

# Developing E-Commerce Success Model by Measuring Website Quality of Indonesian MSMEs

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**Abstract**—E-commerce is a result of technology utilization that transforms the traditional technique of business into the digital one. This phenomenon also happens in MSMEs in Indonesia, which has the most significant contribution to the Indonesian Gross Domestic Product. Among e-commerce platforms, website is the main platform that could form competitive advantages, and it is one of the factors that could determine e-commerce success. This study aimed the effect of website quality on the e-commerce success of MSMEs in Indonesia based on the managers' perspective and this study provide e-commerce success model developed based on the analysis result. This study used convenience sampling method with up to 103 respondents. The respondents in this study are managers of MSMEs in Indonesia that have website e-commerce. This study used Partial Least Square-Structural Equation Modelling (PLS-SEM) to process its data. Based on the results and discussion in this study, it can be concluded that website quality has a significant indirect effect on e-commerce success, where the effect is through intervening variables, which are website use and use satisfaction. Website quality variables that have the most significant influence on e-commerce success are information quality, promotion quality, and system quality. Meanwhile, service quality and design quality have no significant effect. MSMEs in Indonesia can focus on improving the quality of information, promotion, and system on website.

**Keywords:** *e-commerce, e-commerce success, website quality, MSMEs*

## I. INTRODUCTION

The development of information system technology in recent years has got into Industry 4.0 era along with Internet of Things (IoT) trend, where all of the activities can be done automatically through digital devices. The transformation of technology causes the increase of internet users significantly, and as per January 2019, it reaches 4.38 billion internet users [1]. The digital era also influences the current condition and trend in several aspects, including academic, medical, banking, government, and business.

The utilization of internet technology is defined as an innovative way to do a global business that has several competitive advantages [2]. The expansion of internet use on business proved its ability to increase e-commerce sales in Indonesia. E-commerce or electronic commerce is a process of trading goods and services through digital devices and internet network. Indonesia had continuously increase goods and service sales through e-commerce and also become a country with the highest e-commerce sales among the other five countries with the biggest market in Southeast Asia 2014-2018 [3], [4]. Along with a big e-commerce market opportunity in Indonesia, the government has held a program

called 'MSMEs GO DIGITAL'. The program is held because of MSMEs' significant contributions to GDP comparing to the big enterprises.

There are several platforms to operate e-commerce as an electronic trading process, such as website, mobile application, and social media [5]. Website is one of e-commerce platforms that could form competitive advantages [6]. Website can be accessed every time and everywhere, has an integrated database, and could reach a wider market, either it's local, national, or international. Other than that, website gives its complete control to the managers on daily operations. Website also recaps each activity in it, which could be a decision support system to managers. Website existence is important for international trade in order to reach a wider market. MSMEs who has website have higher export sales than MSMEs who has not [7]. Having a website could obtain a bigger benefit on increasing marketing export capabilities and could form sustainable competitive advantages [8], [9].

The key determinants of e-commerce success are not merely a web presence or low price but delivering on a high-quality website [10]. According to Nielsen [11], good website quality criteria are those who have short loading time, understandable content, consistent design, and user-friendly interface. Barnes and Vidgen [12] also state that a good website quality prioritizes three main aspects, that is usability, information, and service interaction. Website quality is confirmed that it influences significantly on increasing trust and user satisfaction, as a result, website quality could increase customer loyalty [13]. Being considered as the antecedent of customer-relations quality, website quality influence purchase intentions that could increase sales [14]. According to Chang et al. [15], managers should not ignore the importance of website quality development because of its influence on increasing users' trust.

DeLone and McLean [16] formulate a model called Information System Success Model that could measure the quality of website and its effect on e-commerce success. According to Ghandour et al. [17], the model had already been used in previous research which lots of them took the customer perspective. Therefore, Ghandour et al. [17] did an empirical study regarding the measurement of website quality based on MSMEs managers' perspective and added two variables that could measure website quality, which is design quality and promotional quality.

Moreover, this study conducted to measure website quality and its effect on the e-commerce success of MSMEs

in Indonesia. Also, authors develop e-commerce success model in the end based on the result conducted in this study. The renewal of this study comparing to the previous researches is the addition of two website quality variables from study Ghandour et al. [17] on DeLone and McLean's [16] model. Those variables are examined comprehensively as a model. Other than that, the variables of website quality in this study are measured based on MSMEs managers' perspective, which is rarely done in Indonesia. MSMEs who have the highest contributions to Indonesian GDP should take a further step in order to increase their competitive advantages. One of the ways is by measuring website quality that could be a benchmark on developing further strategies, not only strategy on efficient resource allocation, but also impact evaluation of the company's profitability which is the main determinant of e-commerce success. Therefore, authors believe that the results of this study could help e-commerce companies especially MSMEs in Indonesia implement or execute the best strategy intended to a better website quality, which could increase e-commerce success and form competitive advantages compared to their competitors.

