

The Role of Perceived Usability, Satisfaction, and Customer Trust in Design and Developing User Loyalty Edutech Website

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The Role of Perceived Usability, Satisfaction, and Customer Trust in Design and Developing User Loyalty Edutech Website

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Abstract: This research aims to find out how perceived usability, satisfaction, and customer trust play a role in developing user loyalty on the Ruangguru edutech startup website. The data collection method will be used to distribute surveys through questionnaires to 106 respondents consisting of Ruangguru users, namely junior high school students. High school students have thrice used Ruangguru's services and opened the Ruangguru website. This study uses statistical techniques, partially least square structural equation modeling (PLS-SEM), in the data analysis process to determine the significance level of the relationship between research variables. Based on the research, it was found that there is a significant effect of perceived usability on customer trust, satisfaction, and customer loyalty, as well as perceived usability and satisfaction on customer loyalty. In contrast, customer trust does not significantly impact customer loyalty on website edutech. It can be concluded that to increase website users' loyalty, edutech startups need to pay attention to the perceived usability and satisfaction of their website users.

Keywords: perceived usability, satisfaction, customer trust, customer loyalty, startup, edutech.

A. INTRODUCTION

Edutech startups in Indonesia are starting to be seen by various parties in the world. This information can be found based on the ranking of Indonesian edutech startups on the startup ranking website. According to the website, the highest-ranking edutech startup is owned by

Ruangguru, followed by Neliti, Duniaikom, Eduka System, Wardya College, and several other startups. The ranking uses the startup rank (SR) value which is calculated based on several factors, from the importance of a startup on the Internet and the social influence of the startup. Based on these data, Ruangguru will be used as the object of this research.

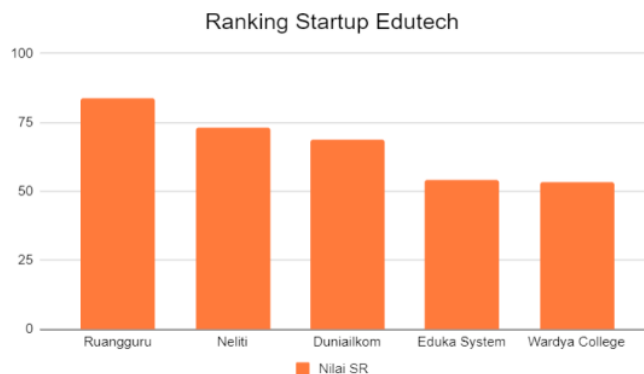


Figure 1 Edutech Indonesia Startup Ranking (Startup Ranking, 2018)

As one of the startup companies engaged in education, Ruangguru has a mission to provide and disseminate quality education to all students, regardless of place and time, using technology. In achieving this mission, Ruangguru has issued several expected innovations to help users. In the second semester of 2020, Ruangguru issued some innovations, such as the flash concept in preparing for the computer-based written examination. Users can print questions in the question bank, live teaching conducted by some teachers daily, and animated videos on character education (Damaledo, 2020). There is an increase in the number of users from year to year due to the products, services, and innovations developed by Ruangguru. There has been an increase in new Ruangguru users by seven million from the end of 2019 to the end of 2020, so the total number of Ruangguru users in Indonesia reached more than 22 million in December 2020 (Damar, 2021).

On the other hand, there are still several shortcomings in Ruangguru's services. Based on research on the assessment of the quality of the Ruangguru application on user satisfaction using the end-user computing satisfaction (EUCS) and critical performance analysis (IPA) methods, it was found that respondents were dissatisfied with the content, accuracy, format, ease of use, and timeline of the Ruangguru application (Yazid, Wijoyo, & Rokhmawati, 2019). In addition, in terms of service, there are several shortcomings and problems faced by the Ruangguru company, one of these shortcomings is that although it has received cooperation with the government and has 22 million users, Ruangguru's valuation is not enough to achieve Unicorn. In addition, there are new problems faced by companies regarding government programs and internship programs.

