ANALYZING FACTORS INFLUENCING BENEFICIARIES' INTENTION TO USE E-LEARNING OF NON-PROFIT ORGANIZATION IN THAILAND

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Abstract

This study investigates the factors which are computer self-efficacy, perceived usefulness, perceived ease of use, user satisfaction, personal innovativeness, and attitude that influence intention to use e-learning management systems among 500 vulnerable women attending non-profit organizations in developing countries. Employing a quantitative research design, the study involved the distribution of self-administered questionnaires to the target population for data collection. The index of item-objective congruence (IOC), pilot testing, Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM) were employed to analyze the data to conclude research findings. The study confirmed the hypotheses concerning the significant influence of computer self-efficacy, attitude, user satisfaction, and personal innovativeness on the Intention to use e-learning systems. However, the hypotheses related to the influence of perceived ease of use, perceived usefulness, and the relationship between perceived usefulness and attitude were not supported in this study. In conclusion, findings highlight attitude's significance, necessitating positive technology views. Personal innovativeness and computer self-efficacy emerge as key, emphasizing tailored training. User satisfaction's role in adoption and user-centric design's importance for intuitive platforms were underscored. Contrary to expectations, ease of use's impact was complex. This research guides e-learning implementation in non-profits, promoting empowerment through education for beneficiaries of a non-profit organization.

Keywords: E-Learning, Non-Profit Organization, Personal Innovativeness, Attitude, Intention to Use

Introduction

Education is vital for a nation's growth and human development (Thomas et al., 2020). Non-profit organizations play a crucial role in providing education as a fundamental human right, addressing various challenges. However, quality education's global challenge persists, with e-learning success in developed countries contrasting educational gaps, especially considering that the pandemic necessitated a shift to online learning (UNESCO, 2020).

Incorporating technology, like computers and mobile phones, has transformed education into a student-centered, skill-enhancing process (Kisanjara et al., 2017). E-learning, encompassing terms like online, virtual, and web-based learning, offers flexibility and effectiveness (Roger et al., 2009; Wentling et al., 2000). Studies suggest its superiority over traditional methods, especially in developing economies (Kim & Park, 2018; Mislinawati & Nurmasyitah, 2018).

E-learning offers numerous benefits, particularly for developing countries, where education is crucial for development yet faces challenges due to various factors (Bubou & Job, 2021). Implementing e-learning in developing economies encounters obstacles to technical capacity, infrastructure, information sharing, and technology acceptance. Despite its potential advantages, successful e-learning integration remains limited in these regions (Kim & Park, 2018).

The problem statement highlights challenges in education access: funding, teacher shortages, facilities, gender bias, and conflict-affected environments. E-learning adoption in non-profits can counter these, but financial, experiential, technical, and acceptance challenges in developing nations need more research. This study examines factors affecting the perceived usefulness, perceived ease of use, and the intention to use e-learning by vulnerable women from low socio-economic backgrounds at a Pattaya, Thailand, Fountain of Life Women’s center.

The examination of the E-LMS adoption in developing country NPOs is significant, especially in the context of vulnerable women support. Amidst gender biases, funding shortages, and facilities issues, the study targets enhancing E-LMS adoption to empower women and foster gender equality, aligning with UN SDG 4 (United Nations Department of Economic and Social Affairs, 2022). Understanding the tech needs of women receiving NPO services, this research guides technology enhancement, aiding marginalized women to access quality education and leverage E-LMS for personal and professional growth.

Literature Review

1. Theories Used in the Study

The theories related to the formation of the research framework include the Technology Acceptance Model (TAM), DeLone & McLean Information Systems Success Model

(D&M ISS), the extended Unified Theory of Acceptance and Use of Technology (UTAUT2).

Technology Acceptance Model (TAM) is widely used to explain the way users utilize technologies. It focuses on two fundamental constructs: perceived usefulness, which refers to the user's belief that a particular technology will enhance their performance, and perceived ease of use, which refers to the user's belief that the technology will be effortless (Davis, 1989).

DeLone & McLean Information Systems Success Model (D&M ISS) measures information system success based on six measurement dimensions within three levels of impact: system quality, information quality, service quality, intention to use/use, user satisfaction, and net benefits. It examines the technical, semantic, and influential aspects of the system. The model explores factors influencing user satisfaction and the overall success of the information system (DeLone & McLean, 2016).

Unified Theory of Acceptance and Use of Technology (UTAUT) also seeks to explain user intentions and technology acceptance. It incorporates main four constructs: social influence; effort expectancy; facilitating conditions; and performance expectancy, which represents the perceived benefits and effectiveness of the technology (Venkatesh et al., 2003, 2012).

