# INTENTION TO USE ONLINE LEARNING MANAGEMENT SYSTEMS AMONG UNIVERSITY STUDENTS

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## ABSTRACT
The objectives of this research are as follows: 1) To study the factors influencing students' perceptions of benefits, ease of use, satisfaction, and intention to use the online learning management system at the institution of higher education. 2) To investigate satisfaction as a mediating variable between perceived benefits and intention to use the online learning management system among students at the institution of higher education. 3) To examine satisfaction as a mediating variable between perceived ease of use and intention to use the online learning management system among students at the institution of higher education. The study population comprises 500 students from the institution of higher education. Data was collected through questionnaires and analyzed using descriptive statistics, including frequency distribution, percentage, mean, and standard deviation. Inferential statistical analysis used frequency distribution, percentage, mean, standard deviation, and structural equation modeling techniques. The study findings reveal that perceived benefits do not significantly influence students' satisfaction with online learning. Perceived benefits have no statistically significant effect on student's intention to use the online learning management system at the institution of higher education. However, perceived ease of use significantly affects students' satisfaction with online learning at a significance level of 0.05.
**Keywords:** Factors Affecting Intention, Learning Management Systems, Online Systems, Private Higher Education Institutions

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## INTRODUCTION

The current management of teaching and learning following the COVID-19 crisis has led educational institutions to adapt their teaching formats to align with the pandemic, as announced by the government and the Ministry of Public Health. This includes the management of teaching and learning through online platforms, as evidenced by various research studies such as those by Chakraborty et al. (2021), Peimani & Kamalipour (2021), Zheng et al. (2021), and Gopal et al. (2021). The research indicates that managing teaching and learning through online platforms enables teachers and students to proceed with learning activities smoothly without disrupting the academic semester or the educational system of the ministry. However, there is a discrepancy in the effectiveness of teaching and learning (Chakraborty et al., 2021). In other words, there is a decrease in learning efficiency compared to traditional teaching methods. This could be attributed to various factors such as online media, student-related factors, content used for online teaching, or even the internet infrastructure, which collectively impact learning effectiveness. However, with the rapid development of online teaching and learning platforms by educators, students, and educational systems, the previous challenges have been mitigated, and new challenges have emerged. For instance, there is a decrease in students' intention to participate in online learning activities (Zheng et al., 2021) because online teaching often emphasizes one-way communication, where teachers conduct classes without much student interaction, resulting in reduced collaboration or even no collaborative activities. Consequently, the current learning situation has decreased students' intention to use online learning systems. This, in turn, has prompted many educational institutions and educators to strategize and devise methods to attract students' interest in returning to using online learning systems. This is because online education offers benefits such as time and cost savings in commuting to and from the institution (Gopal et al., 2021) and provides learners and instructors with more time for other activities after online classes. These factors highlight that although the COVID-19 situation may be improving and allowing educators and students to return to everyday life, online teaching and learning remain crucial for individuals' lives in the new normal. Therefore, research aimed at enhancing the benefits of online education remains essential.

To promote education through online teaching and learning, educators and educational institutions must pay attention to and focus on the resources used for online channels. They should emphasize the benefits of learning technology online and, most importantly, help learners understand, access, and engage in online learning. These benefits should stem from the institution's strategic thinking process. One of the most popular strategies adopted since around 2017 is recognizing the benefits of using technology. It is undeniable that technology plays a crucial role in everyone's life nowadays, and people adapt to and utilize technology 24/7. Based on the research by Baker-Eveleth and Stone (2020) on users' perceptions of perceived usefulness, satisfaction, and intentions of mobile application usage, it is evident that perceiving benefits from technology help users recognize the importance of integrating technology into their daily lives. Additionally, deriving benefits from technology significantly influences intentions to use it. Individuals' influence on technology for learning is crucial in this process of perceiving technology. When individuals assign significant importance to technology for learning, they are more likely to develop intentions to use online learning technology. In addition, the study conducted by Abu-Taieh et al. (2022) investigated perceptual learning about factors influencing the perceived benefits and effectiveness of integrating e-learning systems during the COVID-19 pandemic using SEM and ML techniques, with a focus on Jordan (An empirical study of factors influencing the perceived usefulness and effectiveness of integrating e-learning systems during the COVID-19 pandemic using SEM and ML: A case study in Jordan), it was similarly emphasized that the perception of benefits needs to be created and stimulated through individuals who want to make others aware of the benefits. If