## II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

McLeod and Schell [18] define e-commerce or electronic commerce as goods and services trading process which be conducted across companies through internet access, computer-based system, and web browser interface. O'Brien and Marakas [19] stated that e-commerce is more than buy and sell products online. E-commerce includes a whole process in it, from development, marketing, selling, delivery, customer service, and payment for several goods and services. For example, e-commerce also includes a business process where there are extranet access to inventory database by customer and supplier, intranet access for the customer-relations management system, and involve customer on product development by e-mail.

There are three main categories of e-commerce which is often used by companies, according to O'Brien and Marakas [19], which are:

- Business-to-Business involves e-business market and relations between companies; in this case, are a big customer and its supplier.
- Business-to-Customer require companies to develop their market on their own to the potential customer through interactive marketing.
- Customer-to-Customer provides auction-web which could form a new market.

### A. Website E-Commerce

Website is a set of web pages that consists of data information in the form of text, picture, animation, video as well as the combination of it. Website is managed by an individual or organization. Therefore, an e-commerce website is a set of web pages that consist of data information which is managed by a company in order to do buy and sell process through internet network.

According to Ghandour et al. [17], website quality is not something that could be measured in a limited perspective, but it also must be measured from the point of view of companies' managers in order to increase the operational accountability of its business. This study split website quality variable into several dimension, which is information quality,

system quality, service quality, design quality, and promotional quality.

### B. E-Commerce Success

E-commerce success is defined as a net benefit by DeLone and McLean [16], the net benefit is measured to what extent that information system or in this study is website could contribute on e-commerce success in the point of view of several stakeholders. The net benefit includes four parts, which are an individual benefit (increase customer knowledge and experience), group benefit (increase the effectiveness of team sales), organizational benefit (increase the company's competitive advantage), and industry benefit (increase the efficiency of the supply chain).

This study adopted a measurement model of website quality by DeLone and McLean [16] and added two dimensions of website quality from Ghandour et al. [17] study. Therefore, this study consists of five independent variables, two intervening variables, and one dependent variable to measure website quality and its effect on e-commerce success. All the variables in this studies are as follow:

- Information Quality is related to all of the contents on website, either it's information details of goods and services which is offered or information that could be used by managers as a benchmark, such as sales statistics.
- System Quality could indirectly reflect how good or bad the performance of e-commerce.
- Service Quality represents the quality of support that management gives to the customers.
- Design Quality as something that has no formula, but still has to consistent with the whole brand of its business.
- Promotional Quality includes aspects that could be communicated to customers about goods and services that the company offers.
- Website Use is a portrait of how a website could be used as much as possible by its users.
- Use Satisfaction includes users' satisfaction while using or doing activities through website.
- E-Commerce Success in this study is a net benefit. It measures how e-commerce could give a positive or negative impact in a balanced way for the company, customers, suppliers, employees, organization, market, industry, economy and also the environment. This study is focused on the organizational benefit that could be measured by sales rate, profit rate, customer loyalty, and global market reach in order to form a competitive advantage.

### C. Website Quality on Website Use

Studies regarding website quality had been conducted in several countries, either it was based on the managers' perspective or customers' perspective. Previous research by Lee and Kozar [20] which adopted DeLone and McLean's [16] model showed correlations between website quality and website use. Moreover, previous research which is conducted in Indonesia by Pujani et al. [6] stated that website quality influences positively in website use. Therefore, website

quality includes information, system, service, design, and promotional quality is a vital factor that could trigger users to do activities through website [6].

- H1<sub>1</sub>** : Information Quality has a significant influence on Website Use positively
- H1<sub>2</sub>** : System Quality has a significant influence on Website Use positively
- H1<sub>3</sub>** : Service Quality has a significant influence on Website Use positively
- H1<sub>4</sub>** : Design Quality has a significant influence on Website Use positively
- H1<sub>5</sub>** : Promotional Quality has a significant influence on Website Use positively

*D. Website Quality on Use Satisfaction*

Lee and Kozar [20] research showed that there is a correlation between website quality and use satisfaction. Website quality includes information, system, service, design, and promotional quality have an important role in order to increase use satisfaction [6]. This statement proved through their previous research conducted in Indonesia and the results showed that website quality has a significant influence on use satisfaction positively.

