EFFECTIVENESS OF ONLINE LEARNING ON UNIVERSITY UNDERGRADUATES DURING COVID -19 PANDEMIC (A STUDY BASED ON THE SABARAGAMUWA UNIVERSITY OF SRI LANKA)

W.N. Subhashini[1*], M.A.C.S.S. Fernando[1], C.W.C. Silva[2]

[1] *Department of Economics and Statistics, Sabaragamuwa University of Sri Lanka*
[2] *Faculty of Humanities and Social Sciences, University of Sri Jayewardenepura*

Abstract

The Corona virus, which became a major health problem worldwide, affected all sectors. The uncertain lockdown bitterly affected the educational institutions. Therefore, the education authorities decided to focus on online learning. But most of the undergraduates in Sri Lanka are familiar with the traditional learning process. Due to the change in this paradigm, they had to face many difficulties in their educational performances. The objective of this study is to identify the effectiveness of online learning on undergraduates during the COVID-19 pandemic. The study was based on 308 students in the Sabaragamuwa University of Sri Lanka. The data were collected through the mailed questionnaires. A sample was selected through the two-stage cluster sampling method. Structural equation modeling was applied to analyze the collected data. According to the analysis results, students' willingness to attend physical class was found as a negative significant variable for the effectiveness of online learning. Lecturers and the university adopting online learning and the technical capability of the students were found as significant positive variables for the effectiveness of online learning. The conclusion of this study is that all parties involving university learning can improve skills regarding online learning and that will help to improve the effectiveness of online learning.

Keywords: *COVID-19, Effectiveness, Online learning, Undergraduates*

Corresponding author: Tel: +94(76)4394514; Email:nadeerasubhashini146@gmail.com

Introduction

The Corona virus, which started spreading from the Wuhan area of China at the end of December 2019, had a major impact on many sectors of the society including the education sector (Sakina & Uyun, 2020). As countries were affected by Covid 19, the lockdown methodology was adopted. With hundreds of millions of educators being forced to stay home, education policymakers have taken steps to launch online learning as a remote method of educating students outside the classroom to continue the learning process. Meanwhile, the Sabaragamuwa University of Sri Lanka in May 2020 strategized its teaching and learning process and took the academic process to an online platform albeit with some modifications. It was a new experience for the students and professors. The Sabaragamuwa University of Sri Lanka (SUSL) has not done online learning before. Therefore, online learning caused many problems and difficulties for university students and lecturers. However, SUSL has been conducting online lectures and online assessments for more than one year time period up to now with these difficulties. Therefore, saying that online learning is completely effective is debatable. According to that, this study seeks to understand the effectiveness of online learning on the university undergraduates.

Materials and Methods

This research was based on the Sabaragamuwa University of Sri Lanka. At the present, about 14250 students are studying in the university under 8 faculties. In This study, two-stage cluster sampling was selected as the sampling technique. As the 1st stage 5 faculties such as Faculty of Applied Sciences, Faculty of Social Sciences & Languages, Faculty of Management Studies, Faculty of Agriculture and Faculty of Geomatics were selected. At the 2nd stage the students from 3rd and 4th-year were selected from the 5 faculties. The sample size calculator was used to find the sample size which is 308 students. According to the number of undergraduates in each faculty, 45 from the third and fourth years of the Applied Sciences faculty, 35 from the third and fourth years of the Social Sciences and Languages faculty, 41 from the third and fourth years of the Management Studies faculty, 18 from the third and fourth years of the Agricultural Science faculty and 15 each from the third and fourth years of the Geomatics faculty were selected. A mailed questionnaire was used to collect the data. The questionnaire of the study consists of 3 main parts. Those are personal information, information regarding online learning during pandemic and the effectiveness of online learning. Covariance based Structural Equation Modelling using SPSS AMOS software was applied to examine the relationship between an

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independent and dependent variable. This is an explanatory study with two variables, the independent variable is online learning, the dependent variable is the effectiveness of online learning. Latent variables used to measure independent and dependent variables are shown below.