2. Computer Self-Efficacy (CSE)

Computer self-efficacy, vital in this study, reflects individuals' confidence in practical computer usage, particularly in e-learning. It includes attitudes, beliefs, and expectations related to IT capabilities, significantly impacting the study process (Schlebusch, 2018). Past studies consistently highlight a positive link between computer self-efficacy and perceived usefulness. Lai (2009) on knowledge management system adoption, Teoh et al. (2020) and Wang et al. (2015) on learning performance, social network usage, and learning management systems, respectively, all established this positive relationship. Therefore, this study proposes the following assumptions:

H1: Computer self-efficacy has a significant influence on perceived usefulness of e-learning

3. Perceived Usefulness (PU)

Perceived Usefulness (PU), a Technology Acceptance Model (TAM) cornerstone, captures users' subjective predictions about how technology can enhance work performance. It reflects confidence in technology's efficacy in improving study processes, particularly in e-learning contexts like E-LMS (Van der Heijden, 2003). Lee et al. (2011) validates the perceived ease of use and perceived usefulness connection. Yalcin and Kutlu (2019) echo this in various e-learning and technology contexts. Adewole-Odeshi (2014) correlated Nigerian students' e-learning attitude with perceived usefulness. Consequently, this research put forward a hypothesis:

H5: Perceived usefulness of eLearning has a significant influence on attitude towards using eLearning.

4. Perceived Ease of Use (PEU)

Perceived Ease of Use (PEOU) is a crucial element within the Technology Acceptance Model (TAM), representing an individual's belief in the simplicity of using a technological system PEOU is widely used to assess IT and marketing innovations (Shah & Attiq, 2016). PEOU consistently relates to the Attitude in prior research. Tselios et al. (2011) highlighted its importance in blended study adoption's attitude formation. PEOU's connection to intention to use is supported by the previous studies. Chang et al. (2012) confirmed PEOU's influence on e-learning adoption in Iran. Therefore, below hypotheses are suggested:

H2: Perceived ease of use has a significant influence on perceived usefulness of e-learning.

H3: Perceived ease of use has a significant influence on attitude towards the use of eLearning.

H4: Perceived ease of use has a significant influence on intention to use e-learning.

5. Attitude (AT)

Attitude as an emotional inclination towards technology. Essentially, attitude reflects learners' sentiments about system use an indicator of behavioral intentions (Bertea, 2009). In e-learning, a positive attitude is critical. A favorable attitude drives engagement and productivity (Liaw, 2004). Hussein (2017) verified attitude's influence on the intention to utilize the E-LMS. Keong et al. (2014) found positive attitude toward e-learning predicts the intention to utilize it. Thus, the following hypothesis is postulated for the research:

H6: Attitude towards eLearning has a significant influence on intention to use eLearning.

6. User Satisfaction (US)

DeLone and McLean (2003) define it as fulfillment, impacting system use and linking to users' emotional states. E-learner satisfaction assesses study processes and influences intentions (Wang et al., 2015). According to Lin et al. (2011), user satisfaction drives continued use and adoption. The link between satisfaction and intention to use also holds for mobile learning and e-learning services quality (Theresiawati et al., 2020). In line with a revision of previous studies, the following hypothesis is stated:

H7: User satisfaction has a significant influence on intention to use eLearning.

7. Personal Innovativeness (PI)

Personal Innovativeness (PI) is vital in understanding individuals' intention to use innovations, particularly in technology acceptance. In mobile learning, personal innovativeness drives e-learning adoption (Lu et al., 2005). Twum et al. (2021) connected innovativeness to complete e-learning and emphasized personal innovativeness 's role in online study system adoption in mobile learning, showing readiness for new tech acceptance. Hence, the below hypothesis is developed:

H8: Personal innovativeness has a significant influence on intention to use eLearning.

8. Intention to Use (IU)

In e-learning, intention to use (IU) is students' readiness for adopting digital learning systems (Duan et al., 2012). Intention to use includes using, recommending, and sustaining usage (Udo et al., 2011). In e-learning, IU is influenced by user experience, skills, academic background, perceived usefulness, and ease of use (Venkatesh & Davis, 2000). In the tech acceptance model, IU stems from ease of use and usefulness, explaining 50% of acceptance variation. This intention leads to actual tech use (Barclay et al., 2018).

