicator	Component				Reliability
	1	2	3	4	
TAF1	.641				0.879
TAF2	.870				
TAF3	.808				
TAF4	.671				
TAF5	.672				
TAF6	.516				
WSQ1		.656			0.863
WSQ2		.621			
WSQ3		.701			
WSQ4		.732			
WSQ5		.716			
CS1			.709		0.887
CS2			.604		
CS3			.781		
CS4			.715		
CS5			.725		
CS6			.579		
CL1				.676	0.902
CL2				.773	
CL3				.661	
CL4				.637	
CL5				.667	

B. Results of Instrument Testing

Results of Confirmatory Factor Analysis showed in Table 2. According to Table 2, each item has loading factor greater than 0.50, so that it can be concluded that each item is valid and can be used for further analysis. Reliability testing results showed that Cronbach alpha values for all constructs are greater than 0.60. It also can be concluded that the overall research instrument is reliable and can be used for further research steps.

Note: TAF: technological acceptance factors, WSQ: website Service Quality, CS: customer satisfaction, CL: customer loyalty.

C. Data Analysis

Data was analyzed using Structural Equation Modeling (SEM) with Amos 21.0 software. The measurement model showed in Figure 1. According to Figure 1, the model consists of two exogenous variables: acceptance of the technology and service quality of the website, while for the endogenous variables consist of customer satisfaction and loyalty. The path diagram for the model then converted into a structural equation model as shown in Figure 2.

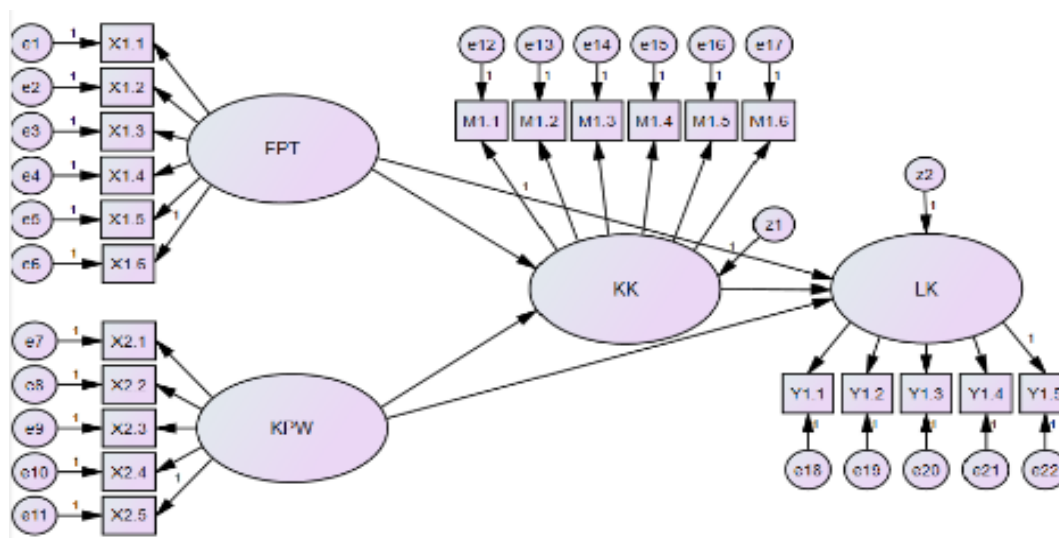


Fig. 2. The measurement models.

The analysis were then continued by selecting an input matrix for data analysis and estimation of the proposed model. The estimation model used is the maximum likelihood estimation (ML). ML estimation has been met according to large sample size ($n = 150$ samples) assumption, and have met the rule of thumb. Normality test was conducted by using the criteria of the largest value of skewness critical ratio -2.58 to 2.58. Data can be concluded to have normal distribution when the value of skewness below the critical ratio of 2.58 [24]. The test results of normality can be seen in Table 3.

