THE EFFECTIVENESS OF SYSTEMS AND APPLICATIONS USAGE FOR ONLINE FINAL EXAMINATION DURING MOVEMENT CONTROL ORDERPERIOD

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ABSTRACT

The study aims to analyse factors such as perceived ease of use, technology and communication and institution involvement in influencing the effectiveness of online systems and applications for final online examinations held at International Islamic University College Selangor (KUIS) during the period of movement control order (MCO) 2020. Basic model of Technology Acceptance Model (TAM) is applied in this research to study the effectiveness of online systems and applications used by students of KUIS who undergo final online examinations during MCO 2020. This is a quantitative research and questionnaires have been used as the research instrument. The questionnaires were distributed to KUIS students' who took part in the final online examinations during MCO 2020 and a total of 351 data have been collected. Through multiple regression analysis, it is discovered that perceived ease of use and technology are the main factors that influence the most towards the effectiveness of online systems and applications for final online examinations purposes at KUIS while institution involvement factor influences the least. As a conclusion, by studying through these factors, the findings of this research study can serve and be beneficial towards KUIS and the teaching staff in the direction of improving the effectiveness of using online platforms for online examination purposes.

Keywords: MCO, TAM, Online examination

INTRODUCTION

The COVID-19 pandemic, also known as the coronavirus pandemic is a global coronavirus 2019 pandemic. The outbreak was initially detected in mid-December 2019 in the city Wuhan, Hubei, China, and was recognized as a pandemic by the world health organization (WHO) on March 11, 2020. The Malaysian Government has declared a Movement Control Order (MCO) period on 18 march 2020 to curb the spread of the virus, and it has affected various sectors including the education sector. MCO period implemented impact on the final examination system of The International Islamic University College Selangor (KUIS) session II 2019/2020. The traditional final examination system that is being carried out for all this while had to be changed to an online final examination. KUIS academicians have taken the initiative by conducting online final examination systems by using various platform such as KUIS learning management system (KLMS), google apps, socrative and etc. Students are also prepared the requirement needs to take online examination such as laptop and internet facilities

Online examinations can be defined as publishing examination questions using the internet and the examination results are generated automatically. Examination questions consist of various forms such as multiple choice, fill in the blanks and so on (Tufekci & Ekinci, 2013). Basic model of technology acceptance model (TAM) is applied in this research to study the effectiveness of online systems and applications usage for final online examinations during MCO 2020. Perceived ease of use factor is based on the TAM Model, while the other two factors, technology and communication, and institutional factor are the external variables of TAM model.

LITERATURE REVIEW

Perceived ease of use refers to the user believes that the technology or system introduced can be used easily and problem-free (Davis, 1989). Previous studies show that the perceived ease of use also determines the acceptance or rejection of a new technology because the studies found that the level of user acceptance of a technology introduced will increase when the system developed is easy to use (Davis, 1989). If they consider that the technology is complicated, tiresome and time-consuming, most probably they will reject the technology. As a result, they will not use it effectively and efficiently as they feel uneasy, apprehensive or terrible in using it.

Based on the focus of this study, the perceived ease of use is referring to student's assumption about online system and application for online final examination whether it is easy or difficult to be used. Students will be positive about the acceptance of this online system and application if they find it is easy to use and then they intend to use it again. Chang et al. (2015) mentioned that the continuance aims of using technology or system is influenced by perceived ease of use. Previous study has found that there is a positive relationship between perceived ease of use and acceptance of information technology (Venkatesh & Davis, 2000). Sazanah (2019) studied the perceived ease of use factor in determining student's acceptance of online learning and found that this factor is important for students to accept and use them.

Three factors that influencing the perception from student for taken the online examination are internet connection, time, and online test format. Students were struggling doing the online examination when the internet connection was slow or not stable (Badi'atul Azmina,2017). The another importants thing that need to be emphasized is a user friendly interface of the system or application used, central examination management and the security (Yuan, Zheng & Zhan ,2003). Nowadays, the development of online systems and applications for online examination that can be accessed using smart phones is very important for effective usage. Institutional factor or the facilitating conditions refer to the degree of which an individual believes that institutional and technical infrastructure exists to support the use of a system (Teo, 2009).

Many institutions have provided infrastructure as well as technical support for the purpose of online examination. The centre of Information Technology at an institution is responsible for the provision of technical assistance with regards to a smooth Internet access and computer appliances maintenance (Sazanah, 2020). Previous study also found that online examination implementation has a positive perception of the effectiveness of system usage (Sarayyih & Ilyas, 2013). Based on the focus of this study, the Institutional factor refers to the guidelines, facilities or infrastructures and also technical supports that have been provided by the institution which is KUIS for their student to take the online examination.

RESEARCH METHODOLOGY

This study used a quantitative approach by conducting a survey methodology. The study instrument used was a questionnaire developed based on a previous questionnaire by Septian (2018) and Alenezi (2011), which applied the TAM model in studies on the acceptance and effectiveness of online examination and online learning. The questionnaire was divided into five sections: (a) items on the demographic information of the respondents, (b) items regarding The effectiveness of the system and application, (c) items regarding Perceived Ease of Use factor, (d) items regarding Technology and Communication factor, and (e) items regarding Institutional factor.

Data collection was done online through the Google Form. The study subject was the KUIS students who were taken the final online examinations for session II 2019/2020 during the MCO period. The questionnaires used five Likert rating scales that ranged between 1 (Strongly Disagree) and 5 (Strongly Agree). Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 23. The multiple regression analysis has been used and presented in this study. Total of the study sample was 351 students from 6 faculties of KUIS as shown in Table 1.

