

# PADLET as e-Learning Tools: Pre and Post Adoption on UTAUT and ECM Model

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**Abstract:** The main objectives of this study are (1) to identify the determinants of pre- and post-adoption using a combination of UTAUT and ECM models; (2) to propose and test the linkage framework of pre- adoption and post- adoption models to understand the student's intention towards PADLET as e-learning tools and (3) to examine the moderation of User Satisfaction of PADLET as e-learning tools. The study considered a cross-sectional approach using a questionnaire survey method. The research model encapsulating pre- and post- adoption, the combination of UTAUT and ECM models on PADLET as e-learning tools was examined using a sample of 121 users. The analysis also comprised mediation analysis. The results identified key antecedents of perceived usefulness, expected effort, social influence, facilitating conditions and trust. Findings also confirmed the partial mediation effects of user satisfaction between confirmation and continuance intention. The key contribution of the study in this form of research progression related to PADLET usage as an e-learning tool tests the extended confirmation model (EECM) in the undergraduate student context by linking the pre- adoption paradigm of an extended unified theory of acceptance and use of technology (UTAUT) with individual mobility and post- adoption dynamics of the ECM.

**Keywords:** PADLET Adoption on E-Learning, Unified Theory of Acceptance And Use Of Technology (UTAUT), Expectation-Confirmation Model (ECM), User Satisfaction, Continuance Intention.

## 1. Introduction

In recent years, the use of Information and Communication Technology (ICT) in education has become widespread. Many educators now incorporate ICT into their classrooms, revolutionizing the way education is delivered and transforming education systems. ICT offers various benefits, such as facilitating material delivery, supporting the teaching-learning process, and assigning tasks to students through online platforms, making the entire process more convenient for both students and teachers. The traditional instructional approach known as "chalk and talk" has ingrained itself as a routine practice among educators during teaching and learning sessions. Nevertheless, as the landscape of education progresses, there arises a necessity for the development of educational systems that transcend reliance on conventional methods like chalk and whiteboards (Azman et al, 2023). Notably, schools in the Western world have made significant investments in ICT infrastructures over the past two decades,

resulting in increased computer usage among students for a wide range of applications. Numerous studies have shown that students who use ICT facilities tend to achieve higher learning gains compared to those who do not use them. By integrating ICT in the classroom, teachers and educators can improve teaching and learning strategies, foster deep learning, and create a learner-centered environment. Proper preparation and familiarity with ICT tools and facilities are crucial for teachers to achieve the best results in technology-based teaching and learning. To enhance the teaching-learning process further, lecturers are exploring the use of specific ICT applications in the classroom, such as Padlet.

Padlet serves as a valuable platform enabling students to interact with both their peers and the teacher regarding class content. It facilitates task assignments by the lecturer, allows for feedback and comments, and enables the entire class to view the work of each college student. Moreover, research indicates that students who utilize ICT facilities tend to exhibit higher learning gains compared to those who don't. In pursuit of enhancing the teaching-learning process, lecturers are incorporating ICT applications into the classroom, including Padlet. Through Padlet, students can easily communicate with their classmates and teachers to discuss class-related matters, while the platform supports task management, feedback, and collaborative sharing of students' work.

Padlet serves as a user-friendly tool for teaching and learning, as highlighted by Fuchs, who mentions its versatility in various classroom applications (Fuchs, 2014). It acts as an additional guide for teachers, making it easier for students to grasp any concepts. Moreover, Padlet provides a platform for students to share their ideas and insights related to the given material. They can complete tasks, offer comments, and revise their work through Padlet, as supported by Fiester and Green (2016), who emphasize its ability to enable communication between students and teachers about class content. In essence, Padlet provides helpful platforms for enriching e-learning experiences. Padlet can additionally augment the efficacy of Open and Distance Learning (ODL) as a pedagogical approach increasingly endorsed by the Malaysian government, particularly amidst the COVID-19 pandemic era (Sarkam N., 2002). In higher education, technology-based or electronic learning (e-learning) is gaining prominence for several reasons, including the growing acceptance of constructivism as a teaching and learning approach and the desire to enhance student engagement.