TABLE III. NORMALITY TEST

Variables	Min	Max	Skew	Cr	Kurtosis	Cr
WSQ1	1,000	5,000	-, 218	-1.088	-, 524	-1.309
WSQ2	1,000	5,000	-, 275	-1.374	-, 600	-1.501
WSQ3	1,000	5,000	-, 380	-1.900	-, 115	-, 288
WSQ4	1,000	5,000	-, 269	-1.346	-, 390	-, 975
WSQ5	1,000	5,000	-, 049	-, 245	-, 568	-1.421
CL1	1,000	5,000	-, 191	-, 953	-, 321	-, 803
CL2	1,000	5,000	-, 114	-, 568	-, 673	-1.682
CL3	1,000	5,000	-, 172	-, 862	-, 276	-, 690
CL4	1,000	5,000	-, 181	-, 903	-, 266	-, 665
CL5	1,000	5,000	-, 050	-, 250	-, 697	-1.743
CS1	1,000	5,000	-, 186	-, 930	-, 310	-, 776
CS2	1,000	5,000	-, 447	-2.236	-, 574	1,436
CS3	1,000	5,000	-, 489	-2.445	-, 394	-, 986
CS4	1,000	5,000	-, 215	-1.073	-, 025	-, 063
CS5	1,000	5,000	-, 504	-2.521	-, 172	-, 431
CS6	1,000	5,000	-, 555	-2.773	-, 251	-, 629
TAF1	1,000	5,000	-, 582	-2.912	-, 237	-, 593
TAF2	1,000	5,000	-, 976	-4.882	1,070	2,675
TAF3	1,000	5,000	-, 892	-4.462	1,149	2,872
TAF4	1,000	5,000	-, 376	-1.878	-, 067	-, 169
TAF5	1,000	5,000	-, 387	-1.937	-, 185	-, 463
TAF6	1,000	5,000	-, 760	-3.800	-, 434	1,085
multivariate					148.379	27.961

According to Table 3, almost all of the values of critical ratio of skewness are normally distributed. The value is between -2.58 to 2.58 except M1.1 (-2.773), X1.1 (-2.912), X1.2 (-4.882), X1.3 (-4.462), and X1.6 (-3.800). While the test for normality *multivariate* showed the value of skewness above the critical ratio of 2.58 is 27.961. It means that the multivariate distribution is not normal. It happened because of the data is derived from primary data which allow for a mixed response from any respondents.

Identification of the structural model can be assessed from the number of covariance and variance data compared with the number of parameters to be estimated. Output model are listed in Table 4. Table 4, showed the number of sample of $N = 150$, and number of covariance is 253, while the number of parameters to be estimated is 49. From these results, the degrees of freedom are $253 - 49 = 204$.

TABLE IV. IDENTIFICATION MODEL

Number of Distinct sample moments	253
Number of distinct parameters to be estimated	49
Degrees of freedom (253-49)	204

Minimum was Achieved

Chi-square= 477.858

Degrees of freedom = 204

probability level =, 000

The next process is analyzing the relationship between the indicator of variables which is indicated by the loading factor. The relationships are presented in Table 5.

TABLE V. THE RELATIONSHIP AMONG THE INDICATOR OF VARIABLES

			Estimate
CS	<---	TAF	.306
CS	<---	CS	.687
CL	<---	TAF	.450
CL	<---	CS	.124
CL	<---	CS	.462
TAF5	<---	TAF	.787
TAF4	<---	TAF	.780
TAF3	<---	TAF	.803
TAF2	<---	TAF	.788
CS1	<---	CS	.677
CS2	<---	CS	.628
CS3	<---	CS	.695
CS4	<---	CS	.788
CS5	<---	CS	.798
CS6	<---	CS	.765
CL5	<---	CL	.621
CL4	<---	CL	.906
CL3	<---	CL	.864
CL2	<---	CL	.740
CL1	<---	CL	.741
TAF1	<---	TAF	.685
WSQ5	<---	CS	.807
WSQ4	<---	CS	.749
WSQ3	<---	CS	.771
WSQ2	<---	CS	.722
WSQ1	<---	CS	.682
TAF6	<---	TAF	.619

Referring to Table 5, the numbers in the column of estimate shows the factor loadings of each indicator of the related variables. Acceptance of technology factors variable was measured by six indicators and all of the indicators have the loading factor above 0.5. Website service quality variable was measured by 5 indicators, and all of the five indicators have loading factors above 0.5 also. The mediating variable, customer satisfaction, has six indicators, and all of the indicators also has loading factors more than 0.5. Customer loyalty, the dependent measured, represented into 5 indicators. The loading factors of all customer loyalty indicators are above 0.5.

Results of Goodness of Fit showed in Table 6. The main objective of SEM analysis is to assess the goodness of fit, to determine to what extent the hypothesized model fit or match with the sample data.