individuals perceive the technology they use to have significant benefits, they will likely lead themselves to the intention to use it. In this regard, exploring perceived benefits is crucial and necessitates a study of technology. Individuals' awareness of benefits depends on the technology they use. If the technology implemented by an organization facilitates users in accomplishing tasks quickly and efficiently, users will perceive the most significant results. Consequently, they will be more inclined to use it without difficulty (Abu-Taieh et al., 2022).
In addition to perceived benefits influencing the intention to use, the ease of use will drive learners to have the highest intention to use online educational systems. This means learners' ability to access the institution's online learning system depends mainly on the website and the design of the user interface. Educational institution administrators must design interfaces to accommodate various usage patterns for teaching materials with different levels of complexity, making it easy for both instructors and students to use. Looking back at the COVID-19 pandemic period in 2020-2021, it was found that instructors and students faced challenges in using online systems, leading to difficulties in controlling teaching and learning schedules and content delivery (Abu-Taieh et al., 2022). The main problems stemmed from instructors' lack of readiness in preparing online content, insufficient time for content preparation, inadequate teaching equipment, internet signals, and institution-specific teaching software that is not user-friendly—these issues inconvenience and burden instructors and users alike (Xin et al., 2023).
From the above article, when analyzing the variables of perceived benefits of using technology and perceived ease of use, which affect the intention to use online learning systems, another variable that influences decision-making regarding the use of online learning systems is user satisfaction. This factor is considered necessary for both students and teachers because if the system encounters problems and continues to operate, it may result in no one using it anymore. Therefore, satisfaction is considered a factor that helps continuously improve the quality of online learning systems (Huang, 2021). In this regard, institutions and developers of online media networks for teaching should continuously check user satisfaction. This is because, in each term, teachers and students encounter different problems. However, the level of satisfaction with the online teaching system varies among individuals. These variations pose another challenge that significantly influences the intention to use. From the research by Han and Sa (2022) on acceptance and satisfaction with online educational classes through the Technology Acceptance Model (TAM) in the context of COVID-19 in South Korea, it has been stated that Satisfaction is something intangible but can be measured by creating metrics through attitudes towards a particular thing or service. This can be achieved using carefully crafted questions to minimize data inaccuracies and obtain helpful information for improving that service or system. The ultimate goal is to enhance the quality and deliver maximum user satisfaction. Failure to adapt and meet user expectations for satisfaction may result in users switching to alternative providers. This holds for educational institutions as well. Suppose students find it difficult to access online services provided by the institution and face persistent connectivity issues. In that case, they may become dissatisfied with the online learning system and opt for traditional learning methods. These challenges reflect a failed development of the education system, and ultimately, a particular educational institution may be disrupted by others with better competitive potential in the future (Han & Sa, 2022).
It can be seen that paying attention to students' intentions in using online learning systems is crucial for all aspects of the institution. Institutions need to create awareness of the benefits of using online systems to let students understand the true objectives they will gain from using online network systems for learning (Zheng et al., 2021). Emphasizing ease of use and prioritizing system quality through continuous network development to enable students to access information and learning optimally (Abu-Taieh et al., 2022) leads to the highest student satisfaction in attending classes. These are the core principles of teaching and learning because

when students are satisfied with attending classes through online systems, they will want to continue using online systems for learning indefinitely (Huang, 2021).

In summary, for institutions to cultivate students' intentions to use online learning management systems, they must pay attention to and develop various aspects. This includes highlighting the benefits of using technology in online learning, implementing user-friendly systems that require minimal effort to log in or connect, and establishing signal networks for faculty members within the institution to stream teaching videos in a quality, stable, secure, and accessible manner to all learners. Creating high levels of satisfaction among students is paramount because it is undeniable that if students do not experience convenience in their learning, they will be less likely to engage with the system. It might affect the institution's marketing efforts in attracting prospective students because current students may spread word of mouth within their social circles about their perception and satisfaction with studying within the institution. Therefore, it can be said that the variables of perceived benefits, perceived ease of use, satisfaction, and intention to use online learning management systems are interconnected and influential. For this reason, researchers are interested in studying all of these variables, leading to the research project "Factors influencing students' intention to use online learning management systems in universities." The aim is to understand students' satisfaction levels and identify issues with using the system to gather data for improvement. The goal is to enhance the quality of online learning systems, instill confidence in their usage, and ultimately develop a sustainable online learning platform that allows students to study conveniently from anywhere, ensuring continuous quality learning experiences online.