## **2. Problem Statement and Research Gap**

Current research has aimed to anticipate users' attitudes toward adopting Padlet, utilizing established theoretical frameworks such as the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT), with a primary focus on assessing initial technology readiness. Nonetheless, it has been argued that solely evaluating users' initial perceptions and readiness may not adequately inform adoption behaviors. As a result, perceptions of Padlet may vary between pre- and post- adoption stages.

Despite this, there has been a lack of simultaneous examination of external influences such as social factors and facilitating conditions, along with perceived usefulness, expected effort, and trust in confirming user satisfaction with e-learning through Padlet. Although the literature has highlighted the impact of facilitating conditions on e-learning mechanisms, the correlation between such conditions and confirmation of continued Padlet usage remains largely unexplored. Similarly, studies investigating the link between social influence and confirmation of continued usage are scarce. Thus, post-adoption Padlet e-learning usage remains insufficiently studied, making the adoption and continued usage of Padlet a research interest for academic scholars and educational institutions alike, necessitating examination from both pre and post- adoption perspectives.

To address this research gap, the study poses several key questions, which are: (1) to identify the determinants of pre- and post- adoption using a combination with the UTAUT and ECM model; (2) to propose and test the linkage framework of pre-adoption and post-adoption models to understand the students intention towards Padlet as e-learning tools; and (3) to examine the moderation of user satisfaction of Padlet as e-learning tools.

To contribute to existing knowledge, the research proposes to advance the Expectation-Confirmation Theory by testing an Extended Expectation-Confirmation Model (EECM) in the context of e-learning. This entails integrating the extended UTAUT framework with additional subjective measures of individual e-learning and incorporating post-adoption from the ECM. Additionally, the

study hypothesizes that satisfaction mediates the relationship between confirmation and the intention to continue using Padlet as an e-learning activity. Thus, this research aims to establish a hybrid model integrating UTAUT and ECM-based frameworks to elucidate pre and post-adoption dynamics in Padlet e-learning adoption and continued usage.

### **3. Literature Review**

This research holds significance in distinguishing the theoretical aspects of pre- and post-adoption concerning padlet as an e-learning tools. In this context, UTAUT is recognized for its essential perspective on the pre-adoption stage, while the ECM provides a foundation for examining the post-adoption phase of the padlet adoption.

#### **3.1 Unified Theory of Acceptance and Use of Technology (UTAUT)**

The work of Venkatesh et al. (2003) is highly regarded for its pioneering efforts in synthesizing diverse theories related to technology usage behavior. Their proposal of UTAUT as a definitive model, which also incorporates parsimony and relevant moderators, has been well-received. The model aids researchers and practitioners in considering four crucial constructs “perceived usefulness”, “expected effort”, “social influence” and “facilitating condition” and “trust” as determinants of behavioral intentions, which signify the pre-adoption stage when an individual expresses readiness or confirmation to embrace newer technology (Gupta et al., 2020; Upadhyay et al., 2022).

#### **3.2 Expectation-confirmation Model (ECM)**

The ECM (Expectation-Confirmation Model) asserts that the intention to continue using a service relies on customer satisfaction, which, in turn, is based on perceived performance compared to initial expectations (Trivedi and Yadav, 2020). Satisfaction is considered a crucial variable within ECM when predicting continuance intentions (Bhattacharjee, 2001; Loh et al., 2022). The affirmative confirmation premise leads to positive satisfaction perceptions and fosters the continuance of usage. Conversely, disconfirmation results in negative satisfaction perceptions, adversely impacting continuance (Bhattacharjee, 2001).

Researchers, including Alalwan et al. (2018) and Upadhyay et al. (2022), have observed that users’ expectations mainly stem from performance and effort expectancy, as outlined in the UTAUT framework, during the pre-adoption stage of technology usage. This observation aligns with the foundational works of Bhattacharjee (2001) and Oliver (1980), who contributed to the “expectation-confirmation theory” (ECT) within the ECM (Expectation-Confirmation Model). It emphasizes the need for empirical investigations to explore the relationship between expectation and confirmation drivers and further predict students’ intentions to continue using e-learning tools, such as padlet.

Referring to the existing literature, this research utilizes two well-established theoretical foundations, namely UTAUT and ECM, to explore students’ behavioral intentions concerning the adoption of new technology and related service offerings, as well as their continued usage. In light of this, the study aims to introduce a novel framework called EECM (Extended Expectation-Confirmation Model) to comprehend users’ behavioral intentions toward adopting padlet tools. Additionally, the framework expands its focus on students’ intentions to continue using the padlet tool for their e-learning approach, encompassing both pre-adoption and post-adoption.

