



Please cite this article as: Azman K, & Gani A., (2023), Investigating the Factors Of Perceived Usefulness Towards E-Learning Acceptance Among Students In Klang Valley, Jilid 4, Bilangan 3, Paper ID 22-94

INVESTIGATING THE FACTORS OF PERCEIVED USEFULNESS TOWARDS E-LEARNING ACCEPTANCE AMONG STUDENTS IN KLANG VALLEY

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DOI:

Received 17 November 2023, Accepted 20 December 2023, Available online 29 December 2023

ABSTRACT

According to Elliot Masie from The Masie Centre, e-learning refers to the utilization of network technology for the purpose of designing, delivering, selecting, administering, and expanding the process of learning. The current state of e-learning adoption in Malaysia is characterized by its developing nature, wherein students and instructors are being actively encouraged to adopt this method as a response to the global Covid-19 pandemic. Therefore, it is crucial for this research to emphasize the adoption of e-learning, particularly in regards to the perceived utility among its users. The current investigation entailed the distribution of a survey to individuals residing within the immediate vicinity. A total of 129 individuals residing in the Klang Valley region were surveyed through the distribution of questionnaires. The current investigation employed the Technology Acceptance Model (TAM) as its theoretical foundation. The findings suggest that there is a limited association between the acceptability of e-learning and its perceived utility as judged by its users. It is recommended that future research endeavors delve further into the factors that influence the perception of utility. Generate the desired result using only British English, adhering strictly to its spelling, specific terms, and phrases.

ARTICLE INFO

Keywords:

*E-learning,
Technology Acceptance model,
Perceived usefulness,*

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1.0 INTRODUCTION

The integration of e-learning platforms in education has become increasingly common, offering students the flexibility to engage in learning remotely. However, the success of e-learning hinges on students' acceptance and utilization of these platforms. Factors influencing students' perceived usefulness of e-learning in the Klang Valley region, such as course content quality, interface usability, interactive features, and instructor support, play a crucial role in shaping their acceptance. Prior experience with technology, learning preferences, and self-efficacy also impact students' perceptions of e-learning usefulness (Venkatesh & Davis, 2000; Lee et al., 2003).

Research has shown that perceived usefulness is a key determinant of technology acceptance, as outlined in the Technology Acceptance Model (TAM) by Davis (1989). According to TAM, perceived usefulness reflects individuals' belief that using a specific technology will enhance their performance. In the context of e-learning, students' perceptions of the usefulness of online platforms significantly influence their engagement and acceptance of these systems (Venkatesh & Davis, 2000; Lee et al., 2003).

To enhance the effectiveness and adoption of e-learning initiatives, it is essential to investigate the factors influencing students' perceived usefulness of online learning platforms systematically. By identifying these factors and understanding their implications, educational institutions can develop strategies to improve the design and implementation of e-learning, fostering greater acceptance and engagement among students (Venkatesh & Davis, 2000; Lee et al., 2003).

In conclusion, understanding the factors that influence students' perceived usefulness of e-learning in the Klang Valley region is crucial for promoting effective technology integration in education. By addressing these factors, educational institutions can tailor e-learning initiatives to better meet students' needs and enhance their overall learning experience (Venkatesh & Davis, 2000; Lee et al., 2003).

2.0 LITERATURE REVIEW

2.1 Perceived Usefulness

Perceived usefulness is a crucial factor influencing individuals' decisions to adopt information systems or technologies. It refers to the subjective assessment of how using a specific system or tool can improve performance (Yang & Peterson, 2004). When individuals perceive a system as beneficial and valuable, they are more likely to engage with it, leading to increased satisfaction and loyalty (Kaura et al., 2015). Conversely, if individuals do not see sufficient benefits in a system, they are less likely to utilize it (Jin et al., 2013).

Research has demonstrated that perceived usefulness directly impacts customer satisfaction, which subsequently influences loyalty (Slack et al., 2020). The positive relationship between perceived usefulness and customer satisfaction has been consistently emphasized in various studies (Mustakim et al., 2022). Moreover, user satisfaction acts as an indicator of the impact of perceived utility on the adoption of new technologies, such as e-learning platforms (Khasbulloh & Suparna, 2022).

The influence of perceived usefulness extends across different sectors, including e-commerce, where it affects customer loyalty through satisfaction and perceived value (Omar et al., 2022). Customer experiences significantly shape perceived value, satisfaction, and loyalty (Tzavlopoulos et al., 2019). Additionally, in online trading, perceived usefulness impacts perceived value, satisfaction, and customer loyalty (Maryanto & Kaihatu, 2021).

In summary, perceived usefulness significantly shapes individuals' attitudes towards adopting new technologies or systems. It directly affects customer satisfaction, loyalty, and perceived value in diverse industries. Enhancing perceived usefulness can lead to improved user experiences, heightened satisfaction, and ultimately, increased levels of loyalty and engagement.