- H1<sub>6</sub>** : Information Quality has a significant influence on Use Satisfaction positively
- H1<sub>7</sub>** : System Quality has a significant influence on Use Satisfaction positively
- H1<sub>8</sub>** : Service Quality has a significant influence on Use Satisfaction positively
- H1<sub>9</sub>** : Design Quality has a significant influence on Use Satisfaction positively
- H1<sub>10</sub>** : Promotional Quality has a significant influence on Use Satisfaction positively

*E. Website Quality on E-Commerce Success*

Website quality measurement model by Barnes and Vidgen [12] considers the quality of information, system, and services as the main factors. Other than that, the e-commerce success model by DeLone and McLean [16] also consider the quality of information, system, and services as the main factors on measuring the quality of information system. Moreover, the results of the research by Palmer [21] showed that there is a high correlation between the quality of information, system, and service on e-commerce success. Iskandar [22] conducted research in one of the biggest e-commerce in Indonesia and the results showed that service quality has a significant influence on customer loyalty which is one of the key determinants of e-commerce success.

- H1<sub>11</sub>** : Information Quality has a significant influence on E-Commerce Success positively
- H1<sub>12</sub>** : System Quality has a significant influence on E-Commerce Success positively
- H1<sub>13</sub>** : Service Quality has a significant influence on E-Commerce Success positively

Ghandour et al. [17] tried to measure website quality based on the manager's perspective by adding two dimensions of website quality variable on the e-commerce

success model by DeLone and McLean [16] and showed that there is a correlation between design quality, promotional quality and e-commerce success. Moreover, the previous study by AlAdwani and Palvia [23] showed that design quality could appeal users to visit the website through visual-attraction by the first impression. Dreze and Zufryden [24] stated the importance of increasing website visibility through marketing approaches, such as SEO implementation.

- H1<sub>14</sub>** : Design Quality has a significant influence on E-Commerce Success positively
- H1<sub>15</sub>** : Promotional Quality has a significant influence on E-Commerce Success positively

*F. Website Use, Use Satisfaction and E-Commerce Success*

One of the efforts conducted by MSMEs in Indonesia in order to boost use satisfaction on website is by providing features such as online order, online payment and etc. which could trigger user revisit [6]. Moreover, the research showed that website use has a significant influence on use satisfaction.

- H1<sub>16</sub>** : Website Use has a significant influence on Use Satisfaction positively

Pujani et al. [6] recommend MSMEs in Indonesia to have its own e-commerce website for the managers to have full control over the daily operation. Moreover, the research showed that use satisfaction had been considered as a crucial factor in reaching e-commerce success.

- H1<sub>17</sub>** : Website Use has a significant influence on E-Commerce Success positively
- H1<sub>18</sub>** : Use Satisfaction has a significant influence on E-Commerce Success positively

Based on these literatures and the results of previous research, the authors posit 18 hypotheses as shown in Figure 1.

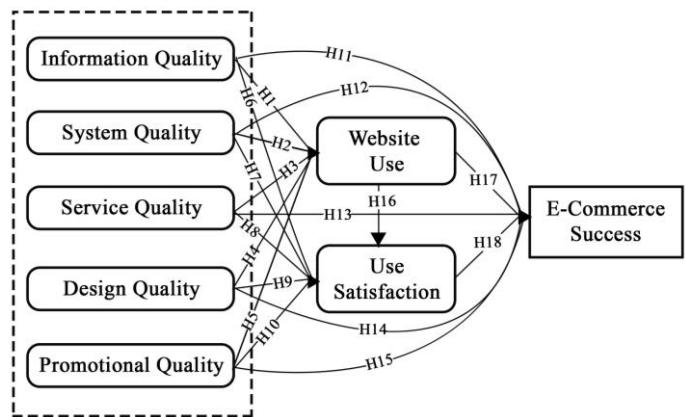


Fig 1. Model Research

**III. RESEARCH METHOD**

*A. Data Collection and Measurement*

The data was collected through a survey conducted in Indonesian MSMEs from April until June 2019. Indonesian MSMEs companies forming the sample in this study are selected using convenience sampling method. Convenience sampling is sampling techniques by intentionally and

prioritize ease and affordability factors, either its place, time or relations [25]. Therefore, this study conducted three phases to collect data, which are:

- 1) Pra-research, where the authors made a list of e-commerce website in Indonesia that active during April until June 2019 by searching on search engine Google, e-marketplace Zalora, and also social media Instagram. This phase obtained 705 e-commerce website in Indonesia.
- 2) Primary data is obtained by spreading questionnaires to 705 e-commerce managers from the result of the pra-research. The questionnaires were sent out either online or face-to-face. This phase obtained a response rate as much 29.7% from 705 e-commerce which is contacted.
- 3) Sorting, where the authors sorted e-commerce who belong to MSMEs as the final respondents in this study. This last phase obtained 103 respondents or as much 14.6% from all of e-commerce which is contacted in the previous phase.

