

## Are You Satisfied? Modeling User Satisfaction Framework for E-Learning Platform

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**Abstract.** The pandemic of Novel Coronavirus 2019 has seen tremendous increase on the e-learning platform in the entire world, including Malaysia. The sudden movement from face-to-face interaction to virtual platform cause several problems such as mental stress, insufficient facilities, boredom, and inaccessible connection especially to those already deprived of the Internet facilities. Thus, the objective of this paper is to investigate the current level of user satisfaction on e-learning platforms among students in higher education in Malaysia. A model consisted of three independent variables (information quality, system quality, and service quality) was proposed against single dependent variables (user satisfaction). A quantitative research methodology was adopted, and data was analyzed using Statistical Package for Social Science (SPSS) version 26. Finding shows that two factors (information quality and service quality) have a predictive power on user satisfaction, whilst system quality was proven insignificant on the user satisfaction.

**Keywords:** E-Learning, Pandemic, User Satisfaction, Quality Dimensions.

### Introduction

E-learning is the act of bringing the classroom to the distant audience. The pandemic of Novel Coronavirus 2019 (COVID-19) has seen greater engagement of student towards the usage of e-learning [1-2]. The sudden movement from face-to-face to online learning left many unprepared; and cause several problems such as mental stress, insufficient facilities, boredom, and inaccessible connection especially to those already deprived of the Internet facilities [1, 3-4]. More intriguingly, recent statistics shows that more than 70% of younglings are no longer interested to further their study due to the financial problems and [5]; an alarming statistic that has cause big uproar among Malaysian citizens for the past few weeks.

Thus, it has come to the knowledge of the ministry and local universities to the needs of rebranding and reshaping their service delivery. Even tough Malaysia is currently on the endemic phase; however, e-learning should be taken seriously as it may affect both the reputation and operational of the organization [1-2]. Organization, especially universities must keep abreast with the latest technology and prepare themselves in case for any disaster than may occurred in the near future via facilities development, course restructuring, emotional development, etcetera [1,6].

Therefore, to further scrutinized and elaborate the effectiveness and function of e-learning as communication and interaction platform, we concurred that there is a need to revisit the framework of e-learning satisfaction, as proposed by the previous studies of [1], [7], and [8]. The subsequent sections are arranged as follows: First, we explain brief introduction of the research model. Second, we highlight the methodology of the study. Third, we discuss the findings of the study before explaining the outcome of the study.

### Research Model

The Figure 1 below shows the research model for the study. The conceptual model was adopted from the study of [1], [7], and [8]. There are a total of three independent variables, namely System Quality (SQ), Information Quality (IQ), and Service Quality (SeQ). IN relation to dependent variable, e-learning user satisfaction was conceptualize.

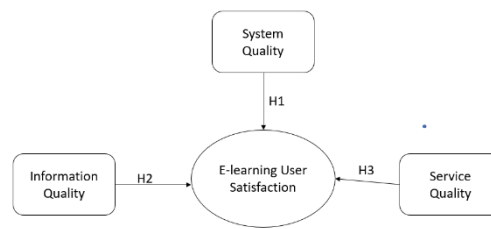


Fig. 1. Research Model.

System quality is operationalized as the extent of e-learning performance in delivering and retrieving related information [9-10]. System quality ensure that information is accessible in timely manner, at the right amount, and cross-platform compatibility. System quality will enhance the user experience and lead into higher level of user satisfaction. A poor design information system will lead to low morale, poor adoption, and resistance to change. Therefore, it can be hypothesized that:

H1: System Quality has a positive and significant effect on E-Learning User Satisfaction.

On the other hand, information quality is the extent of the user perception on the e-learning platform that is provided to support the needs of the users [9-11]. The use of e-learning platform offers integrated resources such as text resources, images, videos, animation, etcetera. These resources are usually accessible to all member of the universities either academician or students. The level of access and coverage play an important role in determining the sufficient of the information or resources provided to the users. Thus, universities must ensure that they have accessed to sufficient resources to ensure the satisfaction of their stakeholder. Therefore, it can be hypothesized that:

H2: Information Quality has a positive and significant effect on E-Learning User Satisfaction.

Service quality is the extend of features, services, and the availability of the information system in delivering the services to the users [9-11]. Service quality ensure that user is having access to appropriate number of services. E-learning as an education platform offer several features such as forum, student management, quiz management, Massive Open Online Course (MOOC), Open Educational Resources (OER), chatting, etc. Selecting the best e-learning platform may have a positive impact on the user satisfaction in using e-learning services. Therefore, it can be hypothesized that:

H3: Service Quality has a positive and significant effect on E-Learning User Satisfaction.