These problems will have an impact on the trust of Ruangguru users; with the decreasing trust of Ruangguru users, there is a possibility that user loyalty will decrease. This information is supported by several previous studies below, which state that trust impacts user loyalty. When creating website services, startups need to pay attention to several factors. Perceived usability, satisfaction, and trust have an essential role in the loyalty of a website; where based on perceived usability, consumers will use the product offered if they can feel the benefits derived from the product (Flavia'n, Guinaly'u, & Gurrea, 2006). Trust is another factor that affects the success of a website's services. Although there are many advantages, the lack of trust in the system for its users can be a potential barrier to existing innovation (Trihutama, 2017).

Based on the problems above, this research was conducted to find out how perceived usability, satisfaction, and customer trust play a role in developing user loyalty on the Ruangguru edutech startup website. It is hoped that this research can produce solutions to increase the loyalty of edutech website users.

1. Perceived Usability

Perceived usability is things like past experiences or emotional situations that shape how you interact with the world around you and whatever system you use (Maniataki, 2020). According to Flavia'n, Guinaly'u, & Gurrea, who guide this research, several important indicators of perceived usability exist. Several indicators are used to measure perceived usability: ease of use, comfort when using, straightforward design, and easy orientation to the application (Oyibo & Vassileva, 2020). The indicators of perceived usability used are ease of understanding, easy to use, easy to find infor-

mation, structure, and content that is easy to understand, ease of movement, neatness of content, ease of navigation, and download speed (Flavia'n, Guinalý'u, & Gurrea, 2006).

2. Customer Trust

User trust is the readiness of a party to accept risk from another party according to the hope and trust that the other party will act as expected, even though the two parties do not know each other (Lutfi, 2020). Building trust in long-term customer relationships is essential to customer loyalty (Muttaqiin, Rasyid, & Candraningrat, 2021). Service quality and perceived benefits of a service are two factors that affect user trust (Reza Haikal Hakim, 2017). According to Flavia'n, Guinalý'u, & Gurrea as the guide for this research, there are several important indicators of customer trust. Customer trust indicators used are fulfilling commitments, sincere and honest information, trusting promises made, no false statements, known to be honest and transparent, made for mutual benefit, paying attention to user interests, taking into account the impact on users, and not intentionally harming users, offering the website considers user needs, accepts user needs, has capabilities, marketing products, and services, has resources, and knows users (Flavia'n, Guinalý'u, & Gurrea, 2006)

3. Satisfaction

Satisfaction is felt when buying and continuously using products or services following customer expectations, desires, and needs (Sabila, 2020). User value, quality of goods/services, and service quality affect user satisfaction (Putri & Astuti, 2017). According to Flavia'n, Guinalý'u, & Gurrea, who guide this research, there are several important indicators

of satisfaction. Satisfaction indicators are decision-making accuracy, overall user satisfaction, user satisfaction in transactions, and user satisfaction with services (Flavia'n, Guinalý'u, & Gurrea, 2006).

4. Customer Loyalty

Visitor loyalty is a behavior that arises as a reaction to things that result in the visitor's desire to be able to visit again (Aliffianto, Candraningrat, & Wibowo, 2018). If a product can meet customer expectations, then the product will create customer loyalty (Minawati, 2017). According to Flavia'n, Guinalý'u, & Gurrea as the guide for this research, there are several important indicators of customer loyalty. Indicators of customer loyalty are the number of website visits, websites for purchasing products, favorites in purchasing products, the number of visits to other websites within a distance of one month, the number of visits to other websites, and the desire for transactions on other websites (Flavia'n, Guinalý'u, & Gurrea, 2006).

5. Partial Least Square

As part of the statistical method of structural equation modeling (SEM) based on variance, partial least squares (PLS) were created to handle multiple regression when specific problems arise in the data, such as data loss, small sample size, and multicollinearity (Nurani, 2015). SEM modeling will provide dimensional answers to research questions (Adianita, Mujanah, & Candraningrat, 2017). The analysis process will use the SEM technique with the PLS type to find the relationship between variables with the help of the WarpPLS trial seven application. The most appropriate nonlinearity, then the nonlinear function, is used to predict the path coefficient to consider nonlinearity (Kock, 2019).