TABLE 1. Total of Study Sample

Faculty	Sample
Faculty of Science and Information Technology (FSTM)	36
Faculty of Education (FP)	50
Faculty of Management and Muamalah (FPM)	68
Faculty of Syariah and Law (FSU)	75
Faculty of Islamic Civilization Studies (FPPI)	115
Matriculation Centre (PM)	7
Total	351

DATA ANALYSIS

TABLE 2. Demographic Information of the Respondents

		Frequency	Percentage (%)
Gender	Male	113	32.2
	Female	238	67.8
Age	18-19 years old	37	10.5
	20-25 years old	306	87.2
	26-29 years old	8	2.3
Location	In campus	14	4.0
	Outside campus	337	96.0
Internet speed	Good	218	62.1
	Moderate	114	32.5
	Poor	19	5.4
Faculty	FSTM	36	10.3
	FP	50	14.2
	FPM	68	19.4
	FSU	75	21.4
	FPPI	115	32.8
	PM	7	2.0
Examination platform*	KUIS Learning Management System (KLMS)	84	
	Google Apps	246	
	Socrative	15	
	Microsoft Office & E-mail	106	

120

Others	99
Total	550

Cannot provide a valid percentage as one course may have chosen more than one option of examination platform.

MULTIPLE REGRESSION ANALYSIS

Table 3.0 shows the correlation between the perceived ease of use score, technology and communication score and institution score to the effectiveness of online platforms in which all factors contributes about 73% (r = 0.855) towards the effectiveness of the online platforms.

Dependent Variable: Effectiveness
Independent Variable: Perceived ease of use, technology and communication, institution

TABLE 3. REGRESSION MODEL

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.845[a]	0.714	0.713	1.32446
2	0.855[b]	0.730	0.729	1.28797
3	0.855[c]	0.731	0.729	1.28835

a. Predictors: (Constant), Perceived ease of use score
b. Predictors: (Constant), Perceived ease of use score, Technology and Communication score
c. Predictors: (Constant), Perceived ease of use score, Technology and Communication score, Institution score
d. Dependent Variable: Effectiveness score

Table 4.0 shows the result of ANOVA in 3 Model Regression, in which all factors (perceived ease of use, technology & communication and institution) scores are significant contributing factors towards the effectiveness of the online platforms, [$F_{(3, 347)}$= 314.228, p < 0.001)].

TABLE 4. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1528.450	1	1528.450	871.308	.000[a]
	Residual	612.216	349	1.754		
	Total	2140.667	350			
2	Regression	1563.378	2	781.689	471.217	.000[b]
	Residual	577.288	348	1.659		
	Total	2140.667	350			
3	Regression	1564.703	3	521.568	314.228	.000[c]
	Residual	575.964	347	1.660		
	Total	2140.667	350			

a. Predictors: (Constant), Perceived ease of use score
b. Predictors: (Constant), Perceived ease of use score, Technology and Communication score
c. Predictors: (Constant), Perceived ease of use score, Technology and Communication score, Institution score
d. Dependent Variable: Usefulness score

Table 5.0 shows three (3) coefficients of independent variable which is perceived ease of use (β= 0.720, t= 18.183, p< 0.001), technology & communication (β= 0.149, t= 3.386, p= 0.001) and institution (β= 0.040, t= 0.893, p > 0.05). Perceived ease of use (p< 0.001) and technology & communication (p <0.05) shows significant contribution to effectiveness of the online platform.

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	2.203	.310		7.108	.000
Perceived ease of use score	.809	.027	.845	29.518	.000
2 (Constant)	1.566	.332		4.719	.000
Perceived ease of use score	.701	.035	.733	19.774	.000
Technology & communication score	.162	.035	.170	4.589	.000
3 (Constant)	1.446	.358		4.036	.000
Perceived ease of use score	.689	.038	.720	18.183	.000
Technology & communication score	.142	.042	.149	3.386	.001
Institution score	.043	.048	.040	.893	.372

a.   Dependent Variable: Effectiveness Score

HYPOTHESIS RESULT

TABLE 6. HYPOTHESIS RESULT

Ha¹	There is a significant positive correlation between perceived ease of use towards the effectiveness of online platform use for examination	Accepted
Ha²	There is a significant positive correlation between Technology and Communication towards the effectiveness of online platform use for examination	Accepted
Ha³	There is a significant positive correlation between Institutional towards the effectiveness of online platform use for examination	Rejected

Through analysis done, it is discovered that perceived ease of use factor and technology and communication factor influenced the effectiveness of online systems and applications for final online examinations purposes at KUIS while Technology and Communication and Institutional or Facilitating Conditions factor was not. For the purpose of this study, the system or application that is easy to use for online exam such as user friendly interface and easy to access contributes a strong influence on the effectiveness of the online examination implementation amongst the KUIS student. The previous study also found that ease of use and easy to access will contribute to the effectiveness of the system or application usage for online examination (Talu, Genc & Kurum,2006).Technological and communication factors also contribute to the effectiveness of the online examination implementation amongst the KUIS student due to factors such as internet access speed and platform usage. Meletiou (2012) also found that technology factor such as operating on the mobile phones with android operating system will contribute the effective usage for online examination.Institutional factors such as technical or infrastructure support seen as insignificant in determining the effectiveness of system and application use for online examinations during the MCO period because most of the students have smart phones to access examination questions anywhere during the MCO period.

CONCLUSION

As a conclusion, the findings of this research study can serve and be beneficial towards KUIS Institution and the teaching staff in the direction of improving the effectiveness of using systems and application for online examination purposes.

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