## LITERATURE REVIEWS

### Theory of Perceived Benefits

The theory related to the Unified Theory of Acceptance and Use of Technology (UTAUT), which in this theory, Venkatesh et al. (2012) expanded the concepts of TAM by incorporating social and psychological factors, such as social influence and performance expectancy. All of these factors influence perceived benefits. This theory is a synthesis and enhancement of various existing theories regarding technology acceptance, such as the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), and Theory of Planned Behavior (TPB), aiming to create a more robust and comprehensive model for predicting technology acceptance behavior. For the UTAUT theory, four main factors influence the intention to accept and use technology: 1) Performance Expectancy is similar to perceived usefulness in TAM, referring to users' belief that using technology will enhance their performance. This is the most influential factor in determining the intention to use technology. 2) Effort Expectancy relates to the user's perception of the ease or difficulty of using technology. This perception should not create complexity or difficulty for users. 3) Social Influence refers to the extent to which users feel that significant others believe they should use the technology. This concept is similar to the Social Norm in TRA and TPB. 4) Facilitating Conditions refer to the level of belief that users have appropriate environmental conditions and resources to support their use of technology, including technical support when needed.

In addition, UTAUT also proposes variables that influence these relationships, such as age, gender, experience, and occupation, which help to understand the different responses of different population groups to new technologies. UTAUT theory has been widely accepted as a practical framework for predicting the acceptance and use of technology in various contexts. It is often used in technology management and educational research (Adams et al., 1992).

### Theory of Perceived Ease of Use

Perceived ease of use is part of the Technology Acceptance factor, which forms the foundation for studying perceived ease of use. In this regard, it is essential to revert to the principles and core theories that lead to the perception of ease of use to study perceived ease of use. The

Technology Acceptance Model (TAM), developed by Davis, Bagozzi, and Warshaw in 1989, is one such theory that evolved from the Theory of Reasoned Action (TRA) by Ajzen. The Technology Acceptance Theory studies the factors influencing the acceptance or decision-making to adopt new technologies or innovations. Meanwhile, Keni (2020) explained technology acceptance concerning website purchasing decisions, describing the principles and rationale of individuals in accepting technology for digital media use. This aids in predicting individual behavior in technology acceptance and information communication, leading to explanations and understanding of the influence of factors causing technology acceptance, aligning with the definition by Kurniawan et al. (2022) , which states that technology acceptance is the process whereby individuals learn through education. It involves perception and acceptance, occurring when individuals learn independently, and the learning proves beneficial, leading them to invest in or choose to use the technology confidently. Moreover, Foster and Rosenzweig (2010) mentioned that expectations drive the full utilization of technology. Individual acceptance starts from awareness and exposure to technology, being persuaded to accept, deciding to accept or reject, acting on the decision, and confirming the action, which may take time depending on critical factors such as individual characteristics and technology features.

**Theory of User Satisfaction**

Customer Satisfaction stems from consumers' recent experiences with technology usage, which were viewed positively. Each consumer may derive different satisfaction levels from using different technologies, including how technology is integrated into their daily lives. Furthermore, satisfaction with technology extends to the service received from network providers. For instance, using communication tools or devices that rely on signal transmission necessitates network service access. Customer satisfaction is influenced by past experiences with technology usage, which shape customers' perceptions of satisfaction. Each customer forms perceptions of satisfaction when they benefit from technology and networks or when technology, akin to goods or services, meets or exceeds their prior expectations. Moreover, customer satisfaction is paramount to various sectors, including business and education. Because in the business sector, customer satisfaction impacts the organization's sustainability. If customers are unsatisfied, they will not purchase products or services, rendering the organization unable to continue operating. Similarly, suppose consumers, i.e., students, are not satisfied with the learning management system in the education sector. In that case, the institution fails to adapt to changing behaviors and trends in the digital age. Ultimately, one dissatisfied learner may tell others that the institution fails to meet their needs. Consequently, future learners may opt not to enroll in the institution. Thus, the importance of generating satisfaction stems from three components: 1) service quality, 2) product quality, and 3) processes.