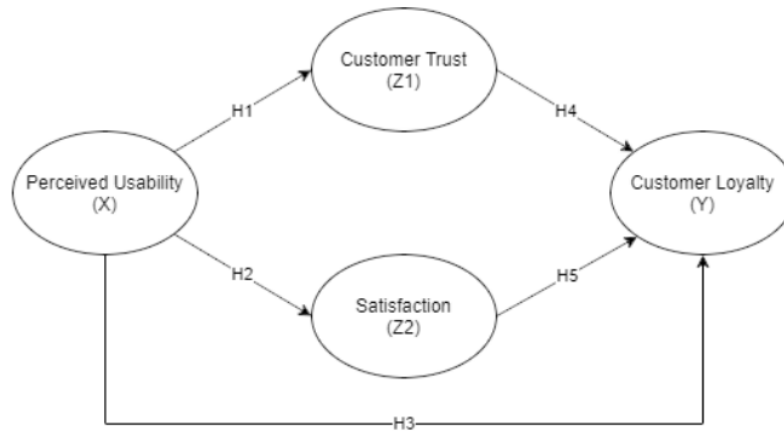


Figure 2 Research Conceptual Framework

The outer model is a model that determines the character of the relationship among latent variables and their indicators (Candraningrat, 2020). The outer model's purpose is to find a model's reliability and validity (Amiyantho, Wulandari, & Wardhanie, 2019). The outer model test will use reflection based on convergent validity, discriminant validity, composite reliability, average variance extracted (AVE), and cronbach alpha (Usada, Hakim, & Kurniawati, 2016).

An inner model is a model that forms a relationship between variables that are influenced by other latent variables in the model (endogenous variables) with variables that are influenced by other latent variables outside the model (exogenous variables) (Rodliyah, 2016). Several statistical measures are needed to evaluate the inner model, namely R2, Q2 predictive relevance, and goodness of fit (GoF) Index (Putri G. R., 2017). The goodness of fit test of the statistical model describes how well the model fits a series of observations (Maryam, Somayasa, Ruslan, Gubu, & Jufra, 2022). Whether the proposed hypothesis is accepted or rejected can be found from its significance level (p-value) (Irfandy, Wardhanie, & Candraningrat, 2022). Generally, the p-value will

be compared with a certain level of significance, normally = 5% or 0.05 (Hakim, 2018). According to the statement, this research will use a significance level of 5% from the existing hypothesis.

6. Conceptual Framework

The conceptual framework is the relationship between one theory and another used as a guide when systematically compiling research and assisting in the research process (Ariyanto, 2018). Figure 2 below is the conceptual framework of the research conducted.

7. Hypothesis

Hypotheses are quick answers/conclusions made in response to the problems posed in research to be tested empirically (Utari, 2017). Based on the previous definition, it can be summarized that the hypothesis is a statement that is the reason why the research is carried out, which will then be tested for truth. This study will use the following hypotheses:

H1: The user's perceived website usability positively impacts customer trust in the Ruang-guru website.

- H2: The user's perceived usability of the website positively impacts satisfaction with the Ruangguru website.
- H3: The user's perceived website usability positively impacts customer loyalty to the Ruangguru website.
- H4: Website customer trust perceived by users positively impacts customer loyalty to the Ruangguru website.
- H5: Website satisfaction felt by users has a positive impact on customer loyalty to the Ruangguru website.

Hypotheses 1 to 5 were developed based on research conducted by Flavia'n, Guinaly'u, and Gurrea (2006).

B. RESEARCH METHOD

They are collecting data in this study using literature study and observation. Literature studies were conducted through journals, books, and website searches through Google using the keywords Perceived usability, customer trust, satisfaction, and customer loyalty. Research observations will use questionnaires distributed to Ruangguru users as primary data, while previous research will be used as secondary data.