Sample size determination in this study is based on theory Lemeshow [26] which is suitable for the unknown size of the population. Through Lemeshow formula, it is obtained that the minimum sample size of this study is 97 samples with sampling error 10%. Therefore, 103 respondents in this study had exceeded the minimum sample size.

In this study, 8 variables are used, namely information quality, system quality, service quality, design quality, promotional quality, website use, use satisfaction, and e-commerce success. Every variable has several indicators. To measure each indicator, a questionnaire was developed. This study used a five-point Likert scale from 1, strongly disagree to 5, strongly agree. The indicators in this study as shown in Table 1.

#### B. Data Analysis

This study uses partial least square-structural equation modeling (PLS-SEM) for analyzing its data. The tool used as an aid in processing the data is software Smartpls 3. PLS-SEM analysis is conducted to measure website quality and its effect on e-commerce success.

### IV. RESULT

#### A. Sample Characteristics

Table 2 presents the characteristic of e-commerce that included as respondents in this study. Of 103 e-commerce, the majority were located in Jakarta (40.8%) and the business aged between 1-5 years (41.7%). This could be caused by the fact that Jakarta has the highest e-commerce shoppers in Indonesia (Snapcart 2018) and also the amount of Jakarta's residents is bigger than Bogor, Depok, Tangerang, Bekasi, and Bandung (Badan Pusat Statistik 2019). The majority of e-commerce sell goods product, which is related to fashion (63.2%). This is could be triggered by the fact that fashion is the most sold product category through e-commerce (Snapcart 2018). 43.7% of e-commerce in Indonesia as respondents in this study is included as micro-enterprises based on its gross income per year that less than 300 million rupiah (UUD No. 20, 2008).

This also corresponds with the fact that micro-enterprises dominate Indonesian MSMEs (Ministry of Cooperation and SMEs 2018).

TABLE I. INDICATORS, RELIABILITY, VALIDITY

Codes	Indicators	Loadings	$\alpha$	CR	AVE
IQ	<i>Information Quality</i>		0.852	0.900	0.693
	1. Accuracy	0.810			
	2. Relevance	0.898			
	3. Up-Datedness	0.809			
SY	<i>System Quality</i>		0.805	0.873	0.632
	1. Navigation	0.834			
	2. Privacy	0.721			
	3. Customization	0.786			
SE	<i>Service Quality</i>		0.808	0.874	0.634
	1. Reliability	0.823			
	2. Empathy	0.770			
	3. Responsiveness	0.778			
D	<i>Design Quality</i>		0.893	0.920	0.699
	1. Fonts	0.865			
	2. Colors	0.888			
	3. Multimedia	0.759			
	4. Brand Consistency	0.796			
P	<i>Promotional Quality</i>		0.713	0.819	0.531
	1. SEO	0.733			
	2. Social Media	0.721			
	3. Sales Promotion	0.723			
W	<i>Website Use</i>		0.876	0.910	0.672
	1. Receiving orders	0.849			
	2. Accepting payments	0.867			
	3. Purchases completed	0.878			
	4. Number of visit	0.765			
US	<i>Use Satisfaction</i>		0.940	0.954	0.807
	1. Database Integration	0.886			
	2. System Flexibility	0.909			
	3. Development Time	0.897			
	4. Staff Competency	0.905			
EC	<i>E-Commerce Success</i>		0.929	0.947	0.781
	1. Sales	0.897			
	2. Profit	0.904			
	3. Customer Loyalty	0.920			
	4. Global Reach	0.795			
5. Competitive Advantage	0.899				

**TABLE II. E-COMMERCE CHARACTERISTICS**

Item	Description	Frequency	Percentage (%)
Location	<b>Jakarta</b>	<b>42</b>	<b>40.8</b>
	Bodetabek	31	30.1
	Bandung	30	29.1
Age of Business (year)	<1	19	18.4
	<b>1 - 5</b>	<b>43</b>	<b>41.7</b>
	6 - 10	26	25.2
	>10	15	14.7
Product Category	<b>Goods</b>	<b>98</b>	<b>95.2</b>
	Services	5	4.8
Business Sector	<b>Fashion</b>	<b>65</b>	<b>63.2</b>
	Beauty and Health	6	5.8
	Electronic and Gadget	1	0.9
	Home and Living	5	4.8
	Culinary	7	6.8
	Agriculture	2	1.9
	Printing	3	2.9
	Souvenir	6	5.8
	Others	7	6.8
Gross Income (billion / year in Rupiah)*	< <b>0.3</b>	<b>42</b>	<b>40.8</b>
	0.3 - 2.5	12	11.7
	2.5 - 50	35	34.8