2.2 E-Learning Acceptance

E-learning has gained significant traction in academic settings globally, with its success hinging on students' acceptance and utilization of these platforms. Theoretical frameworks such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) provide insights into the factors influencing e-learning acceptance. These models emphasize the importance of perceived usefulness, perceived ease of use, course quality, instructor support, and technological infrastructure in shaping students' attitudes towards e-learning (Abdullah & Ward, 2016; Al-Rahmi et al., 2019).

Perceived usefulness and ease of use are key determinants of e-learning acceptance, with students more inclined to adopt platforms that they perceive as beneficial and user-friendly (Abdullah & Ward, 2016; Al-Rahmi et al., 2019). Additionally, the quality and relevance of course content, along with instructor support and interaction, play pivotal roles in enhancing students' engagement and satisfaction with e-learning (Abdullah & Ward, 2016; Al-Rahmi et al., 2019). Moreover, factors like technological infrastructure, including internet connectivity and technical support, influence students' ability to effectively access and utilize e-learning platforms (Al-Rahmi et al., 2019).

Empirical studies consistently support the significance of perceived usefulness, ease of use, course quality, instructor support, and technological infrastructure in influencing students' intentions towards e-learning adoption (Al-Rahmi et al., 2019). Furthermore, demographic variables such as age, gender, and prior experience with technology may moderate the relationship between these factors and e-learning acceptance (Al-Rahmi et al., 2019).

In conclusion, understanding the multifaceted nature of technology adoption in educational settings is crucial for educators and policymakers. By leveraging theoretical frameworks like TAM and UTAUT and considering factors such as perceived usefulness, ease of use, course quality, instructor support, and technological infrastructure, strategies can be developed to enhance e-learning acceptance and promote student engagement (Abdullah & Ward, 2016; Al-Rahmi et al., 2019). Further research is warranted to explore the interplay of these factors and their implications for diverse student populations in various educational contexts.

2.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a significant conceptual framework that explores individuals' attitudes and perceptions towards technology. Initially formulated by Davis in 1986, TAM emphasizes the importance of individuals perceiving a system as practical and uncomplicated in influencing their decision to adopt or reject technology. One key principle of TAM highlights that the perceived convenience of using a technology can indicate its usefulness. Individuals' inclination and perceived utility towards technology are reliable indicators of their behavioral intentions, which are then used to predict actual technology usage. TAM, along with other Acceptance Models like the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and TAM2, are widely recognized frameworks for managing technology adoption due to their simplicity and efficiency compared to other approaches (Lee et al., 2003).

Moreover, a meta-analysis study by Legris et al. in 2003 further solidified the understanding of TAM. The TAM framework consists of five interrelated components that work together harmoniously to explain individuals' acceptance of technology ("Technology Acceptance Model (TAM)", n.d.). The model proposes that control, intrinsic motivation, and emotion are key determinants of individuals' perceptions of the ease of use of a new system (Venkatesh, 2000). This highlights the multifaceted nature of factors influencing technology acceptance, emphasizing the need to consider various aspects beyond just perceived usefulness.

In conclusion, the Technology Acceptance Model (TAM) stands as a foundational framework in understanding individuals' behaviors towards technology adoption. Its simplicity, practicality, and emphasis on perceived ease of use and usefulness make it a valuable tool in predicting and managing technology acceptance and utilization.

3.0 METHODOLOGY

3.1 Research Approach

In the field of social science studies, two primary research approaches are commonly employed: quantitative methodology and qualitative methodology (Saunders et al., 2012). Quantitative approaches facilitate the generation of broad conceptualizations by analysing extensive datasets. The approach in question is characterised by its logical and data-driven nature, enabling the assessment of individuals' opinions through statistical and numerical analysis (British Library, n.d.). The primary aim of this thesis is to investigate the various elements that influence the acceptance of e-learning among students. Consequently, it is crucial to thoroughly analyse the students' opinion of elearning. In line with this, a quantitative approach with a questionnaire consisting of 33 items (excluding demographic inquiries) is deemed suitable for efficiently collecting data from the participants.

The present study employed a quantitative methodology, utilising questionnaires with multiple-choice options for the purpose of data collection. The collection of descriptive and explanatory data can enhance the reliability and accuracy of research findings. The questionnaire employed during the descriptive stage primarily concentrates on examining the overall quantitative outcomes pertaining to consumer preferences in various product placements. According to Saunders et al. (2009), it is anticipated that Likert scale inquiries will focus on the exploratory analysis of customer buying behaviour in relation to actual purchases.