The population of this study consisted of 22 million Ruangguru users, with a sample of 106 respondents in the form of Ruangguru users in the city of Surabaya who had used the Ruangguru service and opened the Ruangguru website at least three times. The questionnaire distributed to the respondents contained questions related to the indicators of this research variable.

After the data is collected following the number of samples, the data analysis process will be carried out using the SEM technique with the PLS type to find the relationship between variables with the help of the WarpPLS trial application 7.

The variables to be processed in this study consist of the independent variable (X) in the form of perceived usability. The moderating variable (Z) is customer trust and satisfaction, while the dependent variable (Y) is customer loyalty.

C. RESULT AND DISCUSSION

1. Respondent Character

Characteristic data were obtained through distributed questionnaires and the questions used to perform PLS analysis. The data will be grouped based on several criteria, including age, gender, education, and the number of website users. It can be seen in Table 1 that most of the respondents consist of women aged 12–15 years and currently studying in junior high school.

Table 1 Respondent Character

Criteria	Quantity
Age	106
12 - 15 years	89
16 - 18 years	15
Over 18 years old	2
Gender	106
Male	25
Female	81
Education	106
Junior High School	89
Senior High School	16
Vocational High School	1

2. Partial Least Squares Analysis

The analysis process will be carried out by testing the outer model, inner model, and hypothesis. In one of the outer model tests, namely the loading factor test in Table 2, it was found that 3 of the 33 indicators did not reach the minimum criteria of 0.4 in the loading factor test, so the indicator would be discarded in the following process.

Table 2 Loading Factor Test Results

Variable	Indicator	
	Valid	Invalid
Perceived usability (X)	8	0
Customer trust (Z1)	13	2 (Z1.4, Z1.9)
Satisfaction (Z2)	4	0
Customer loyalty	5	1 (Y1.6)

Then a cross-loading test was carried out on the valid indicators from the previous test results. Based on the results of cross-loading in Table 3, it was found that all indicators were under the criteria, namely more significant than other constructs.

Table 3 Cross Loading Test Results

	X	Z1	Z2	Y
X1.1	0.732	-0.27	0.091	-0.042
X1.2	0.785	0.077	-0.241	0.05
X1.3	0.702	-0.151	0.276	-0.121
X1.4	0.775	0.033	0.183	-0.052
X1.5	0.681	0.073	-0.19	0.107
X1.6	0.693	0.066	-0.14	-0.012
X1.7	0.663	0.009	-0.019	0.037
X1.8	0.671	0.173	0.038	0.041
Z1.1	0.136	0.749	0.023	0.263
Z1.2	0.062	0.805	-0.239	0.13
Z1.3	0.096	0.752	0.216	0.146
Z1.5	-0.057	0.796	-0.1	0.078
Z1.6	-0.114	0.727	-0.33	0.038
Z1.7	0.033	0.775	-0.151	-0.106
Z1.8	-0.238	0.586	0.269	0.045
Z1.10	-0.097	0.79	0.127	-0.036
Z1.11	0.006	0.828	0	-0.219
Z1.12	0.032	0.813	-0.003	-0.118
Z1.13	0.011	0.807	-0.003	-0.045
Z1.14	0.041	0.789	0.129	-0.169
Z1.15	0.027	0.827	0.113	0.035
Z2.1	-0.001	0.156	0.869	-0.074
Z2.2	-0.058	0.145	0.922	-0.092
Z2.3	0.038	-0.259	0.753	0.162
Z2.4	0.029	-0.082	0.904	0.031
Y1.1	-0.045	-0.051	0.077	0.808
Y1.2	0.128	-0.296	0.409	0.814
Y1.3	0.204	-0.076	0.137	0.857
Y1.4	-0.156	0.073	-0.118	0.766
Y1.5	-0.193	0.458	-0.664	0.635

Based on the process of testing composite reliability and Cronbach alpha in Table 4, the composite reliability value of all variables above the minimum criteria (0.7) and reliability 3 of 4 variables is substantial, and the reliability of the customer trust variable (Z1) is perfect. In addition, it can be seen that the average variance extracted from all variables is above the minimum criteria (0.5). So it can be seen that the research model is valid and reliable.