Figure 1:

Conceptual framework
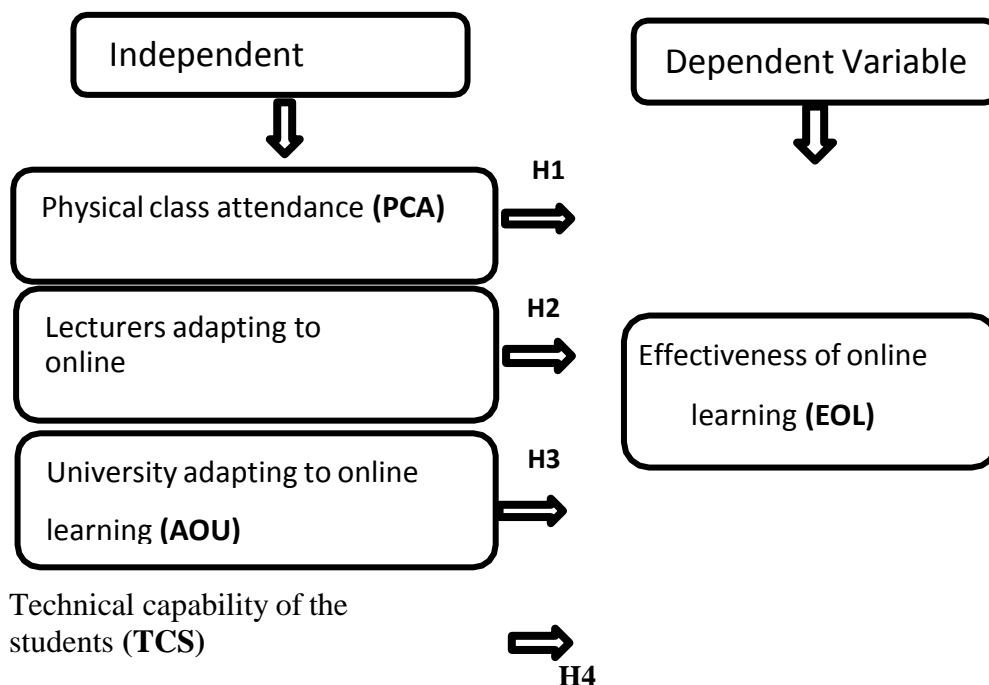
Results and discussion

In the analysis of this study, the first run of the confirmatory factor analysis (CFA) results shows that further space for improvement. The indices to indicate the model fit the data as none of the fit indices is in the acceptable level. Therefore, based on the high modification indices several items suchas AOL1, AOL2, AOU1, AOU4, TCS1, TCS2, TCS6 and EOL2 were deleted. Accordingly, a good fit model was achieved after deleting the items from the initial measurement model. Following table represents the acceptable fit indices after the improvement of the model.
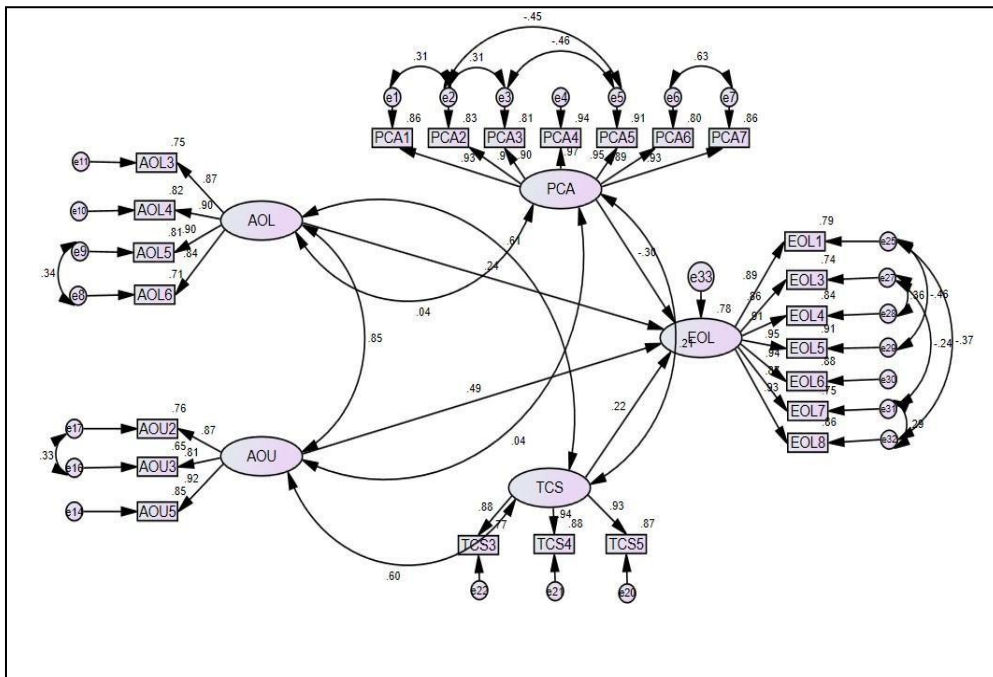
Table 1:

Acceptable fit indices after the improvement of CFA

Fit indices	coefficient
CMIN/DF	2.576
GFI	0.864
CFI	0.964
TLI	0.956
RMSEA	0.072

After obtaining goodness of fit of the model, the relationship between independent and dependent variables can be tested through the structural model. The structural model with the standardized coefficients for the sample is represented in the following figure.

Figure 2:

Standardized Structural Model

Table 2:

Results of the hypothesis

Hypothesis	Effect	Std coefficient	Results
H_1	PCAàEOL	-0.303*	H_1 is supported
H_2	AOLàEOL	0.245**	H_2 is supported
H_3	AOUàEOL	0.487*	H_3 is supported
H_4	TCSàEOL	0.217*	H_4 is supported

Note: *Significant at 0.01 level, ** Significant at 0.05 level

Based on the coefficient of willingness to physical class attendance on the effectiveness of online learning is -0.303 representing the direct negative significant effect of physical class attendance on the effectiveness of online learning. Bali & Liu (2018) found that students who like to attend physical classes negatively affect the effectiveness of online learning. Therefore, results of this study confirmed the previous research. The coefficient of lecturers adapting to online learning on the effectiveness of online learning is
0.245 representing the direct positive significant effect of lecturers adapting to online learning on the effectiveness of online learning. Platt, Raile, & Yu (2014) found that the lecturers are able to manage online learning correctly and effectively and then increase the effectiveness of online learning. Accordingly, results confirmed the previous research. The coefficient of university adapting to online learning on the effectiveness of online learning is 0.487 representing the direct positive significant effect of university adapting to online learning on the effectiveness of online learning. Previous research, Liaw & Huang (2013) found that confidence of online learning in university positively affect the effectiveness of online learning. Results of this study confirmed the previous study. Finally, the coefficient of the technical capability of students on the effectiveness of online learning is 0.217 representing the direct positive significant effect of the technical capability of students on the effectiveness of online learning. Previous study Sun, Tsai, Finger, Chen, & Yeh (2008) also found that ICT support of the students positively affect the success of the online learning. Therefore, results of this study confirmed the previous study.

Conclusions and Recommendations

According to the results of this study, students' willingness to physical class attendance negatively affects the effectiveness of online learning. Moreover, in this construct, respondents have provided high scores for all the items. This study also found the variable, lecturers adapting to online learning positively affect the effectiveness of the online learning. The majority of the respondents provided median scores for items in this construct. The construct variable, the university is adapting to, is that it affects the effectiveness of online learning highly positively. Here the majority of the respondents provided moderate scores for the items. Finally, the variable technical capability of the students also positively affected the effectiveness of online learning, in that construct variable, the majority of respondents provided slightly higher scores for the items. Based on the analysis results can be conclude effectiveness of the online learning in the Sabaragamuwa university of Sri Lanka is in a moderate level. Recommendation of this study is that all parties involving university learning can improve skills regarding online learning and that will help to improve effectiveness of the online learning. Suggestions for the future research are that further research can be done based on the perceptions of other parties involved in online learning and this study used only a mailed questionnaire to gather data. But future research can be done based on methods like personal interviews to collect thedata. It would be supported to get the most reliable data.

References

Bali, S., & Liu, M. (2018). Students' perception toward online learning and face-to-face learning courses.

Liaw, S., & Huang, H. (2013). Perceived satisfaction, perceived usefulness and interactive learning environments as predictors to self-regulation in E-learning environment, Computers and Education. *60(1)*, pp. 14-21.

Platt, C., Raile, A., & Yu, N. (2014). Students' perception of the equivalence of online classes vs face-to-face classes.

Sakina, & Uyun, K. (2020). Integrating technologies in the new normal: A study of blended learning.

Sun, P., Tsai, R., Finger, G., Chen, Y., & Yeh, D. (2008). What delivers a successful E-Learning? An empirical investigation of the critical factors influencing learners satisfaction. pp. 1183-1202.