### **4. Conceptual Model and Hypotheses**

Figure 1 illustrates the conceptual model encompassing two models related to Padlet adoption in e-learning. The first aspect focuses on the pre-adoption stage or the “expectation” phase of Padlet adoption, analyzed using the UTAUT framework. This framework incorporates key drivers such as perceived usefulness, expected effort, social influence, facilitating conditions, and trust. These drivers were examined in the extended UTAUT framework, representing the pre-adoption phase of Padlet adoption in the e-learning process.

Additionally, the research considers the post-adoption phase, occurring after adopting the Padlet as an e-learning tool, employing the EECM (Extended Expectation-Confirmation Model). This phase comprises fundamental constructs of confirmation, satisfaction, and continuance intention, which is user satisfaction as mediation of the study.

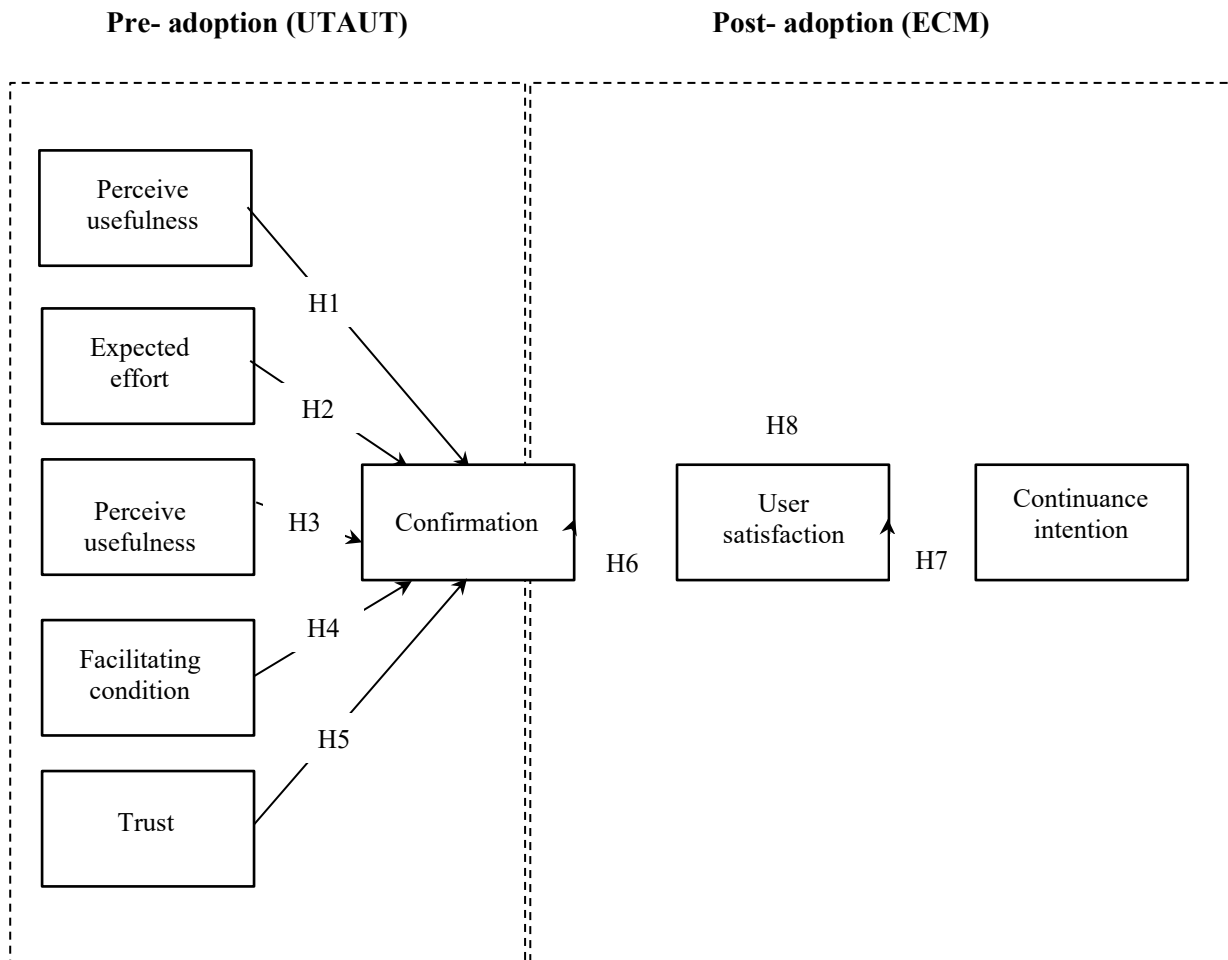


Fig. 1 Conceptual Model

## 5. Methodology

### 5.1 Research Measurement

The operationalization of the conceptual framework commenced with the creation of a questionnaire divided into three sections. The first section began with a note of appreciation for the respondents' participation, assuring them of the confidentiality of their responses solely for academic research purposes. The second part aimed to gather information about respondents' demographic details, such as gender, age, course, and name of the university. The final section of the questionnaire consisted of eight construct items, evaluated using a seven-point Likert scale, ranging from 1 ("Strongly disagree") to 7 ("Strongly agree"). These items were utilized to measure the underlying constructs examined in this study. The items for "perceived usefulness", "expected effort", "facilitating conditions", "social influence" and "trust" were adapted from Singh et al. (2020). The scales for "confirmation" and "satisfaction" were adapted from Zhou (2013). Lastly, the measurement items for "continuance intention" were derived from Venkatesh et al. (2012).

## **5.2 Sample and Data Collection**

The survey was conducted through an online medium, to reach the population of undergraduate students in universities in Malaysia who have experience in using Padlet as an e-learning method in their classes. The online data collection process was conducted by utilizing purposive sampling, which is a non-probabilistic approach. The survey links were given through WhatsApp, Telegram and emails were sent to undergraduate higher education students through academic staff affiliated with leading colleges and universities located in Northern regions of the country. The students need to answer the survey by giving their thoughts on pre- and post- experiences on using Padlet about 7 weeks into the semester.