\* 14 respondents had not willing to fill out

### B. Measurement Model

Reliability test was conducted to measure the consistency of the research instrument [27]. Reliability was measured by Composite Reliability (CR) and Cronbach's Alpha ( $\alpha$ ), where the accepted value should exceed 0.7 in both. The result of composite reliability and Cronbach's Alpha as shown in Table 1, indicate an acceptable rate and show the research instrument consistency in conducting the measurement of each variable.

Convergent validity test has a principle that each variable and indicator should have a high correlation on each other [27]. Convergent validity was checked by the value of AVE and loadings factor, where the accepted value should exceed 0.5 on AVE and should exceed 0.7 on loading factors. The result of AVE values shows that all of the AVE values are more than 0.5 and indicate that this study achieved this criterion. Moreover, the result of the loadings factor in Table 1, indicate an acceptable rate and show that there's no need to drop one or more indicators.

Further assessment was conducted to test the discriminant validity, which is to make sure that between different variables and indicators should not have a greater correlation than its latent [27]. Discriminant validity was checked by examining the cross-loadings and root of AVEs. All root of AVEs and loadings are greater between its latent and demonstrate high discriminant validity.

### B. Structural Model

Variation rate of dependent variables was checked by R-Square values, the higher its value then it shows that the proposed research model is better as well [27]. The result of R-Square as shown in Table 3 indicate that 57% of the variance in e-commerce success was conducted by website quality, website use and use satisfaction. It means e-commerce success was, as hypnotized, affected by website quality, website use and use satisfaction. R-Square values for website use means that 42.6% of the variance was accounted for by website quality. Also, R-Square values for

use satisfaction means that 61.9% of the variance was accounted for by website quality and website use. Hence, the results of R-Square show a satisfactory level of explanation. According to Hair et al. [28], this model's research is included moderate.

**TABLE III. R-SQUARE**

Variables	R Square
Website Use	0.426
Use Satisfaction	0.619
E-commerce Success	0.570

Furthermore, path coefficient analysis is conducted not only in order to know the relationship between variables but also to know whether the hypotheses proposed in this study are supported or rejected. The estimation results of PLS-SEM are shown in Table 4 and Figure 2. Based on the results, five hypotheses are supported with significant at the 0.05 level. The results generated by the path coefficient analysis show that the t-value of all five hypotheses exceeds the cut-off t-value of 1.96 and has positive values on the original sample.

Therefore, it can be conducted that website quality has an indirect significant effect on e-commerce success. Meanwhile, use satisfaction is believed as a key determinant of e-commerce success because of its direct significant effect on e-commerce success. In order to increase use satisfaction, it is needed to develop information and promotional quality on website. On the other hand, use satisfaction is also affected by website use, then it is also needed to optimize system quality on website.

**TABLE IV. RESULTS OF HYPOTHESES TESTING**

Hypotheses	Original sample	t-statistic	Supported	
H1 <sub>1</sub>	IQ > W	-0.057	0.479	No
H1 <sub>2</sub>	SY > W	<b>0.340</b>	<b>2.093*</b>	<b>Yes</b>
H1 <sub>3</sub>	SE > W	0.197	1.203	No
H1 <sub>4</sub>	D > W	0.153	1.166	No
H1 <sub>5</sub>	P > W	0.092	0.649	No
H1 <sub>6</sub>	IQ > US	<b>0.245</b>	<b>2.297*</b>	<b>Yes</b>
H1 <sub>7</sub>	SY > US	0.112	0.836	No
H1 <sub>8</sub>	SE > US	-0.032	0.230	No
H1 <sub>9</sub>	D > US	0.120	1.063	No
H1 <sub>10</sub>	P > US	<b>0.265</b>	<b>2.878*</b>	<b>Yes</b>
H1 <sub>11</sub>	IQ > EC	-0.150	1.207	No
H1 <sub>12</sub>	SY > EC	0.077	0.453	No
H1 <sub>13</sub>	SE > EC	0.142	1.117	No
H1 <sub>14</sub>	D > EC	0.187	1.430	No
H1 <sub>15</sub>	P > EC	0.171	1.391	No
H1 <sub>16</sub>	W > US	<b>0.248</b>	<b>2.372*</b>	<b>Yes</b>
H1 <sub>17</sub>	W > EC	0.075	0.716	No
H1 <sub>18</sub>	US > EC	<b>0.364</b>	<b>3.145*</b>	<b>Yes</b>

<sup>b</sup> significant at  $p < 0.05$

## V. DISCUSSION

This study introduces new factors on e-commerce success measured by MSMEs managers' perspective. Comparing our results to previous website quality studies reveals several interesting findings. The results of this study

showed that website quality has an indirect effect on e-commerce success. This would imply insights to MSMEs managers realizing what aspects to prioritize in order to optimize e-commerce success. Also, MSMEs who has not website may be interested in investing fund to develop their own website because of its great contribution on stimulating each indicator of e-commerce success, especially global market reach.