Research Framework

The conceptual framework of this research is built upon insights from three previous studies, as shown in Figure 1. The first study by Sannegadu et al. (2018) examined the determinants of e-learning adoption in the small island developing state economy of Mauritius. In the second study, conducted by Yakubu and Dasuki (2019), factors affecting e-learning implementation by students in Nigerian universities were explored. Lastly, the third study by Twum et al. (2021) examined determinants of students' intention to use e-learning systems during the Covid pandemic in Ghana's universities.

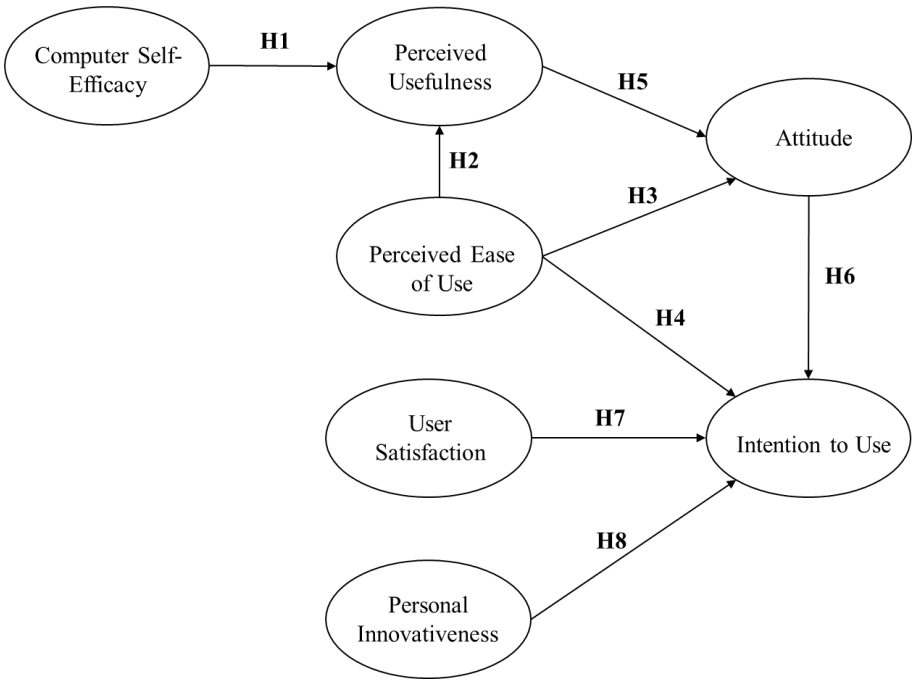

Figure 1 Conceptual Framework

Research Methodology

This study utilized a self-administered quantitative research method, with the researcher developing a questionnaire to collect online and on-site data from respondents. The questionnaires consisted of three sections: screening questions, scale items using a five-point Likert scale to measure factors influencing the perceived usefulness, attitude, and the intention to use E-LMS in non-profit organizations of developing countries, and demographic questions.

Before distributing the survey, the researcher assessed content validity using the project objective consistency index (IOC) with input from three field experts. After implementing improvements based on the IOC analysis, pilot tests with 30 online questionnaires ensured reliability.

Following data collection from the sample population, the researcher conducted the study using convergent and discriminant validity and structural equation modeling (SEM) through SPSS and AMOS, analyzing 500 valid questionnaires to verify statistical findings of confirmatory factor analysis (CFA).

1. Population and Sample Size

The target population for this research consisted of beneficiaries from the Fountain of Life Women Center in Pattaya, Thailand, specifically vulnerable women who have utilized the E-LMS for educational purposes. With seven latent variables and 27 observable variables in this research, a probability level 0.05 was set, leading to a minimum recommended sample size of 425 respondents for SEM (Soper, 2022). In this study, 500 valid data sets were collected, surpassing the minimal requirement.

Three non-probability sampling techniques were applied: judgmental, quota, and convenience. Judgmental sampling defined the most popular direction of E-LMS usage, and the questionnaire was distributed to vulnerable women, beneficiaries of the charity project in Pattaya, Thailand, who have experienced the E-LMS for educational purposes. In the second sampling phase, the researcher considered using a quota sampling technique to determine the size of the population subgroups. Finally, the respondents considered convenience sampling, inviting to participate in the online and on-site questionnaire in sessions designated by the administration of the charity center and the researcher.

Results and Discussion

1. Demographic Information

From the dataset comprising 500 responses, the age distribution revealed: that 4% were 18 to 25 years old, 14% were aged 26 to 35, 35% were in the 36 to 45 age brackets, and the largest segment, at 47%, were 45 or older. Concerning internet experience, 89% reported over six years, 9% had 3 to 6 years, and 2% had under three years. Regarding education, 42% completed professional training, 27% had primary schooling, 28% had secondary education,

and 2% lacked prior education. Regarding nationality, the majority (96%) were Thai, followed by 2% from Laos, Myanmar, and China. Religiously, 91% identified as Buddhist, 4% as Christian, and 5% chose not to specify.