After accounting for outliers and excluding uniform responses, a total of 121 valid responses were considered suitable for further analysis. The sample size met the requirements for employing multivariate techniques and adhered to the recommended conditions of normal distribution by Kline (2017) and Hair et al. (2012).

## **6. Analysis and Results**

The proposed model underwent testing through structural equation modeling (SEM), which included a measurement model to assess the reliability and validity of the underlying measures. The subsequent structural model was then analyzed to test the hypotheses. Prior to this, the data were thoroughly examined to identify any missing or uniform responses, outliers, and normality-related issues, following the recommended methods by Hair et al. (2012). The data cleaning process involved using cross-tabulation, boxplot, skewness, and kurtosis to prepare for SEM analysis.

### **6.1 Measurement Model**

Confirmatory factor analysis (CFA) was employed to analyze the measurement model, aiming to evaluate the reliability, validity, and dimensionality of the measurement items (Kaushal et al., 2021). The internal consistency of the reliability measures, specifically average variance extracted (AVE), for all latent factors, ranged from 0.599 to 0.863, surpassing the threshold of 0.50. The results of composite reliability (CR) also exceeded the recommended cut-off of 0.70, ranging from 0.715 to 0.921. Consequently, the findings satisfied both the conditions of internal consistency and convergence consistency of reliability (Hair et al., 2012).

Table 1 demonstrates that the factor loadings of measurement items (ranging from 0.684 to 0.938) exceeded the recommended cut-off of 0.60, confirming the adequacy of the constructs' dimensionality and structure for conducting multivariate analysis (Kline, 2015). Additionally, the measurement model was evaluated through goodness of fit indicators. The model fit indicators, including  $\chi^2/df$  (chi-square divided by degrees of freedom) at 2.53, GFI (Goodness of Fit Index) at 0.909, AGFI (Adjusted Goodness of Fit Index) at 0.884, IFI (Incremental Fit Index) at 0.963, NFI (Normed Fit Index) at 0.688, CFI (Comparative Fit Index) at 0.963, and RMSEA (Root Mean Square Error of Approximation) at 0.052, all fell within acceptable levels, confirming the adequacy of the measurement model fit (Hair et al., 2012).

