E-learning Continuance Usage Intentions: An Expectation Confirmation Theory Perspective

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ABSTRACT

The present study has investigated the determinants of continuance intentions of e – learning apps. The study has followed quantitative research technique. The target population for the present study were the users of e-learning apps. Data were collected using snowball sampling approach. A survey was carried out for data collection process using structured questionnaire. The results have confirmed that the continuance intentions are influenced by satisfaction. Furthermore, the influence of perceived usefulness on satisfaction and continuance intentions is found to be insignificant. App developers are suggested to incorporate interesting features in order to increase the usefulness of the technology. The study provides valuable insights to managers and app developers in order to make learning more effective. This is one of the few studies that have examined determinants of e learning apps using expected confirmation model.

Keywords: E-learning; Perceived usefulness; Confirmation; Satisfaction.

1.0 Introduction

The role of education plays very vital role in the developing nations the way we learn. Thus, in this view electronic are the recent advancements in the field of education industry. Thus, in today's digital era smart devices are come up in the form of e learning apps such as mobile apps for language learning Godwin (2011), mobile apps for science learning Zydney & Warner (2016). E learning technology has got huge recognition due its numerous benefits such as self-contained, convenient, ease associated with technology access information (Briz-Ponce & Juanes-Mendez, 2015). Rossing et al. (2012) talked about that the future of higher education is on mobile apps. Thus, in this view Kim, Heyoung & Kwon, Yeonhee (2012) posited that the wide accessibility of smartphones has encouraged users to adopt mobile applications to learning.

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According to Nascimento, Oliveira, & Tam (2018) mobile apps technology have not studied much in information system context and this area is required to investigate. According to Nascimento, Oliveira, & Tam (2018) adoption of smartphones apps have not studied much in information system context and this area is required to investigate. Based on literature, extant research examines the adoption of e learning and till date no study has examined the determinants of continuance intention. In this regard, to examine the continuance usage intention of e learning devices the present study has adopted confirmation theory expressed by (Oliver, 1980).

Thus the first research question for the present study is Research Question 1: Does the determinants of expectation confirmation leads to continuous intention in e learning apps?

To address the answer of this research question the present study has proposed a model based on the various theoretical model. In addition, the main determinant is identified as satisfaction which has direct influence on continuance intentions. Further, satisfaction is manifested by perceived usefulness and confirmation. Therefore based on this, the purpose of the present study is to identify the key determinants that influence the continuance intentions in context of e learning apps.

2.0 Literature Review

Confirmation theory is also regarded as cognitive theory that explains the satisfaction or dissatisfaction of a product where satisfaction which is determined by perceived usefulness and confirmation (Alawneh et al. 2013; Oliver, 1980) and that leads to repurchase intention or intention to continue using particular service or product.

Kim, Heyoung & Kwon, Yeonhee (2012) talked about the various emerging trends in the field of learning such as mobile-assisted language learning (MALL) and reshaped the learning styles of the users. In TAM perceived usefulness is conjectured as direct determinant of behavioral intention to adopt technology. Previous research studies have confirmed that perceived usefulness (PU) is considered as the essential determinant of technology adoption in context of semantic web technology (Kim, Hebeler, Yoon, & Davis, 2018). Previous research studies have confirmed that perceived usefulness (PU) is considered as the essential determinant of technology adoption in context of semantic web technology (Kim, Hebeler, Yoon, & Davis, 2018). Recent studies found that the positive influence of PU on continuance intentions in context of continuance intentions to use massive open online course (MOOC) and satisfaction in context of information technology (Thong, Hong, and Tam, 2006). Similarly, Joo, So, and Kim (2018) posited that PU had positive influence on satisfaction in context of K-MOOCs.