Table 4 Composite Reliability, Cronbach Alpha, and AVE Test Results

Variable	Composite Reliability	Cronbach Alpha	AVE
X	0.892	0.892	0.510
Z1	0.951	0.951	0.601
Z2	0.922	0.922	0.748
Y	0.885	0.885	0.608

Then testing the inner model, where based on the data that can be seen in Table 5, it can be seen that based on the results of the R2 test, the customer trust variable can be influenced by perceived usability by 41.4% and 58.6% is the influence of other factors from outside the model. In comparison, satisfaction can be affected by perceived usability by 27.8%, and 72.2% is the influence of other factors from outside the model. Loyalty can be influenced by perceived usability, satisfaction, and customer trust by 33.4%, and 66.6% influence other factors outside the model. Based on the results of the Q2 test in the table, it can be seen that customer trust has the highest predictive relevance when compared to loyalty and satisfaction as the variables with the lowest predictive relevance.

Table 5 R-square and Q-square Test Results

Variable	R ²	Q ²
Customer trust (Z1)	0.414	0.422
Satisfaction (Z2)	0.278	0.276
Loyalty (Y)	0.334	0.331

4 Based on Table 6, it can be seen that the goodness of fit index can be accepted because it has met all the criteria.

Table 6 Goodness of Fit Test Results

Index	Score	Criteria
APC	<0.001	p<0.05
ARS	<0.001	p<0.05
AARS	<0.001	p<0.05
AVIF	2.327	Received AVIF ≤ 5, Ideal AVIF ≤ 3.3
AFVIF	2.090	Accepted AFVIF ≤ 5, Ideal AFVIF ≤ 3.3
Tenenhaus GoF	0.459	Small ≥ 0.1, Medium ≥ 0.25, Large ≥ 0.36
SPR	1.000	Received SPR ≥ 0.7, Ideal SPR ≥ 1
RSCR	1.000	Accepted RSCR ≥ 0.9, Ideal RSCR ≥ 1
SSR	1.000	Accepted SSR ≥ 0.7
NLBCDR	1.000	Accepted NLBCDR ≥ 0.7

Using the direct effect variable, hypothesis testing was conducted to determine the relationship between the dependent and independent variables. The results of the effect size can be seen in Figure 3.

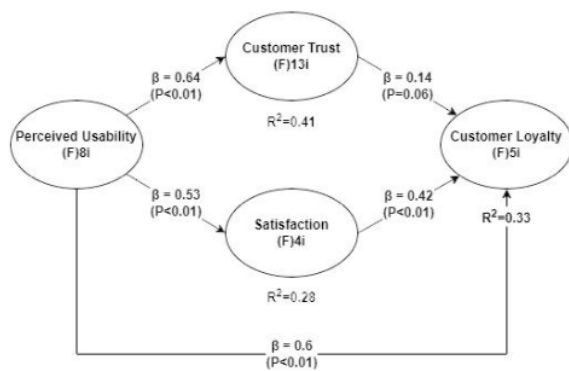


Figure 3 Effect Size

Table 7 Direct Effect Results

Criteria	Variable	X	Z1	Z2	Y
Path Coefficient	X	-	-	-	-
	Z1	0.643	-	-	-
	Z2	0.527	-	-	-
	Y	0.373	0.145	0.424	-
p-value	X	-	-	-	-
	Z1	<0.001	-	-	-
	Z2	<0.001	-	-	-
	Y	<0.001	0.061	<0.001	-

According to the results of hypothesis testing from Table 7, it can be concluded:

Table 8 Hypothesis Result

Hypothesis	Path coef	P-value	Result
Hypothesis 1	Positive	Bellow 0.05	Accepted
Hypothesis 2	Positive	Bellow 0.05	Accepted
Hypothesis 3	Positive	Bellow 0.05	Accepted
Hypothesis 4	Positive	Above 0.05	Rejected
Hypothesis 5	Positive	Bellow 0.05	Accepted

H1: Perceived usability of the website that users perceive positively impacts customer trust in the Ruangguru website.