Factors influencing customer satisfaction can be identified through studying the factors that affect customer satisfaction. This provides insights for development and improvement and ways to prevent issues that may impact customer satisfaction (Kesumahati & Jurnali, 2020). These factors can be detailed as follows: 1) Service Quality: Customers' expectations determine service quality, which they evaluate based on observable factors. 2) Price: Customers use price as a minimum criterion to measure service quality, expecting what they receive to be worth the value of the money paid. 3) Environmental Factors: Such as economic conditions, market volatility, changes in competition, etc. 4) Personal Factors: Attitudes, understanding, and emotions towards the service, for example. 5) Product Quality: Products used alongside services contribute to service quality. Quality services often accompany quality products, leading to customer satisfaction.

**Theory of Planned Behavior**

Kotler and Armstrong (2023) stated that the Theory of Planned Behavior consists of five steps, which are as follows:

Step 1: Awareness of Needs is the starting point of the purchasing process, in which buyers become aware of problems or needs. Internal stimuli, such as hunger, or external stimuli, such as marketing tools may stimulate these needs. In this stage, marketers may advertise their products by motivating consumers to see the necessity of purchasing them (Kamp Albæk et al., 2020).

Step 2: Seeking Information is a step where consumers begin to manage risks by gathering information from various sources, such as personal contacts like family and friends, commercial sources like advertisements and salespeople, and public sources like mass media. Alternatively, consumers may start reviewing information from past experiences with products they have encountered. Stimulated consumers engage in seeking information to assess alternatives. In this regard, if the product information is credible or the brand has a good reputation, consumers may consider product quality as a criterion for evaluating alternatives (Kamp Albæk et al., 2020).

Step 3: Evaluating Alternatives occurs after receiving information. Initially, it involves making a purchase decision for a particular product. Subsequently, the decision-making process evolves to selecting a brand. In this context, marketers must understand the reasons behind alternative evaluation and utilize these reasons to devise strategies to facilitate purchase decisions. Consumers attempt to rationalize their evaluation of alternatives by considering various factors, such as product quality, and comparing the advantages and disadvantages of similar products to aid in decision-making (Kamp Albæk et al., 2020).

Step 4: Purchase Decision-making. In this step, customers assess all facts, including logical conclusions drawn from data aggregation, advertising experiences, and business marketing efforts. Customers perceive it as the best option and thus make a purchase decision. Consumers typically rank preferences for different brand options and form purchase intentions. Generally, consumer purchase decisions favor their preferred brands (Kamp Albæk et al., 2020).

Step 5: Post-purchase Behavior. In this step, customers evaluate whether their expectations for the product match what was advertised or if the product meets or exceeds the information received. This step is crucial as it determines whether there will be repeat purchases. It involves the relationship between consumer expectations and product performance. If the product exceeds customer expectations, it can lead to satisfaction. Satisfied consumers may reference the product to others and persuade them to follow suit, generating admiration for a similar product (Kamp Albæk et al., 2020).

**Conceptual Framework**


**Figure 1** Conceptual Framework

# RESEARCH METHODOLOGY

**Population**

The population used in this research consists of students from the top 10 private universities with the highest student enrollments in the Bangkok Metropolitan Region, under the jurisdiction of the Office of the Higher Education Commission, Ministry of Higher Education, Science, Research, and Innovation. These institutions collectively enroll a total of 281,128 students, based on the 2023 academic year enrollment data submitted by each higher education institution to the Ministry of Higher Education, Science, Research, and Innovation (MHESI) (Ministry of Higher Education, Science, Research, and Innovation, 2024).

**Sample**

The sample group for this research comprises 500 students from the top 10 private universities with the highest student enrollments in the Bangkok Metropolitan Region. This sample size is considered "Very Good" according to the criteria established by Comrey and Lee (1992). The sample size was determined for research utilizing structural equation modeling. Through simulation studies and the development of statistical formulas, it has been found that the sample size for structural equation modeling can vary widely according to statistical criteria. For this research, the sample size was determined following the guidelines provided by Comrey and Lee (1992), which set appropriate sample sizes for different adequacy levels.