TABLE VI. GOODNESS OF FIT TEST RESULTS

Goodness of fit index	Cut of value	The Result Model	Note
χ^2 -Chi-Square	Expected to be small with df = 204 is 238.32	477.858	Unfit
Probability	$\geq 0,050$	0,000	Marginal
CMIN / DF	$\leq 2,000$	2.342	Unfit
GFI	$\geq 0,900$	0,794	Unfit
RMSEA	$\leq 0,08$	0.095	Marginal
AGFI	$\geq 0,800$	0.744	Marginal
CFI	$\geq 0,900$	0.874	Marginal

Based on Table 6, results of goodness of fit test showed a fit model of structural equation modeling. This is indicated by the Probability (0,000), RMSEA (0.095), AGFI (0.744), CFI (0.874). While the value of CMIN / DF (2.342), GFI (0,794) were unfit.

In order to reduce the value of Chi Square to make the model fit, model modification was performed. Results of output modification indices are shown in Table 7.

TABLE VII. OUTPUT MODIFICATION INDICES

	MI	Par Change
FPT <-> KPW	46.847	, 272
E3 <-> E2	26.605	, 144

Based on Table 7, the changes on Chi Square if there is a relationship between the following variables: 1) If there is relationship between FPT and KPW, then the number Chi-Square will be decreased by 46.847, 2) If e3 to e2 are related each other, then the number Chi-Square will be decreased by 26.605.

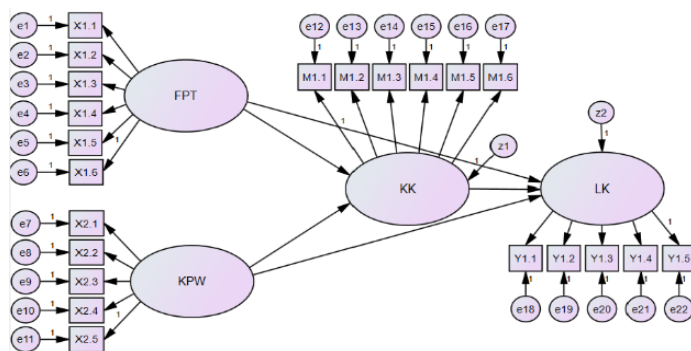


Fig. 3. Measurement models with SEM after modification.

The model after modification shown in Table 8.

TABLE VIII. GOODNESS OF FIT AFTER MODIFICATION

Goodness of fit index	Cut of value	The model results	Note
χ^2 -Chi-Square	Expected to be small with df = 202 is 236.15	384.262	Unfit
probability	$\geq 0,050$	0,000	marginal
CMIN / DF	$\leq 2,000$	1.902	Fit
GFI	$\geq 0,900$.820	marginal
RMSEA	$\leq 0,08$	0.078	Fit
AGFI	$\geq 0,800$.774	marginal
CFI	$\geq 0,900$	0.916	Fit

Based on the results of the calculation of the full model SEM in Table 8, the chi-square test of 238.32 is still above the chi-square table with 204 degrees of freedom at significance level of 5%. The probability value is still below but approaching fit criteria (marginal) i.e.: 0,000. Other criteria such as GFI and AGFI in a position close fit (marginal). CMIN / DF, RMSEA and CFI in Fit position. Referring to the principle of parsimony, if there are one or two criteria are met then the overall model can be perceived as well, so that the further analysis can be performed.

D. Hypothesis Testing

Results of hypothesis testing shown in Table 9.

TABLE IX. RELATIONSHIP BETWEEN VARIABLES

	estimate	SE	CR	.P	Note
TAF \rightarrow CL	.595	0.133	4.459	***	Significant
TAF \rightarrow CS	0.252	0.115	2.203	0.028	Significant
WQS \rightarrow CS	.500	0.093	5.368	***	Significant
WQS \rightarrow CL	0.045	0.100	0.455	.649	Not significant
CS \rightarrow CL	0.478	0.132	3.630	***	Significant

According to Table 9, the relationship between variables can be explained as follows. The relationship between technology acceptance factors on customer loyalty showed a significant effect on consumer loyalty. (0.595). This shows that the higher the technology acceptance factor, the higher the customer loyalty. Conversely, the lower the acceptance of the technology factor, the lower also consumer loyalty. That is, the better the acceptance of technology on OLX application by the consumer, will increase customer loyalty to OLX.