Based on the hypothesis test, the perceived usefulness variable (X) has a favorable path coefficient value (0.643) and a smaller p-value (<0.001) compared to the criteria (<0.05) on the customer trust variable (Z1), so H1 is accepted.

Perceived usability has a favorable path coefficient value and p-value according to the provisions, so it has a significant and positive effect on customer trust. These results are also from research conducted by (Flavián, Guinaly, & Gurrea, 2006) which found that consumer trust depends directly and positively on perceived us-

ability. Based on the results of this study, it was found that the advantages of the Ruangguru website are that it is easy to use even for first-time users, and the Ruangguru website can accept and respond to the needs of its users.

On the other hand, weaknesses were found on the Ruangguru website, including that it was not easy to navigate. Thus, it can be concluded that the perceived usability of a good edutech website is influenced by how easily the website can be used and how much the edutech website can accept and respond to the needs of its users. Ease of use and navigation is part of the three website criteria (site design, site functionality, and customer value). According to Richardus Eko (2012), navigation on the website is a sub-criteria in shaping the website's design, while ease of use is part of the functionality of a website. In addition, the website does not consider the impact their actions can have on consumers, where several respondents stated that the price offered by Ruangguru's services is higher than the services provided. Based on the results of the analysis above, Ruangguru needs to make improvements to these two weaknesses.

H2: Perceived usability of the website by users has a positive impact on satisfaction with the Ruangguru website.

Based on Table 8, the perceived usefulness variable (X) has a positive path coefficient value (0.527) and a smaller p-value (<0.001) than the criterion (<0.05) on the satisfaction variable (Z1), so H2 is accepted.

Perceived usability has a positive path coefficient value and p-value according to the provisions, so it has a significant and positive effect on satisfaction. These results also follow research conducted by (Flavia'n, Guinaly'u, & Gurrea, 2006) which found that consumer sat-

isfaction depends directly and positively on perceived usability. Based on the results of this study, it was found that the advantages of the Ruangguru website are that it is easy to use, even for users who are using it for the first time. The experience that users have with the Ruangguru website is satisfactory.

On the other hand, it was found that the weakness of the Ruangguru website was that it was not easy to navigate. Ease of use and navigation is part of the three website criteria (site design, site functionality, and customer value). According to Richardus Eko (2012), navigation on the website is a sub-criteria in shaping the website's design, while ease of use is part of the functionality of a website. In addition, users are not satisfied with how Ruangguru makes transactions on its website. Based on the results of the analysis above, Ruangguru needs to make improvements to these two weaknesses. Thus, it can be concluded that the perceived usability of a good edutech website is influenced by how easy it is to use the website and overall user satisfaction.

H3: Perceived usability of the website perceived by users positively impacts customer loyalty to the Ruangguru website.

Based on Table 8, the perceived usefulness variable (X) has a positive path coefficient value (0.373), and the p-value is smaller (<0.001) than the criteria (<0.05) for the customer loyalty variable (Y), so H3 is accepted.

Perceived usability has a positive path coefficient value and p-value according to the provisions, so it has a significant and positive effect on customer loyalty. These results differ from those of research conducted by (Flavia'n, Guinaly'u, & Gurrea, 2006), which found that perceived usability had no significant effect on

³ customer loyalty. Based on the results of this study, it was found that the advantages of the Ruangguru website are that it is easy to use even for users who are using it for the first time and the Ruangguru website is the user's favorite website to buy educational products and services.

On the other hand, it was found that the weakness of the Ruangguru website was that it was not easy to navigate. Ease of use and navigation is part of the three website criteria (site design, site functionality, and customer value). According to Richardus Eko (2012), navigation on the website is a sub-criteria in shaping the website's design, while ease of use is part of the functionality of a website. In addition, the number of user visits on other edutech websites that offer similar products and services is higher, one of which is Brainly which offers a question-and-answer submission service similar to the Roboguru service. When compared based on website information (www.similarweb.com), the number of visitors to the Brainly website is much higher (89 million) than compared to the Ruangguru website (19 million). Based on the results of the analysis above, Ruangguru needs to make improvements to these two weaknesses. Thus, it can be concluded that the perceived usability of a good edutech website is influenced by the ease with which it is used, even for users who first open it.