### Methodology

Quantitative research methodology was adopted for the study. The item of the instrument was adopted from the study of [1], [7], and [8]. A convenience sampling method was used for the sampling process. The population of the study is undergraduate students from one of the local universities in Malaysia. A total number of 203 valid responses were received, indicating a sufficient number of sampling size. Data were clean, check for outlier, before inserted into Statistical Package for Social Science (SPSS) version 26 for analysis. To check the reliability of the instrument, a Cronbach' Alpha Coefficient test was conducted on the independent and dependable variable. The following Table 1 shows the result of Cronbach' Alpha Coefficient test. The value shown a result between 0.75 to 0.82, surpassing the minimum value of 0.7 as suggested by [12].

Table 1. Reliability Analysis

Construct	Items	Cronbach's Alpha	Source
System Quality (SQ)	4	0.75	
Information Quality (IQ)	4	0.76	
Service Quality (SeQ)	4	0.75	[1], [7], [8]
E-Learning Satisfaction	4	0.82	

## Findings

The following subcategories explained the findings of the study I relation to demographic profiles, descriptive analysis, Pearson's Correlation, and Multiple Regression.

### Demographic

Table 2 shows the demographic analysis of the respondents. The majority of respondents aged 21 to 24 years old (N=142 or 70.0%), followed by 18 to 20 years old (N=31 or 15.3%), and 25 to 30 years old (N=30 or 14.7%). Concerning distribution of gender, interestingly more than half of the respondents are male (N=119 or 58.6%) while the rest is female (N=84 or 41.4%). In relation to education, more than half of the respondent enrol for degree (N=120 or 59.1%), followed by diploma (N=54 or 26.6%), master (N=15 or 7.4%), foundation (N=11 or 5.4%) and PhD (N=3 or 1.5%).

Table 2. Demographic

Item	Sub-Items	Frequency	%
Age	18-20	31	15.3
	21-24	142	70.0
	25-30	30	14.7
Gender	Female	84	41.4
	Male	119	58.6
Education	Foundation	11	5.4
	Diploma	54	26.6
	Degree	120	59.1
	Master	15	7.4
	PhD	3	1.5

### Correlation

To investigate the correlation between the dependent variables and the independent variables, a Pearson's Correlation test was conducted. The results of the Pearson's Correlation of this study are interpreted as follow: (1) there is a positive and moderate correlation between system quality and e-learning satisfaction ( $r=0.36$ ,  $n=203$ ,  $p=0.00$ ), (2) there is a positive and strong correlation between information quality and e-learning satisfaction ( $r=0.66$ ,  $n=203$ ,  $p=0.00$ ), and (3) there is a positive and moderate correlation between service quality and e-learning satisfaction ( $r=0.48$ ,  $n=203$ ,  $p=0.00$ ).

### Multiple Regression

Next, a multiple regression analysis was conducted to determine the predictive power of the independent variables (system quality, information quality, and service quality) on the dependent variable (e-learning satisfaction). A multiple regression analysis was conducted using SPSS version 26. Table 6 shows the result of the study. The resulted Adjusted R Square of 0.45 indicates that the combine variable of system quality, information quality, and service quality can predict at least 45% of the variances in the dependent variable. Moreover, two of three hypotheses of the study were also supported.

Table 6. Multiple Regression

Hypothesis	Path	Coefficient	t-value	p-value	Result
H1	System Quality → E-Learning Satisfaction	0.084	- 1.554	> 0.01	Not Supported
H2	Information Quality → E-Learning Satisfaction	0.078	9.071	< 0.01	Supported
H3	Service Quality → E-Learning Satisfaction	0.079	2.908	< 0.01	Supported

### Discussion and Conclusion

In conclusion, it should be noted that the analysis's goal is to determine user satisfaction with an e-learning platform used by higher education institutions in Malaysia. With the use of a total of 16 questions, our study shows how Malaysia's e-learning platform's users feel about the implementation of e-learning platform in Malaysia. Our study indicated that information quality, and service quality as important predictors of e-learning user satisfaction These connections further

indicate that the e-learning platform has a positive impact on users in higher learning institutions in Malaysia.

Based on multiple regression that we analyse we can see that the first hypothesis which is users do not satisfy with the e-learning platform in terms of system quality. Based on that we recommended that higher learning institutions improve their online learning platform. Higher learning institutes need to make sure that the online learning platform is user-friendly for the users. Other than that, higher learning institutions also need to make sure that the online learning platform is suitable for all classes that have been participated by the users and make sure the online learning platform can run smoothly for the users.

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