The relationship between the technology acceptance factors and customer satisfaction also significant based on test results that showed estimate 0.252. It means that technology acceptance factors have a positive effect on customer satisfaction. The higher the technology acceptance factor, the higher the customer satisfaction. Conversely, the lower the technology acceptance factor, then the lower the acquired customer satisfaction. That is, the better acceptance toward OLX application, the higher the satisfaction of OLX consumers.

Relationship between website service quality and customer satisfaction received support according to the test results with estimate of 0.500. It means that the website service quality has a positive effect on customer satisfaction. This shows that the higher the quality of service website, the higher the customer satisfaction. Conversely, the lower the website service quality, the lower the satisfaction of consumers. That is, the higher the website service quality provided by the OLX website, the higher the customer satisfaction toward OLX.

Relationship of website service quality and customer loyalty received any significant support. It means that website service quality did not significantly affect customer loyalty based on the results of estimate 0,045. While the relationship of customer satisfaction and customer loyalty received significant support with the magnitude of estimate is 0,478. This indicates that customer satisfaction has a significant effect on consumer

loyalty. That is, the higher the customer satisfaction toward the higher the customer loyalty toward OLX website.

VII. DISCUSSIONS

The first hypothesis (H1) about the effects of technology acceptance factors on consumer loyalty received support so that technology acceptance factor has positive and significant impact on customer loyalty. This finding support previous research of Lin and Sun, which states there is a significant positive relationship between the factors of acceptance of the technology on consumer loyalty [6]. Results of this study indicates the easier customer understand the technology, the higher customer loyalty. This might happen due to the easier customer could accept the existing technology then the more comfortable and enjoy they are in the using OLX applications and this will lead them to do repeat buying.

The second hypothesis (H2) dealing with the effects of technology acceptance factors on consumer satisfaction. Based on this research findings, the technology acceptance factors have a positive and significant influence on customer satisfaction. It implies that the easier a person accept the technology of OLX website the higher the satisfaction gained by the customer. The results of this study support the findings of Lin and Sun, which states the technology acceptance factors significantly influence consumer satisfaction [6].

The third hypothesis (H3) regarding the effects of website service quality on customer satisfaction, obtained significant support. This implies that website service quality influence customer satisfaction. This could happen as consumers are likely to feel satisfied when they feel well served either directly or indirectly. Thus, the results of this study support previous research findings conducted by Lin and Sun, which states the website service quality has a positive effect on customer satisfaction [6].

The fourth hypothesis (H4) investigate whether website service quality has significant positive effect on customer loyalty. Based on the test results showed that the website service quality does not have a significant influence on consumer loyalty. The results showed the better the website service quality provided by OLX website, do not affect the level of customer loyalty. This might happen because of consumers sometimes use several different online shopping applications other than OLX due to comparing websites to get lower prices products. Thus, the results of this study support previous research conducted by Chang and Wang which states that service quality website does not have a significant effect on customer loyalty [22].

The fifth hypothesis (H5) which investigated the effects of customer satisfaction on customer loyalty received support. Results showed that customer satisfaction have significant effects on customer loyalty. This could happen because of when someone is satisfied with online shopping application, then it is possible for someone to be loyal as she/he will re-use the application in the future. Thus, this study supports previous research conducted by Lin and Sun which states that customer satisfaction has a significant effect on customer loyalty [6].

VIII. CONCLUSION, LIMITATIONS, AND SUGGESTION FOR FUTURE RESEARCH

Results of this study showed that technology acceptance factors have significant effects on consumer loyalty, so that hypothesis 1, received support. Technology acceptance factors itself, affects customer's satisfaction, so that hypothesis 2 received support. The second independent variable, website service quality, on the effect to customer satisfaction also found to have significant effect. This implies that the third hypothesis is supported. Meanwhile, the impact of website service quality on customer loyalty, do not receive significant support, so that H4 is not supported. However, the fifth hypothesis (H5), about the influence of customer satisfaction on consumer loyalty, received significant support so that H5 is supported.

This research has several limitations, regarding the limited research area that only covered limited area of Yogyakarta so that future research needs to extend the coverage data collection in order to improve the generalize ability of the research findings. Another limitation is regarding the variables used in the model, which is only considering two variables, i.e.: acceptance of the technology and service quality websites. The future research can consider more variables such as consumers' trust and cost-benefit considerations so that the developed model can give better explanation to the phenomena.

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