The validity assessment based on the average variance extracted (AVE) of all latent variables surpassed the minimum threshold of 0.50 (ranging from 0.599 to 0.863), as per Hair et al. (2012), thereby confirming convergent validity. Furthermore, discriminant validity was evaluated following Kline's (2015) guidelines. As observed in Table 2, the square root of the AVE for each factor exceeded its shared variance, satisfying the requirement for discriminant validity.

**Table 1.** Reliability and Validity Test

Construct	Item	Loadings	CR	AVE
Continuance Intention	CI1	0.908	0.886	0.814
	CI2	0.885		
	CI3	0.912		
Confirmation	CO1	0.894	0.872	0.784
	CO2	0.896		
	CO3	0.866		
Expected Effort	EEa1	0.794	0.722	0.599
	EEa2	0.836		
	EEa3	0.684		
Facilitating Condition	FCa1	0.795	0.715	0.636
	FCa2	0.862		
	FCa3	0.729		
Perceive Usefulness	PUa1	0.904	0.856	0.773
	PUa2	0.901		
	PUa3	0.830		
Social Influence	SIa1	0.844	0.765	0.655
	SIa2	0.838		
	SIa3	0.742		
Trust	TRa1	0.938	0.918	0.849
	TRa2	0.934		
	TRa3	0.891		
User Satisfaction	US1	0.925	0.921	0.863
	US2	0.928		
	US3	0.933		

\*Abbreviations: AVE (Average Variance Extracted), CR (Composite Reliability)

\*All the loading factors showed more than 0.7, AVE > 0.5, CR > 0.7, showing that the measures are valid and reliable.

**Table 2.** Discriminant Validity Analysis

	1	2	3	4	5	6	7	8
1 Confirmation	0.831							
2 Continuance Intention	0.727	0.835						
3 Expected Effort	0.826	0.757	0.802					
4 Facilitating Condition	0.784	0.785	0.092	0.804				
5 Perceive Usefulness	0.729	0.699	0.079	0.742	0.756			
6 Social Influence	0.075	0.716	0.734	0.129	0.086	0.846		
7 Trust	0.793	0.823	0.678	0.737	0.609	0.708	0.854	
8 User Satisfaction	0.092	0.764	0.075	0.751	0.714	0.838	0.830	0.673

## 6.2 Structural Model

The structural model was estimated, and its goodness of fit indicators, explanatory power, and hypotheses testing for direct and indirect paths, including mediation and moderation, were examined. Additionally, variance inflation factors (VIFs) were evaluated and found to be lower than the recommended threshold of 5.0 (Hair et al., 2012), indicating the absence of multicollinearity in the model. The coefficient of determination (R<sup>2</sup>) was analyzed using SmartPLS 4 to assess the explanatory power of the research model. The results revealed that three endogenous variables, namely

“confirmation” (0.60), “satisfaction” (0.58), and “continuance intention” (0.77), displayed their respective R2 values in the model. These findings indicated that the exogenous variables related to UTAUT jointly accounted for 60% of the total variance in “confirmation” during the pre-adoption phase. Additionally, in the post-adoption phase of using Padlet, the fundamental constructs of ECM, with “confirmation” as the main determinant, predicted 58% of the total variance in “satisfaction”. Furthermore, “continuance intention”, as the primary dependent variable, was jointly explained by its significant precursors, “confirmation” and “satisfaction”, directly and indirectly, contributing to 77% of the total variance. Thus, the results confirmed the robust predictive power of the research model in both pre and post-adoption stages. Finally, hypothesis testing was conducted to analyze the direct and mediation paths in the proposed framework using SmartPLS 4, as detailed in the subsequent sections.

### 6.2.1 The Results of Direct Effects

Table 3 presents the results of direct paths, which were mostly positively significant, with one exception. The relationship between social influence and confirmation (H3) was not supported in the pre-adoption phase, following the UTAUT approach. Among all the direct paths, the link between confirmation and satisfaction (H6:  $\beta = 0.833$ ,  $p < 0.001$ ) exhibited the highest significance in the overall model. Following this, the direct path between satisfaction and continuance intention (H8:  $\beta = 0.726$ ,  $p < 0.001$ ) and the relationship between effort expectancy and confirmation (H2:  $\beta = 0.215$ ,  $p < 0.001$ ) were also highly significant. These results affirm that confirmation plays a crucial role as the primary predictor of satisfaction, and satisfaction, in turn, acts as a precursor to continuance intention. This supports the ECM framework in the context of Padlet and e-learning.