2. Confirmatory Factor Analysis (CFA)

CFA is used to verify convergent validity (composite reliability, factor loading, and average variance extracted) and discriminant validity. Table 1 indicates the internal consistency of constructs satisfying the requirements of a Cronbach's Alpha value greater than 0.70. Furthermore, the factor loading value is greater than 0.5, and the composite reliability is greater than 0.7. (Hatcher & O'Rourke, 2014). In this study, each variable satisfies the criterion of each indicator.

Table 1 Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variable	Source of Questionnaire	No. of Item	Cronbach's Alpha	Factor Loading	CR	AVE
Computer Self-Efficacy (CSE)	Sannegadu et al. (2018)	4	0.861	0.623-0.902	0.853	0.596
Perceived Usefulness (PU)	Sannegadu et al. (2018)	4	0.836	0.689-0.819	0.838	0.565
Perceived ease of use (PEU)	Sannegadu et al. (2018)	4	0.825	0.727-0.882	0.885	0.659
Attitude (AT)	Sannegadu et al. (2018)	4	0.884	0.525-0.949	0.847	0.597
User Satisfaction (US)	Yakubu and Dasuki (2019)	4	0.752	0.719-0.854	0.873	0.633
Personal Innovativeness (PI)	Sannegadu et al. (2018)	3	0.789	0.693-0.986	0.888	0.729
Intention to use (IU)	Sharma et al. (2017)	3	0.839	0.777-0.827	0.840	0.637

Source: Created by the author.

In this study, Table 5 reveals that the square root of Average Variance Extracted (AVE) surpasses the factor's correlation coefficient, indicating strong discrimination validity. Additionally, all the variables confirm both convergent and discriminant validity.

Table 2 Discriminant Validity

	CSE	PU	PEU	AT	US	PI	IU
CSE	**0.772**						
PU	0.039	**0.751**					
PEU	0.143	0.010	**0.811**				
AT	0.507	0.269	0.103	**0.772**			
US	0.055	0.149	-0.095	0.179	**0.795**		
PI	0.465	0.182	0.148	0.106	-0.018	**0.853**	
IU	0.144	0.060	0.120	0.239	-0.061	-0.062	**0.798**

Note: The diagonally listed value is the AVE square roots of the variables.

3. Structural Equation Model (SEM)

Table 3 presents the statistical value of the model's fitness, where CMIN/df = 3.832; GFI = 0.850; AGFI = 0.819; NFI = 0.853; CFI = 0.886; TLI = 0.873, and RMSEA = 0.075. All seven indicators were within the acceptability value, demonstrating a satisfactory fit to the structural

Table 3 Goodness of Fit for Structural Model

Fit Index	**Recommended Value and Source**	**Statistical Value**
CMIN/DF	< 5.00 (Wheaton et al., 1977)	3.832
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.850
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.819
NFI	≥ 0.80 (Wu & Wang, 2006)	0.853
CFI	≥ 0.80 (Bentler, 1990)	0.886
TLI	≥ 0.80 (Sharma et al., 2005)	0.873
RMSEA	< 0.08 (Pedroso et al., 2016)	0.075
Model Summary		**Acceptable Model Fit**

Note: CMIN/DF = The ratio of the Chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index, and RMSEA = Root mean square error of approximation.

4. Hypothesis Testing Result

The results in Table 4 demonstrates that based on the standardized path coefficient, out of 8 hypotheses proposed for the research, all were supported except for H2, H4, and H5.

Table 4: Hypothesis Results of the Structural Equation Model

Hypothesis	Standardized Estimate (β)	t-Value	Result
H1: CSE⟶ PU	0.158	3.055*	Supported
H2: PEU ⟶ PU	-0.007	-0.130	Not Supported
H3: PEU ⟶ AT	0.111	2.285*	Supported
H4: PEU ⟶ IU	0.80	1.378	Not Supported
H5: PU ⟶ AT	0.69	1.378	Not Supported
H6: AT ⟶ IU	0.283	5.746*	Supported
H7: US ⟶ IU	-0.114	-2.306*	Supported
H8: PI ⟶ IU	-0.153	-3.216*	Supported

Note: * = p<0.05.

Source: Created by the author.

