

Identifying the students' satisfaction of online learning activities using the factor analysis: A case study

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Education is one of the sectors which mostly effected due to the current pandemic situation. In this context, online learning contributed a lot for students to continue their education. Therefore, the purpose of this study was to determine the impact of online learning activities on satisfaction of the students. An explorative factor analysis was done in order to discuss the students' perception on online learning. To identify the factor solutions for the set of 24 observed variables, the data was gathered through an online survey using 165 respondents who follow a particular course module which randomly selected out of the course modules offered by the department of Mathematics, University of Ruhuna. This online questionnaire was initially distributed to all the students who registered for the course module. According to the results, there were 87.5% students who satisfied with online learning. Using the factor analysis, 24 observed variables have been reduced to six independent factors; quality of the lecturer, attitude of the student, method of online assessments, online learning resources, learning environment and enthusiasm of the students. In this analysis, principal component extraction method and varimax rotating method were used to identify the above factors. According to the Bartlett's Test (p -value = $0.000 < 0.005$) it was confirmed that the original variables are correlated and the factor analysis is useful with data. The validity of factor analysis was determined using the Kaiser-Meyer-Olkin (KMO) statistics with a value of 0.761 (> 0.6). Identified six independent factors would be important to have more satisfaction of online courses and by focusing on these identified factors, teacher can change the method of teaching where necessary, to offer a better online learning environment for students. Overall results indicated in this study would be helpful to take useful decisions in future implementation of online teaching and learning process.

Keywords: Bartlett's Test, Factor analysis, Kaiser-Meyer-Olkin (KMO) Test, Online learning.

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