Factors influencing the acceptance of e-book among mathematics and statistics students at universities in Libya


### Abstract

Although the electronic book (e-book) age has nearly reached four decades, many developing countries, such as Libya, are still struggling to use the e-book in the higher education sector. In ensuring the success of the adoption of the e-book in institutions of higher education in Libya, it is very important to examine the factors affecting the acceptance of the e-book. Therefore, the main objective of this research is to investigate the factors affecting the acceptance of e-book amongst Mathematics and Statistics (MAS) students at universities in Libya. The conceptual model, utilising the Technology Acceptance Model (TAM) model, has been extended by ten external factors.

A quantitative approach was used in this research, where a survey was conducted on students taking Mathematics and Statistics at Libyan universities. The researcher selected three universities accredited by the Ministry of Higher Education in Libya. The sample size was 392 respondents. Structural Equation Modelling (SEM) was utilised to test the predictive behaviour of the selected factors of the research model.

Based on the results obtained in this research, ten hypotheses were accepted, while five hypotheses were rejected. In data analysis process, the Confirmatory Factor Analysis (CFA) is used to improve the developed model validity. Thus the measured variables that have a value lower than the recommended value (lower than 0.5) becomes a candidate for removal (Hair et al., 2010). Therefore, the factor of language has been excluded, and its hypothesis was cancelled. Students' Attitude was the only factor that has a strong direct effect on students' Behavioural Intention. The factors of Perceived Ease Of Use and Perceived Usefulness have an indirect impact on the students' Behavioural Intention through students' Attitude. Moreover, the factors of Self-Efficacy, Social Influence and Facilities also have a significant indirect influence on students' Behavioural Intention via Perceived Ease of Use, Perceived Usefulness and students' Attitude. Furthermore, Perceived Ease of Use considerably influenced the Perceived Usefulness and students' Attitude towards the acceptance of the e-book. Self-Efficacy was the strongest determiner of Perceived Ease of Use; whereas Technical Service had a positive impact on Perceived Ease of Use.

Social Influence and Resistance to Change were significant towards students' Attitude. However, Mobility, Accessibility and Facilities were insignificant toward Perceived Usefulness. Library Service was insignificant upon Perceived Ease of Use, and the Cost was insignificant towards students' Attitude. Finally, in the research model, the results suggest that Resistance to Change is the only factor that has a negative impact on the acceptance of the e-book.
This research confirms that the TAM is a useful theoretical model to understand and interpret students' BI to use e-book, where all of the TAM constructs appear to have a significant impact on the acceptance of e-books among MAS students at universities in Libya. For this reason, there is potential for practical application in the adoption of e-book among MAS students at Libyan universities.

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