H4: Website customer trust perceived by users positively impacts customer loyalty on the Ruangguru website.

Based on Table 8, the customer trust variable (Z1) has a positive path coefficient value (0.145), and the p-value is more significant (0.061) than the criteria (<0.05) on the customer loyalty variable (Y), so H4 is rejected.

Customer trust has a positive path coefficient value and a p-value above the provisions, so it has a positive but insignificant effect on customer loyalty. These results differ from those of research conducted by (Flavia 'n, Guinaly 'u, & Gurrea, 2006), which found that customers ⁴us significantly impacted customer loyalty. Based on the research results, it is known that the level of consumer trust in the website does not affect loyalty because the Ruangguru website does not take into account the impact that its actions can have on consumers, where some respondents stated that the price offered by Ruangguru's services is higher when compared to the services provided. In addition, the number of user visits to other edutech websites that offer similar products and services is higher. One such website, Brainly, offers a question-and-answer submission service similar to the Roboguru service. When compared based on website information (www.similarweb.com), the number of visitors to the Brainly website is much higher (89 million) than compared to the Ruangguru website (19 million). Thus, it can be concluded that the edutech website's customer loyalty is not too influenced by considering the impact their actions can have on consumers. Based on the results of the analysis above, Ruangguru needs to make improvements to these two weaknesses.

H5: Website satisfaction perceived by users positively impacts customer loyalty to the Ruangguru website.

Based on Table 8, the satisfaction variable (Z2) has a positive path coefficient value (0.424), and the p-value is smaller (<0.001) than the criteria (<0.05) for the customer loyalty variable (Y), so H5 is accepted.

3
Based on the results of this study, it was found that the advantages of the Ruangguru website are that the user experience with the Ruangguru website is satisfactory, and the Ruangguru website is the user's favorite website for purchasing educational products and services. Satisfaction has a favorable path coefficient value and p-value according to the provisions, so it significantly and positively affects customer loyalty. These results are also consistent with research conducted by (Flavia'n, Guinaly'u, & Gurrea, 2006), which found that satisfaction significantly impacts website loyalty.

On the other hand, it was found that the weakness of the Ruangguru website is that users are not satisfied with the way Ruangguru makes transactions on its website. Then the number of user visits on other edutech websites that offer similar products and services is higher. One such website, Brainly, offers a question-and-answer submission service similar to the Roboguru service. When compared based on website information (www.similarweb.com), the number of visitors to the Brainly website is much higher (89 million) than compared to the Ruangguru website (19 million). Based on the results of the analysis above, Ruangguru needs to make improvements to these two weaknesses. Thus it can be concluded that the level of satisfaction with a good edutech website is influenced by how satisfied the user experience is when using the edutech website.

D. CONCLUSION

Based on the analysis produced by PLS-SEM, it can be found that 4 out of 5 research hypotheses can be accepted. Based on this analysis, it can be concluded that in order for per-

ceived usability to create satisfaction and customer trust in developing customer loyalty websites, the indicator that needs to be considered is the ease of use of the website, even for users who are accessing the website for the first time. The website must be able to accommodate all needs. For users with these criteria, a website can create a satisfying user experience, especially for female junior high school students aged 12 to 15 years, and ultimately become a favorite platform for purchasing products and services in the field of education.

On the other hand, customer trust does not affect the development of customer loyalty for edutech website users. It was found that the Ruangguru website did not consider the impact their actions could have on users. Some respondents stated that the price offered by Ruangguru's services was higher than those provided. In addition, Ruangguru users still open other edutech websites, one of which is Brainly which offers a question-and-answer submission service similar to the Roboguru service. When compared based on website information (www.similarweb.com), the number of visitors to the Brainly website is much higher (89 million) than compared to the Ruangguru website (19 million).

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