MSMEs in Indonesia consider that it's important to have a good system quality to trigger the use of websites, especially in terms of users' data privacy and security. In addition, with a good and clear navigation flow, users could easily find information or certain products on the website as they want. User Interface and User Experience on website have an important role, how the appearance of the website can easily deliver or give directions to the users to the information they sought. The implementation of customization or personalization system, such as search facility and sort by facility could make it easier for users to browse websites.

Use satisfaction when using e-commerce websites at MSMEs in Indonesia will increase along with good information quality. The information that is provided on the website, such as, product name, product description, price, payment method, store location, company contact, etc. should be clear, relevant, accurate and easy to understand. The quality of information measures the extent to which all of the information displayed could answer the things that the users wants to know.

MSMEs in Indonesia have utilized the link feature on social media to increase website visibility, but most MSMEs have not optimized the use of SEO and integrated e-mail. In order to increase website visibility that will later establish brand awareness, MSMEs can advertise products through Google Ads, publish articles or trivia related to business products, and also implement SEO on each web page and individual articles or advertisements. Integrated e-mail on the website can be used to provide up-to-date information to users, such as notifications about new products, special offers, even it's just for as simple as congratulating the user's birthday. The presence of a subscription really helps MSMEs on doing direct-marketing via e-mail.

MSMEs in Indonesia are recommended to develop e-commerce websites. User satisfaction when using a website can be a trigger for more sales and loyal customers. With use satisfaction, the user will continue to browse the website even it's just to look at the products that are offered or anticipate new products. Use satisfaction on website, either it's customer, supplier or internal company users is the main driving factor for good e-commerce operations. Therefore, MSMEs must be always ready to maintain the quality of the website in the future, so that the level of use satisfaction does not decrease.

However, contrary to what most prior researches suggest is this study shows that design quality has no significant effect on e-commerce success. MSMEs in Indonesia are very confident with their website design, but the results of these results showed that design quality does not necessary on making users browse longer on website even though the design looks very attractive for the first impression. Users prefer good navigation, compared to websites that are only

concerned about appearance. Therefore, MSMEs in Indonesia need a good and well-prepared User Interface and User Experience design.

**A. Managerial Implication**

Hypotheses testing results using PLS-SEM in Table 4 showed that website quality has an indirect effect on e-commerce success, which indicates that intervening variables (use satisfaction and website use) in this study have a greater role in increasing e-commerce success. In addition, the most influential website quality variables are information quality, system quality, and promotion quality. Therefor, authors develop e-commerce success model based on the result of PLS-SEM analysis. Developed e-commerce success model is shown in Figure 2.

In order to improve the information quality, MSMEs could implement the language and currency option feature on website. This feature supports one of the indicators of e-commerce success, which is the global market reach. Language and currency option feature could increase the chances of visits and sales from users in several countries and could increase the understandability of the information provided on website [29]. In addition, MSMEs could implement the digital mockup feature, where users can input the desired design on their own and website would automatically provide the results of its application on the product [30]. This feature could increase system flexibility and as a result, use satisfaction toward website will also increase.

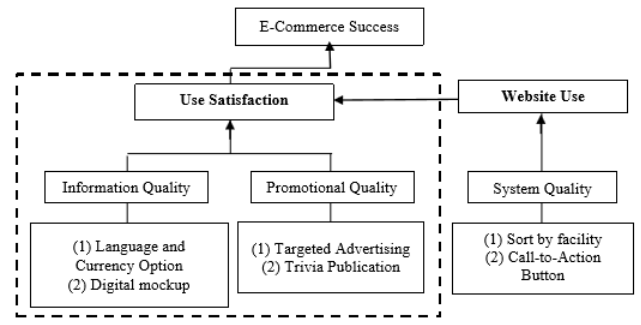


Fig. 2. E-Commerce Success Model based on PLS-SEM result

In order to improve promotional quality, MSMEs could carry out targeted advertising, where ads are classified based on advertising channels and demographics [31]. This targeted advertising was carried out by Gojek at their new logo launching in 2019. Gojek cooperated with influencers in various cities to create advertisements whose content was adjusted to the phenomenon that occurred in each city. In addition, MSMEs could publish trivia through websites, e-mail or social media, such as content tips, myths or facts, and current trends related products [32]. By publishing trivia on a web page that has SEO, website visibility and the number of visits would increase, also as a result will stimulate bigger sales. The conversion rate of visits becoming sales on MSME e-commerce websites in Indonesia is 23%. Moreover, trivia publications via e-mail to users can be accompanied by new product information or

special offers whose information is corresponding with the topic of trivia.