Furthermore, the findings indicate that expected effort (H2:  $\beta = 0.215^*$ ) and trust (H5:  $\beta = 0.451^{**}$ ) had positive effects on confirmation during the pre-adoption or confirmation phase of Padlet, as shown in Table 3. However, perceived usefulness (H1:  $\beta = 0.119$ ), social influence (H3:  $\beta = 0.122$ ), and facilitating condition (H4:  $\beta = 0.012$ ) did not demonstrate a significant effect on confirmation. These results strongly support the modified version of the UTAUT and EECM in the emerging e-learning concerning the adoption of Padlet or related platforms (Alalwan et al., 2018).

**Table 3.** Results of Direct Effect

	Hypothesis	Std. Beta	Std. Error	t-value	Decision	LL	UL
H1	Perceived Usefulness -> Confirmation	0.119	0.128	0.927	Not supported	-0.086	0.331
H2	Expected Effort -> Confirmation	0.215	0.136	1.577	Supported	-0.011	0.437
H3	Social Influence -> Confirmation	0.122	0.141	0.871	Not supported	-0.084	0.379
H4	Facilitating Condition -> Confirmation	0.012	0.152	0.082	Not supported	-0.238	0.265
H5	Trust -> Confirmation	0.451	0.189	2.388	Supported	0.144	0.753
H6	Confirmation -> User Satisfaction	0.833	0.052	16.103	Supported	0.736	0.903
H7	User Satisfaction -> Continuance Intention	0.872	0.046	18.884	Supported	0.78	0.93

### 6.2.2 The Results of Mediation

**Table 4.** Results of Mediation

Hypothesis	Std. Beta	Std. Error	t-value	Decision	LL	UL
H8 Confirmation -> User Satisfaction -> Continuance Intention	0.726	0.075	9.712	Supported	0.59	0.829

Partial Mediation	IV+M->DV			
	IV->DV	IV->M	M->DV	
Confirmation (IV) -> User Satisfaction (M) -> Continuance Intention (DV)	9.712	16.103	18.884	Partial mediation

## 7. Discussion and Conclusion

The present study successfully introduced and validated an integrated model that examines the pre-post dynamics of Padlet as an e-learning adoption. This comprehensive approach involved testing essential factors for an acceptable model fit, as well as exploring moderation and mediation effects. By empirically proving the applicability of combining UTAUT with ECM, the research model has made a significant contribution to both theoretical understanding and practical applications. Initially, the study analyzed the necessity of extending and integrating pre- and post-adoption factors. Subsequently, the interplay between expectation-confirmation, satisfaction, and continuance intention was thoroughly evaluated. Notably, the validation of the satisfaction construct as a pivotal factor remained consistent with existing studies (Tam et al., 2020), where this variable acted as a consequence of confirmation, partially mediating and directly influencing continuance intention. This finding reinforces the importance of satisfaction in the adoption and continued usage of Padlet as an important e-learning tool in university.

The findings indicate that users' satisfaction led to the continuance intention of using Padlet. The results suggest a significant relationship between user satisfaction and the intention to continue using Padlet. This indicates that users who express higher levels of satisfaction with Padlet are more likely to continue utilizing the platform for their educational or professional needs. Such findings underscore the importance of user satisfaction as a determinant factor in the ongoing adoption and utilization of technological tools like Padlet within educational or organizational contexts. Additionally, this underscores the potential role of user satisfaction as a predictor of sustained engagement and usage of technology-mediated learning platforms.