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Previous research studies have reported that confirmation is the comparison between perceived usefulness of the technology and the actual usefulness (Bhattacherjee, 2001). With the theory of expectation confirmation model (ECM) the conjecture was formed that satisfaction is remarked as essential determinant for technological (learning apps) continuance usage intentions. Furthermore, Satisfaction maybe defined as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (Oliver, 1981). Thus, in this view Guo, Zhu, Barnes, Bao, & Li (2018) found positive influence of satisfaction on brand extension product. Similarly, confirmation is considered as the essential antecedent and eventually it leads to satisfaction (Baharum & Jaafar, 2015). Additionally, Continuance intentions defined as a "long-term viability of an IS and its eventual success depends on its continued use rather than first-time use" Bhattacherjee (2001, p. 351). Continuance intention is the buzz area to study in the context of technology such as (Hsiao & Chiou, 2012; Mouakket, 2015). The emerging interest among researchers to study the continuing information system is step forward to information system community (Guinea & Markus, 2009). Hence, information system continuance is reported as behavioral pattern that reflects the continued use of relevant technology (Limayem et al, 2007).

H1: Perceived Usefulness has a positive influence on continuance intentions of E learning apps

- H2: Perceived Usefulness has a positive influence on satisfaction.
- H3: Satisfaction has a positive influence on continuance intentions.
- H4: Confirmation has a positive influence on Perceived usefulness.
- H5: Confirmation has a positive influence on satisfaction.

3.0 Research Methodology

3.1 Measurement

The present study followed quantitative research technique. The target population for the present study was the users of e learning apps. Data were collected using snowball sampling approach. A survey was carried out for data collection process using structured questionnaire. The survey was conducted on 560 people out of which, 447 participants completed the survey. A total of 292 valid responses were retained for the analysis.

Data was collected on five point scale 1 (strongly disagree) to 5 (strongly agree). To test aforementioned hypotheses Partial least square (PLS) technique was performed. Partial Least Square – Structural Equation Modeling (PLS - SEM) is considered as best technique to measure the variance explained of the entire model. Since, objective of the present study is to measure the predictability of the model. Furthermore, this technique is also considered as variance based technique to estimate the path of the variables (Chin, 1998; Hair et al., 2012).

It helps to examine and confirming the relationships between independent and dependent variables proposed based on robust theory (Hair et al., 2012). In view of the above reasons, this study used PLS-SEM technique to test the developed hypotheses. The analysis part of the present study is divided into two parts one is measurement model and second is comprehensive structure equation model.

In order to ensure the internal consistency and accuracy of the proposed model reliability, convergent and discriminant validity was assessed (Hair et al, 2016). The reliability of the constructs was examined through factor loading was measured. The factor loading values should be more than 0.70 (Fornell & Larcker, 1981) which is confirmed in the present context and proceeded for further analysis (Table 1). Furthermore, the calculated value for the Composite Reliability (CR) for confirmation is 0.933, continuance intentions 0.842, perceived usefulness .96 and .971 satisfaction.

Constructs	Cronbach's Alpha	rho_A	CR	AVE
Confirmation	0.892	0.903	0.933	0.823
Continuance Intentions	0.709	0.832	0.842	0.655
Perceived Usefulness	0.943	0.948	0.96	0.856
Satisfaction	0.956	0.957	0.971	0.919

Table 1: Measurement Model

Furthermore, discriminant validity was determined by doing the square root of AVE (Table 2). This depicts that the confirmation as a construct is different from perceived usefulness (PU) and PU is from satisfaction. Hence, in the present context reliability (Cronbach's Alpha and Composite reliability) and validity is achieved and scale was further utilized to test the structural model. Additionally, convergent validity was also checked where reported values are more that the recommended value 0.60 (Bagozzi and Yi, 1988). Similarly, confirmation is 0.823, continuance intentions 0.655, perceived usefulness .856 and .919 satisfaction. Discriminant validity can be assessed by "comparing the level of square root of AVEs and the correlation between the constructs" (Deng et al., 2014, p. 218).

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Constructs	Confirmation	Continuance Intentions	Perceived Usefulness	Satisfaction
Confirmation	0.907			
Continuance Intentions	0.849	0.81		
Perceived Usefulness	0.991	0.721	0.925	
Satisfaction	0.873	0.877	0.746	0.959

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The reliability and validity of the instrument was confirmed before doing path analysis to test the hypotheses. Thus, this study got value for reliability & validity more than the threshold value as mentioned above. Thus the next step was to test the structural model under proposed hypotheses were tested. In Smart - PLS after running the analysis we have got different value and criteria of testing the hypothesis. In the first hypothesis (confirmation significantly affects perceived usefulness) has original sample is 0.791, the path coefficient is 0.8, standard deviation is 0.078. The value of T statistics, which is obtained by the division of original sample and standard deviation, is 10.173. The p value is 0 hence this hypothesis stands accepted (Table 3).