In order to improve system quality, MSMEs could implement sort by feature to provide easier navigation and allow users to do customization. This could also shorten the user's time on finding the desired information. According to [33], the best arrangement display of sorting results is to sort products with high quality (specifications) to the products with low quality (descending). In addition, MSMEs could implement a Call-To-Action button. In practice, MSMEs should not only display company contacts but also need to display a "Text Now" button so that users can easily contact the company with just one click. Some Call-to-Action buttons could be implemented in the form of "Buy Now", "Learn More", "Subscribe Now", and the others with the aim of getting a direct response and simplifying navigation. Call-To-Action button is displayed at the bottom right of the content to get more clicks [34]. The ultimate goal of the managerial implications above is to improve each indicator of e-commerce success, which is sales, profits, loyalty, global market reach and the development of competitive advantage.

## VI. CONCLUSION AND SUGGESTION

### A. Conclusion

Based on the results and discussion in this study, it can be concluded that website quality has a significant indirect effect on e-commerce success, where the effect is through intervening variables that are website use and use satisfaction. Website quality variables that have a significant influence on e-commerce success are information quality, promotion quality, and system quality. Meanwhile, service quality and design have no significant effect. MSMEs in Indonesia can focus on improving the quality of information, promotions, and systems on website. However, the authors recommend MSMEs managers to prioritize improving the quality of information and promotion because of its direct influence on satisfaction of use which has the biggest role in e-commerce success. And in addition, promotional quality is also believed to be less optimized by MSMEs in Indonesia. MSMEs' managers in Indonesia could use e-commerce success model developed in this study as the reference or benchmark to reach the best decision on future strategy making.

### B. Limitations and Future Research

This study has several limitations, which are (1) The majority of data collection techniques were carried out through the distribution of online questionnaires, (2) The number of samples that had not met the targeted number, and (3) This study only provide factors that could explain 57% of e-commerce success.

For further research, it can be conducted a study regarding the role of e-commerce platforms and its effect on the success of e-commerce to be able to recommend what platforms are the most suitable other than websites to MSMEs in Indonesia and to analyze the opportunities of turning down on each platform.