The research outcomes elucidate a discernible relationship between confirmation and user satisfaction in the context of Padlet utilization. Confirmation, in this context, denotes the alignment between users' expectations and their actual experiences with Padlet's functionality, usability, and overall performance. When users perceive that Padlet effectively meets or exceeds their initial expectations, it engenders a sense of confirmation, which, in turn, contributes to their satisfaction with the platform. This result underscores the pivotal role of confirmation in shaping users' satisfaction with technology-mediated learning tools like Padlet. When users experience confirmation, they are more likely to perceive Padlet as a valuable and reliable resource for facilitating collaborative learning, content creation, and knowledge sharing activities. The fulfillment of users' expectations through positive experiences with Padlet's features, interface, and usability enhances their overall satisfaction with the platform. Moreover, the identification of confirmation as a determinant of user satisfaction underscores the importance of managing users' expectations and ensuring consistent delivery of quality service. By aligning users' perceptions with the actual performance of Padlet, educational institutions and technology providers can foster a positive user experience and cultivate a sense of satisfaction among users. Furthermore, understanding the role of confirmation in driving user satisfaction can



inform the design and implementation of strategies aimed at enhancing the usability, functionality, and perceived usefulness of Padlet. By addressing potential discrepancies between users' expectations and the actual capabilities of the platform, developers and educators can optimize user satisfaction and promote the continued adoption and utilization of Padlet for collaborative learning purposes. These research findings emphasize the significance of confirmation in shaping users' satisfaction with Padlet and highlight its implications for fostering positive user experiences and promoting the long-term success of technology-mediated learning environments.

Aside from that, the research findings delineate a significant correlation between trust and the confirmation of Padlet utilization. Trust, in this context, pertains to users' confidence in the reliability, security, and credibility of Padlet as a collaborative learning tool. When users perceive Padlet as trustworthy, it fosters a sense of assurance regarding the platform's capabilities and functionalities, thereby leading to confirmation of its usage. This result underscores the pivotal role of trust in shaping users' perceptions and behaviors concerning technology adoption and usage. The trust serves as a critical determinant in the confirmation process, wherein users' positive perceptions of Padlet's trustworthiness contribute to their confirmation of its utility and effectiveness in facilitating collaborative learning activities. The establishment of trust in Padlet is influenced by various factors, including the platform's reputation, perceived security measures, privacy protections, and the credibility of its developers and providers. Additionally, users' prior experiences with Padlet, as well as recommendations from peers or instructors, can contribute to the formation of trust. Furthermore, the identification of trust as a precursor to confirmation underscores the importance of cultivating trust-building strategies in educational technology initiatives. Ensuring transparent communication, robust security measures, and responsive customer support can enhance users' trust in Padlet and promote their confirmation of its utility and effectiveness. Moreover, understanding the relationship between trust and confirmation can inform the development of interventions aimed at promoting technology adoption and utilization. There's a variety of research support on this positive relationship, where trust plays a pivotal role in technology adoption and continuance intention models. According to the Technology Acceptance Model (TAM) proposed by Davis (1989), perceived usefulness and perceived ease of use are primary determinants of users' attitudes and intentions toward technology adoption. Trust is often considered a key antecedent to perceived usefulness and perceived ease of use in TAM-based models (Lee et al., 2003). In the context of educational technology, trust in the platform provider, system security, and data privacy are particularly salient factors influencing users' confirmation (Lu et al., 2009). Similarly, in the educational technology domain, studies by Alalwan et al. (2017) and Bøe, T. (2018) found a positive relationship between trust and users' confirmation of using e-learning platforms. While specific studies on the relationship between trust and Padlet utilization might be limited, research on similar collaborative learning tools and educational technologies provides valuable insights. For example, studies on learning management systems (LMS) like Moodle or Blackboard often examine the role of trust in users' acceptance and usage behavior (Aldholay et al., 2020; Wu et al., 2017). By fostering trust in Padlet, educators and technology providers can enhance users' confidence in the platform and facilitate its seamless integration into collaborative learning environments. These research findings highlight the crucial role of trust in driving users' confirmation of Padlet utilization and emphasize its implications for promoting positive user experiences and fostering the widespread adoption of technology-mediated learning tools.