Since in the next hypothesis where again confirmation has significant influence on satisfaction to use e learning apps was tested. The value of original sample is 0.757 the sample mean is 0.685, and the value of standard deviation is 0.221. The value of T statistics is greater than 1.96, hence this hypothesis is accepted. Additionally, in the third hypothesis value of original sample is 0.151 the sample mean is 0.247, and the value of standard deviation is 0.253. The value of T statistics is greater than .602 and p value is <0.05 resulted not acceptance of hypothesis. The results of the structural model are given in Figure 1.

Hypothesized Relationship	Original Sample	Sample Mean	Std Dev	T Statistics	P Value	Remarks
Confirmation – Perceived usefulness	0.791	0.8	0.078	10.173	0	Supported
Confirmation – Satisfaction	0.757	0.685	0.221	3.429	0.001	Supported
Perceived usefulness – Continuance Intentions	0.151	0.247	0.253	0.602	0.547	Not Supported
Perceived usefulness – Satisfaction	1.47	0.219	0.241	0.609	0.543	Not Supported
Satisfaction- Continuance Intentions	0.763	0.662	0.256	2.982	0.003	Supported

Table 3: Hypothesis Testing

5.0 Discussion and Conclusion

The research objective of the present study discussed in introduction section to examine the effect of perceived usefulness, confirmation, satisfaction on the continuance intentions of e - learning apps usage in Indian context. As show in the above mentioned figure except perceived usefulness to satisfaction and perceived usefulness direct impact on continuance intentions of e learning apps were confirmed. Furthermore, this study suggests that the confirmation and satisfaction are the key determinants of continuance intentions of e learning applications. In line with Bhattacherjee (2001) the effect of confirmation on satisfaction and continuance intentions is consistent. This clearly portrays that user of e - learning apps valued their satisfaction with e learning apps but didn't find much usefulness of the technology.

Figure 1: Results of Structural Model



In the first phase the reliability and validity of the instrument was confirmed before doing path analysis to test the hypotheses. Thus, this study got value for reliability & validity more than the threshold value. Therefore the accessing the technological advancements by consumers are quite interesting to understand. They have pushed their behavior to see the potential benefits of technology along with its usage. Furthermore, the key findings of the study are satisfaction is found the central point in present context. The results confirmed that confirmation is a significant predictor of satisfaction in context of e - learning apps. Additionally, impact of perceived usefulness found insignificant with satisfaction and continuance intentions toward using e learning apps. This signifies that user's of e learning apps haven't found usefulness of the e learning apps and whereas their expectations were confirmed after using this particular technology. Therefore, app developers are suggested to keep usefulness of the technology in mind while developing these apps. They are suggested to introduce more interesting feature with apps and better learning. Further, satisfaction has significant effect on the users' continuance intentions towards e learning apps.

Empirical result of the present study depicted that the apps developers need to improve their responsiveness towards the requirement of the e learning apps users. Hence, expectations of the users of the e learning apps are met and resulted into more satisfaction towards the service offering. 184 MANTHAN: Journal of Commerce and Management, Volume 6, Special Issue

5.1 Research implications

The present study has investigated the emerging research question such as what are the essential determinants of continuance intentions E learning apps. The findings reported that satisfaction in essential part of the model in context to understand the determinants of the continuance intentions of e learning apps. Thus this model can be extended by incorporating other potential constructs in order to make it more explanatory. Furthermore, expectation confirmation model comprises internal motivators or internal driving forces thus studies need to be extended to identify the external motivators. The findings reported that satisfaction in essential part of the model in context to understand the determinants of E learning apps. The theoretical model explains a variance of 77% which reflects the possibility of exploring other potential predictors of continuance intentions. Thus this model can be extended by incorporating other potential constructs in order to make it more explanatory.

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