

**Unleashing Student Power: How Self-Efficacy Drives Digital Learning Adoption**

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### Introduction

The potential benefits of online education are increasingly recognized worldwide. Over the past decade, educational institutions have sought to align teaching practices with technological advancements (Lal, 2020), resulting in a rapid increase in the number of colleges and universities delivering online course content (Dumford & Miller, 2018). Student enrollment in these courses has also risen substantially (Wei & Chou, 2020). Digital technologies have enriched teaching and learning experiences and have been widely embraced by both students and educators (Chow & Shi, 2014). Online learning environments provide opportunities for students to connect with broader communities of learners and engage with course material at their own pace (Aldholay et al., 2018). However, the success of digital learning systems depends largely on students' willingness to use them (Almaiah & Alamri, 2018). Understanding the factors that influence this willingness is essential to ensuring effective and sustainable implementation of digital learning initiatives.

### Conceptual Framework

The Technology Acceptance Model (TAM) is one of the most influential frameworks explaining the acceptance of information systems and is a well-established theory for predicting information technology adoption (Lee et al., 2003). It proposes that perceived usefulness (PU) and perceived ease of use (PEOU) shape users' attitudes and behavioral intentions toward technology adoption. The model has been validated across multiple contexts (Lee et al., 2011) but primarily emphasizes technology-related characteristics while overlooking personal factors that may influence adoption. To address this limitation, the present study extends TAM by incorporating self-efficacy as an individual characteristic variable. Self-efficacy reflects an individual's belief in their capability to perform a task and has been identified as a critical factor influencing technology use (Mahdavian et al., 2016). Prior research has shown that higher self-efficacy is associated with stronger motivation, improved learning outcomes, and greater goal achievement (Goulart et al., 2022; Jung et al., 2017). Furthermore, empirical studies indicate that self-efficacy significantly affects both PU and PEOU and plays a mediating role in effective knowledge transfer (Isaac et al., 2017; Park, 2009). Integrating this variable within the TAM framework provides a more comprehensive model for explaining students' willingness to adopt digital learning.

### Purpose and Research Objectives

The purpose of this study was to examine the factors influencing participants' willingness to adopt digital learning by extending the TAM to include self-efficacy as an individual characteristic. Specifically, the study sought to (1) determine how self-efficacy, PU, PEOU, and attitude interact to shape students' behavioral intentions toward using digital learning systems, and (2) assess the predictive power of the extended TAM in explaining these intentions.

## Methodology

The study population consisted of students who attended online classes during the second semester of the 2019–2020 academic year at three agricultural universities. Data were collected using a structured questionnaire ( $N = 480$ ). The sample included 69.6% female and 30.4% male respondents, ranging in age from 18 to 54 years ( $M = 24.5$ ). The questionnaire included two sections: (a) individual characteristics and (b) items measuring self-efficacy, PU, PEOU, attitude, and behavioral intention. All items were rated on a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree). Content validity was confirmed by a panel of experts, and reliability was assessed using Cronbach's alpha, which ranged from 0.82 to 0.94. Data were analyzed using IBM SPSS Statistics (Version 24) and SmartPLS (Version 3.0).

## Results

The extended TAM demonstrated strong predictive power, explaining 74% of the variance in students' behavioral intention to use digital learning. The model also accounted for 65% of the variance in attitude through the combined effects of PU and PEOU, and 51% of the variance in PU.

Addressing the first research objective, results showed that self-efficacy significantly influenced PEOU ( $\beta = 0.594, p < .001$ ) but had no significant effect on PU ( $\beta = 0.002, p = .370$ ). In turn, PEOU strongly influenced PU ( $\beta = 0.623, p < .001$ ). Both PU ( $\beta = 0.469, p < .001$ ) and PEOU ( $\beta = 0.111, p < .001$ ) significantly shaped students' attitudes toward digital learning. Finally, addressing the second research objective, attitude ( $\beta = 0.575, p < .001$ ) and PU ( $\beta = 0.469, p < .001$ ) emerged as the strongest predictors of behavioral intention, confirming the extended model's robustness in explaining students' willingness to adopt digital learning.