**Data analysis**

1) Analyzing data using descriptive statistics and checklist-type questionnaires involves finding frequencies and summarizing them into percentages. Mean and standard deviation (S.D.) are calculated for rating scale questionnaires.

2) Analyzing structural equation models (SEM) using the PLS Graph 3.0 software (Chin, 2001) for hypothesis testing.

# CONCLUSION

1) It was found that perceiving benefits does not significantly influence satisfaction with using the online learning management system among university students. This result is consistent with the research of Numpon Yimalee (2017), which investigated the perception of ease of use, perceived benefits, and electronic word-of-mouth influence on the intention to use movie and series streaming applications among Gen Y consumers in Bangkok. It was found that perceiving convenience benefits did not significantly affect the intention to use movie and series streaming applications.

2) Perceiving benefits directly influence intention to use, with a coefficient of 0.427, statistically significant at the 0.05 level. This finding is consistent with the research hypothesis, which suggests that perceiving benefits has a positive relationship with intention to use. It is also in line with the studies of Luarn and Lin (2005) and Gu et al. (2009), which suggest that perceiving benefits is a significant factor influencing the intention to use mobile phone transaction services.

3) The ease of use of online learning significantly influences student satisfaction, which is consistent with the research conducted by Piyaphat Phusiri et al. (2019). Their study investigated the perceived benefits, perceived risks, perceived ease of use, and attitudes affecting consumer acceptance of stem cell technology. They found that the perceived ease of use significantly influences consumer acceptance of stem cell technology.

4) The statistical analysis results do not allow us to conclude that Perceived Ease of Use (PEOU) directly influences Intention to Use. This finding does not support the research hypothesis, which suggests that Perceived Ease of Use (PEOU) positively correlates with Intention to Use. This may be due to students choosing to learn online based primarily on the benefits they perceive from online learning and their familiarity with using various online applications on smartphones or tablets in their daily lives. Therefore, perceived ease of use

(PEOU) does not directly influence intention to use, consistent with the study by Shin and Kang (2015) on mobile learning systems in university-level online education, which affected satisfaction and learning performance. They found that the perceived ease of use of mobile learning systems did not directly influence the intention to use the system but indirectly influenced it through its perceived benefits. This is because learners intend to use mobile learning systems due to perceived benefits being the primary consideration and because students enrolled in online learning are already familiar with mobile learning. Therefore, perceived ease of use (PEOU) is not a directly influential factor in intention to use, even though perceived ease of use (PEOU) may not directly influence intention to use (Intention to Use). However, when statistically analyzing the indirect effects, it was found that perceived ease of use (PEOU) indirectly influences intention to use (Intention to Use) through perceived usefulness (PU), with a coefficient of 0.083, statistically significant at the 0.05 level. It also indirectly influences intention to use (Intention to Use) through perceived enjoyment (PE), with a coefficient of 0.071, statistically significant at the 0.05 level. This is consistent with the Technology Acceptance Model (TAM) original study by Davis et al. (1989), where perceived usefulness (PU) was assumed to influence intention to use (Intention to Use). However, perceived ease of use (PEOU) indirectly influences intention to use (Intention to Use) through perceived usefulness (PU) (Park et al., 2012). This finding aligns with the study by Park (2009) on the acceptance of E-Learning technology among university students in Korea, which found that perceived ease of use (PEOU) does not directly influence intention to use E-Learning systems but indirectly influences intention to use (Intention to Use) through attitudes towards E-Learning, referred to as E-Learning Attitude

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1) Perceived benefits of online learning: Institutions offering online learning should provide clear knowledge about the benefits and purposes of online learning. This will foster a positive attitude towards online learning, cultivate the intention to learn, and enable students to effectively utilize the knowledge gained from the lessons.

2) Ease of use of online learning: Institutions implementing online learning systems should consider the usability of the system, whether it is suitable for users or not. This includes considering the system's ease of use to facilitate convenience for learners, aiming to create user satisfaction and consistently attract learners' interest in accessing the system.

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