## REFERENCES

- [1] W. A. Social, "Digital Around The World in 2019," 2019. [Online]. Available: [www.wearesocial.com](http://www.wearesocial.com).
- [2] T. S. H. Teo and Y. Pian, "A model for Web adoption," *Inf. Manag.*, vol. 41, no. 4, pp. 457–468, 2004.
- [3] Emarketer, "E-Commerce Sales in Souteast Asia," 2019. .
- [4] Statista, "E-Commerce Market Forecast," 209AD. [Online]. Available: [www.statista.com](http://www.statista.com). [Accessed: 03-Sep-2019].
- [5] E. Turban, N. Bolloju, and T. Liang, "ICEC 2010 - Proceedings of the 12th International Conference on Electronic Commerce: Roadmap for the Future of Electronic Business," *ACM Int. Conf. Proceeding Ser.*, 2010.
- [6] V. Pujani, J. Xu, and M. Quaddus, "Factors of Commercial Website Success in Small and Medium Enterprises: An Indonesian Study," *e-business*, 2010.
- [7] R. Lanz, K. Lundquist, G. Mansio, A. Maurer, and R. Teh, "E-Commerce and Developing Country - SME Participant in Global Value Chains," 2018.
- [8] R.-J. "Bryan" Jean and D. Kim, "Internet and SMEs' internationalization: The role of platform and website," *J. Int. Manag.*, no. March, p. 100690, 2019.
- [9] E. Akman and M. Dagdeviren, "Discovering what makes a sme website good for international trade," *Technol. Econ. Dev. Econ.*, vol. 24, no. 3, pp. 1063–1079, 2018.
- [10] O. Rababah and F. Masoud, "Key Factors for Developing a Successful E-commerce Website," *Commun. IBIMA*, vol. 2010, pp. 1–9, 2010.
- [11] J. Nielsen, *Designing Web Usability*. Indianapolis (IN): New Riders Publishing, 2000.
- [12] S. Barnes and R. Vidgen, "An integrative approach to the assessment of e-commerce quality," *J. Electron. Commer. Res.*, vol. 3, no. 2, pp. 114–127, 2002.
- [13] H. Alhulail, M. Dick, and A. Abareshi, "Factors that Impact Customers' Loyalty to Social Commerce Websites," 2018, no. 6.
- [14] C. L. Hsu, M. C. Chen, and V. Kumar, "How social shopping retains customers? Capturing the essence of website quality and relationship quality," *Total Qual. Manag. Bus. Excell.*, vol. 29, no. 1–2, pp. 161–184, 2018.
- [15] K. C. Chang, C. L. Hsu, M. C. Chen, and N. Te Kuo, "How a branded website creates customer purchase intentions," *Total Qual. Manag. Bus. Excell.*, vol. 30, no. 3–4, pp. 422–446, 2019.
- [16] W. H. DeLone and E. R. McLean, "Measuring e-commerce success: Applying the DeLone and McLean Information Systems Success Model," *Int. J. Electron. Commer.*, vol. 9, no. 1, pp. 31–47, 2004.
- [17] A. Ghandour, K. Deans, G. Benwell, and P. Pillai, "Measuring eCommerce website success," *ACIS 2008 Proc. - 19th Australas. Conf. Inf. Syst.*, pp. 320–330, 2008.
- [18] R. McLeod and G. Schell, *Management Information Systems 10/e*. E Prentice Hall, 2007.
- [19] J. O'brien and M. GM, *Introduction to information systems (Vol. 13)*. New York City (USA): McGraw-Hill/Irwin, 2005.
- [20] Y. Lee and K. A. Kozar, "Investigating the effect of website quality on e-business success: An analytic hierarchy process (AHP) approach," *Decis. Support Syst.*, vol. 42, no. 3, pp. 1383–1401, 2006.
- [21] J. Palmer, "Performance metrics," *Inf. Syst.*, vol. 47, no. 6, pp. 151–167, 2002.
- [22] A. R. Iskandar, "Analisis Pengaruh Kepuasan Layanan Website Terhadap Loyalitas Konsumen E-Commerce," 2017.
- [23] A. M. Aladwani and P. C. Palvia, "Developing and validating an instrument for measuring user-perceived web quality," *Inf. Manag.*, vol. 39, no. 6, pp. 467–476, 2002.
- [24] X. Drèze and F. Zufryden, "Measurement of online visibility and its impact on Internet traffic," *J. Interact. Mark.*, vol. 18, no. 1, pp. 20–37, 2004.

- [25] T. Amirin, *Menyusun Rencana Penelitian*. 2000.
- [26] S. A. Ogston, S. Lemeshow, D. W. Hosmer, J. Klar, and S. K. Lwanga, "Adequacy of Sample Size in Health Studies," *Biometrics*, vol. 47, no. 1, p. 347, 1991.
- [27] W. Abdillah and J. Hartono, *Partial Least Square (PLS): Alternatif Structural Equation Modeling (SEM) dalam Penelitian Bisnis*. Yogyakarta (ID): Penerbit Andi, 2015.
- [28] J. F. Hair, M. Sarstedt, L. Hopkins, and V. G. Kuppelwieser, "Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research," *Eur. Bus. Rev.*, vol. 26, no. 2, pp. 106–121, 2014.
- [29] K. Friedmeyer-Trainor, R. Vernon, and D. Lynch, "Accessibility and Agency Website Design: Stumbling Backwards? A Follow-Up Study," *J. Technol. Hum. Serv.*, vol. 30, no. 2, pp. 59–71, 2012.
- [30] Wipro, "Digital Assurance for The Real World," 2014. .
- [31] T. T. C. Lin, F. Paragas, and J. R. Bautista, "Determinants of mobile consumers' perceived value of location-based advertising and user responses," *Int. J. Mob. Commun.*, vol. 14, no. 2, pp. 99–117, 2016.
- [32] R. Gonçalves Curty and P. Zhang, "Website features that gave rise to social commerce: A historical analysis," *Electron. Commer. Res. Appl.*, vol. 12, no. 4, pp. 260–279, 2013.
- [33] S. Cai and Y. Xu, "Designing product lists for e-commerce: The effects of sorting on consumer decision making," *Int. J. Hum. Comput. Interact.*, vol. 24, no. 7, pp. 700–721, 2008.
- [34] A. Hernandez and M. L. Resnick, "Placement of call to action buttons for higher website conversion and acquisition: An eye tracking study," *Proc. Hum. Factors Ergon. Soc.*, pp. 1042–1046, 2013.