## Conclusions & Implications

This study confirms the applicability of the TAM as a robust framework for explaining students' behavioral intentions toward digital learning. By integrating self-efficacy as an individual characteristic, the extended TAM demonstrated strong predictive power and provided a more comprehensive understanding of technology adoption behavior. Consistent with previous work emphasizing the importance of PU and PEOU (Lee et al., 2003; Rahman & Islam, 2016), the findings indicate that students' attitudes and perceptions of usefulness are key predictors of their willingness to adopt digital learning. In line with Bandura's (1988) theoretical perspective, the results also highlight that self-efficacy indirectly contributes to technology adoption by enhancing PEOU and shaping students' attitudes. These findings underscore the importance of fostering students' confidence in using digital platforms as part of broader digital education strategies. Strengthening self-efficacy through training, peer support, and user-centered system design can increase engagement and sustained participation in online learning. For higher education institutions, these insights suggest that promoting technological readiness must involve both infrastructure development and support for learners' psychological preparedness to navigate digital environments effectively.

## References

- Aldholay, A. H., Isaac, O., Abdullah, Z., & Ramayah, T. (2018). The role of transformational leadership as a mediating variable in DeLone and McLean information system success model: The context of online learning usage in Yemen. *Telematics and Informatics*, 35(5), 1421–1437. <https://doi.org/10.1016/j.tele.2018.03.010>
- Almaiah, M. A., & Alamri, M. M. (2018). Proposing a new technical quality requirement for mobile learning applications. *Journal of Theoretical and Applied Information Technology*, 96(19), 6955–6968. <https://www.jatit.org/volumes/Vol96No20/24Vol96No20.pdf>
- Chow, W. S., & Shi, S. (2014). Investigating students' satisfaction and continuance intention toward e-learning: An extension of the expectation–confirmation model. *Procedia - Social and Behavioral Sciences*, 141, 1145–1149. <https://doi.org/10.1016/j.sbspro.2014.05.196>
- Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: Exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, 30(3), 452–465. <https://doi.org/10.1007/s12528-018-9179-z>
- Goulart, E. L., Weymer, A. S. Q., & Moreira, V. R. (2022). The influence of self-efficacy on training effectiveness in cooperative organizations. *Revista de Administração da UFSM*, 15, 331–353. <https://doi.org/10.5902/1983465950935>
- Isaac, O., Abdullah, Z., Ramayah, T., & Mutahar, A. M. (2017). Internet usage within government institutions in Yemen: An extended technology acceptance model (TAM) with internet self-efficacy and performance impact. *Science International*, 29(4), 737–747.
- Jung, K. R., Zhou, A. Q., & Lee, R. M. (2017). Self-efficacy, self-discipline and academic performance: Testing a context-specific mediation model. *Learning and Individual Differences*, 60, 33–39. <https://doi.org/10.1016/j.lindif.2017.10.004>
- Lal, K. (2020). Students' perception towards online learning in higher education: A structural equation modeling analysis. *International Journal of Management*, 11(11), 672–687.
- Lee, Y. H., Hsieh, Y. C., & Ma, C. Y. (2011). A model of organizational employees' e-learning systems acceptance. *Knowledge-Based Systems*, 24(3), 355–366. <https://doi.org/10.1016/j.knosys.2010.11.005>
- Lee, Y., Kozar, K. A., & Larsen, K. R. (2003). The technology acceptance model: Past, present, and future. *Communications of the Association for Information Systems*, 12(1), Article 50. <https://doi.org/10.17705/1CAIS.01250>
- Mahdavian, M., Wingreen, S. C., & Zealand, N. E. W. (2016). The influence of key users' skills on ERP success. *Journal of Information Technology Management*, 27(2), 48–64.
- Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Journal of Educational Technology & Society*, 12(3), 150–162.
- Wei, H. C., & Chou, C. (2020). Online learning performance and satisfaction: Do perceptions and readiness matter? *Distance Education*, 41(1), 48–69. <https://doi.org/10.1080/01587919.2020.1724768>