The research findings underscore a significant relationship between expected effort and the confirmation of Padlet usage. Expected effort refers to the perceived level of difficulty or effort required by users to utilize Padlet effectively for collaborative learning activities. When users anticipate that Padlet will be easy to use and require minimal effort to navigate and interact with, it contributes to their confirmation of its utility and effectiveness. This result aligns with theoretical frameworks such as the Technology Acceptance Model (TAM), which posits that perceived ease of use influences users' attitudes and intentions toward technology adoption (Davis, 1989). In the context of Padlet, users' expectations regarding the effort required to engage with the platform play a crucial role in shaping their confirmation of its usage. Empirical evidence supports the notion that expected effort significantly influences users' confirmation of technology use. Studies by Venkatesh and Davis (2000) and Venkatesh et al. (2003) found that perceived ease of use, which encompasses expected effort, positively impacts users' confirmation of technology acceptance and usage behavior. Moreover, research specific

to educational technology indicates that users' perceptions of the ease of use of learning platforms are closely linked to their confirmation of usage. Understanding the relationship between expected effort and confirmation of Padlet usage has practical implications for educators and platform developers. By designing Padlet with intuitive interfaces, clear instructions, and user-friendly features, developers can reduce users' perceived effort and enhance their confirmation of the platform's utility for collaborative learning purposes. Additionally, educators can provide training and support to help users overcome any perceived barriers to using Padlet effectively, further reinforcing their confirmation of its usage. By addressing users' expectations regarding the effort required to engage with Padlet, educators and platform developers can promote its adoption and integration into educational settings. These research findings highlight the importance of expected effort in shaping users' confirmation of Padlet usage and underscore its implications for promoting positive user experiences and facilitating the effective implementation of collaborative learning tools in educational contexts.

For mediation results, it is found that user satisfaction mediates confirmation of using Padlet to continuance intention. The mediation relationship suggests that user satisfaction acts as a mediator between confirmation of using Padlet and continuance intention. In other words, confirmation influences continuance intention not only directly but also indirectly through its impact on user satisfaction. When users perceive Padlet as confirming their expectations and meeting their needs, they are more likely to experience satisfaction with the platform. This, in turn, enhances their intention to continue using Padlet in the future. User satisfaction serves as a crucial mechanism through which confirmation influences continuance intention. Positive confirmation experiences foster feelings of satisfaction among users, reinforcing their positive attitudes and intentions toward Padlet. User satisfaction reflects the fulfillment of users' expectations and the perceived value derived from using Padlet, which, in turn, motivates them to continue utilizing the platform for their educational or collaborative endeavors. The mediation result underscores the importance of user satisfaction as a key factor mediating the relationship between confirmation of using Padlet and continuance intention. By addressing users' confirmation experiences and fostering satisfaction with the platform, educators and platform developers can promote sustained engagement and utilization of Padlet for collaborative learning activities.

Among these positive results, surprisingly there are also negative relationships of these research hypotheses. The results indicate that perceived usefulness, social influence and facilitating condition do not significantly affect confirmation of using Padlet. The result implies that these indicators experiences with Padlet may be driven by other factors. This highlights the complexity of users' decision-making processes and the need to consider multiple factors influencing technology adoption.

## **8. Limitations and Recommendations for Future Research**

Future studies should acknowledge various limitations inherent in this research. While the present study concentrated on Padlet as an educational and collaborative learning tool to enhance classroom engagement, as documented in previous literature (Baidoo et al., 2022; Deni & Zainal, 2018; Dewitt, 2015; Dianati et al., 2020; Frison & Tino, 2019; Jong & Tan, 2021; Nadeem, 2021; Ramachandiran & Mahmood, 2018; Zainuddin et al., 2020; Waltemayer & Hammond, 2021; Borisovna & Bladimirovna, 2015; Kimura, 2018), this study extended its mediation analyses by integrating two established models. However, future research may benefit from a focus on categorical levels, and exploring the moderation effect of latent factors, such as satisfaction, in the relationship between expectation confirmation and continuance intentions, could yield valuable insights. Moreover, the sample predominantly consisted of individuals from the millennial age group, which necessitates caution when generalizing the findings. Subsequent studies could enhance understanding by ensuring a more balanced representation across age groups, encompassing youth to elderly populations, thereby revealing new perspectives on technology adoption. Consequently, the proactive involvement of students has the potential to enhance both their comprehension of course materials and their academic performance within the classroom setting (Othman et al., 2023).

## 9. Co-Author Contribution

The authors have declared that there are no conflicts of interest regarding this article. Author 1 was involved in developing the research methodology, performing statistical analysis, interpreting the results, and supervising the writing of the entire article. Author 2 contributed by writing the literature review, Author 3 handled the fieldwork, and Author 4 was responsible for data entry.

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