H1 was supported concerning the link between Computer Self-Efficacy and perceived usefulness (path coefficient 0.158, t-value 3.055). This consistency with Compeau and Higgins (1995), Liu and Chou (2020), and Teoh and Tan (2020) validates the finding's credibility.

However, H2, which investigated perceived ease of use and perceived usefulness, was not supported (path coefficient -0.007, t-value -0.130), aligning with Awal et al. (2023), Nathania et al. (2021), and Waris et al. (2022) indicating a trend across various contexts.

H3 found a positive and significant relationship (path coefficient 0.111, t-value 2.285) between perceived ease of use and attitude, supported by Koul and Jasrotia (2021), Podsiad and Havard (2020), and Sternad Zabukovsek et al. (2019).

H4 contrasts previous research, indicating perceived ease of use's lack of significant influence on intention to use (path coefficient 0.80, t-value 1.378). This trend aligns with Nathania et al. (2021), Park et al. (2022), and Namungo et al. (2023).

Similarly, H5 revealed no significant influence of perceived usefulness on attitude (path coefficient 0.69, t-value 1.378), differing from earlier research but aligning with Lee et al. (2011), Rahmiati and Yuannita (2019), and Raksadigiri and Wahyuni (2020).

H6 supported the significant influence of attitude on intention to use (path coefficient 0.283, t-value 5.746), consistent with Kuo et al. (2020), Holden and Karsh (2010), and Rahmiati and Yuannita (2019).

H7 validated the significant impact of user satisfaction on intention to use (path coefficient -0.114, t-value -2.306), consistent with Bayraktaroglu et al. (2019) and Liu and Chou (2020), and Abdurrahaman et al. (2019).

Finally, H8 confirmed the significant influence of personal innovativeness on intention to use (path coefficient -0.153, t-value -3.216), consistent with Al-Busaidi (2013), and

Ibrahim et al.(2019)

Conclusions, Recommendations, Limitations and Future Research

1. Conclusions

This study achieves its objectives. The extended versions of the Technology Acceptance Model, DeLone & McLean Information Systems Success Model (D&M ISS), extended version of Unified Theory of Acceptance and Use of Technology (UTAUT2) were employed to construct a comprehensive conceptual framework.

Seven variables, namely Computer Self-Efficacy (CSE), Perceived Usefulness (PU), Perceived Ease of Use (PEU), Attitude (AT), User Satisfaction (US), and Personal Innovativeness (PI), were analyzed to understand their relations within the proposed hypothesis and impact on Intention to Use e-learning (IU) among vulnerable women involved in educational programs conducted by the non-profit organization in Thailand.

The findings of this research revealed significant practical insights. Attitude emerged as a prominent predictor of e-learning system adoption, indicating the necessity of cultivating a positive attitude towards technology. Personal innovativeness and computer self-efficacy were identified as essential factors, suggesting the importance of tailored training and support for building these capabilities among vulnerable women.

The study also underscored the pivotal role of user satisfaction in driving technology adoption and the significance of user-centric design for creating intuitive e-learning platforms. Contrary to conventional wisdom, perceived ease of use did not emerge as a strong determinant of intention to use, emphasizing the complex nature of adoption factors within this demographic.

2. Recommendations

This research enhances our understanding of technology adoption among vulnerable women in the context of non-profit organizations. By offering practical implications, the study guides organizations seeking to strengthen the effectiveness of e-learning system implementation, thereby promoting education and empowerment within this crucial demographic. In light of this study's findings, it is crucial to empower vulnerable women in developing countries through e-learning. To achieve this, tailored digital literacy programs should be designed to enhance computer self-efficacy. E-learning platforms must be user-friendly, emphasizing customization and personalization. Continuous user engagement and feedback mechanisms should be established to ensure user satisfaction. Encouraging personal innovativeness and fostering positive attitudes toward technology through workshops and mentorship programs are essential. Additionally, efforts should be made to make e-learning accessible and affordable. Collaboration among various stakeholders, long-term impact assessment, policy advocacy, and ongoing research are vital components of a comprehensive strategy to bridge the digital divide and provide equal opportunities for vulnerable women in

the digital age.

3. Limitations and Future Research

This study has several limitations that warrant consideration. Firstly, its exclusive focus on vulnerable women within non-profit organizations in developing countries might restrict the applicability of findings to broader contexts and demographics. Additionally, the quantitative methodology could limit the depth of insights into participants' viewpoints. A qualitative approach could provide a more comprehensive understanding of the complex factors affecting e-learning adoption. Lastly, the use of self-reported data might introduce response bias and social desirability effects. Future research could incorporate objective measures or diverse data sources to enhance the robustness of results.

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