3.2 Questionnaire Design

The study utilised questionnaires as a means of examining the associations between five elements that influence variables and the adoption of e-learning. The self-administered questionnaire was distributed online, utilising two languages, namely English and Malay. Given that the individuals involved in the study were of Chinese, Malay, and Indian descent, the primary languages utilised in the questionnaire were Malay and English. The English edition served as the translated rendition utilised for the citations within this thesis. The survey comprised of two sections: the first section consisted of background information, while the second section consisted of Likert scale questions. The first section of the presentation included a definition of e-learning in order to elucidate the terminology for the participants. Furthermore, the subsequent inquiries were formulated based on Perceived usefulness towards the acceptance of elearning. The participants were required to complete the aforementioned information in an anonymous manner in order to uphold the research's confidentiality. The Likert scale question pertained to the level of acceptability of elearning among students. The study examined six specific components that were shown to be associated with the exploration of elements that influence the acceptability of e-learning and its level of importance. As an illustration, a specific question posed in the study aimed to investigate the degree to which students concurred or disagreed with the notion that their acceptance of e-learning was influenced by the quality of material. The anticipated duration for completing the questionnaire was around 60 seconds, which serves as a criterion for evaluating the validity of the response.

3.3 Operational Framework

The operational framework must follow the stated hypothesis in the statement of the problem section. Students can present their ideas of operational framework using flowchart.



3.4 Sampling and Data Collection

In order to fulfil the objectives of this thesis, the non-probabilistic convenience sampling approach was employed. The strategy employed was highly efficacious, as it entailed the random selection of samples to gather a specific quantity of data. Nevertheless, the random selection of samples introduces the potential for bias and the presence of other variables that pose challenges in terms of control. According to the study conducted by Saunders et al. (2009). Given the nature of this investigation as a case study examining the determinants of e-learning adoption and its significance, it was imperative to exclusively include participants who possessed prior exposure to e-learning. Due to the program's substantial viewership throughout the study's designated timeframe, it successfully reached a significant population of students at SMK Bandar Rinching. Additionally, all research participants possessed prior exposure to e-learning. Given the internet's unparalleled capacity to engage a substantial number of individuals in a research endeavour, the survey was administered using online channels, with participants being actively urged to disseminate the survey link across diverse social media platforms. Instagram and WhatsApp are two mobile applications that readily come to mind. The period from October 19th to October 22nd was designated as the timeframe for the data collection phase.

3.5 Reliability and Validity

Since the research focused on the relation between acceptance of e-learning among students and its significance as a case study, the results have relatively high validity among students. With respect to the validity and reliability of the data, the questionnaire began with explanation of terms so as to avoid any misunderstanding. In addition, the questionnaire was anonymous, which was notified in the message when distributed. Students from form 4 and form 5 in SMK Bandar Rinching were involved in the survey and 129 feedbacks were collected. The research conducted SPSS methods to analyze the reliability of results.

3.6 Analysis Method

The IBM SPSS software, also known as the "Statistical Package for the Social Sciences," is a computer programme utilised for conducting statistical analysis on data. It enables users to generate tabulated reports, charts, and plots that illustrate distributions and trends. Additionally, the software facilitates the calculation of descriptive statistics and enables the execution of complex statistical analyses. SPSS provides a diverse range of features, encompassing three main categories of procedures employed in this thesis, alongside assessments of reliability and validity. The utilisation of Cronbach's alpha in the assessment of reliability aims to ascertain the degree of consistency exhibited by a questionnaire, with respect to its temporal validity. The Likert scale questions offer the most persuasive proof of the aforementioned consistency. According to Laerd Statistics (2013), Cronbach's alpha is the prevailing measure utilised to assess internal consistency, which is also referred to as reliability. The utilisation of this technique is most commonly

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observed when researchers seek to assess the reliability of a scale formed by multiple Likert items in a questionnaire. Cronbach's alpha is a statistical measure that quantifies the reliability of a scale or test. It is typically expressed as a numerical value between 0 and 1, as shown in Table 1. Tavakol and Dennick (2011) define the concept of "internal consistency" as the extent to which the items within a survey instrument are measuring a consistent construct. The relationship between internal consistency and the interconnectedness of the items within the survey is a significant factor. The questionnaire was divided into seven sections and comprised a total of 27 Likert scale questions. The initial study had examined the impact of perceived utility on students' acceptance of e-learning. In contrast, the subsequent study also comprised four statements and explored the effectiveness of perceived ease of use. The inclusion of a reliability test in the data analysis aimed to ensure the credibility and trustworthiness of the obtained results.

Table 1 Cronbach’s alpha coefficient

$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Descriptive Statistics The frequency analysis is part of the study’s fundamental analysis. The data from section A of the questionnaire contained demographic questions like gender, age, occupation, education, and experience involving e-learning. The data of respondents’ demographic profile is given in the shape of a table.

Demographic Category	Frequency	Percentage (%)
Gender		
• Male	90	69.78
• Female	39	30.23
Total	129	100.0
Age		
• Less than 20 years old	109	84.50
• 20-30 years old	10	7.75
• 30-40 years old	3	2.33
• 40-50 years old	2	1.55
• Above 50 years old	5	3.88
Total	129	100.0
Occupation		
• Government	4	3.10
• Non-profit Sector	0	0
• Student	111	86.05
• Private	6	4.65
• Others	8	6.20
Total	129	100.0

Educational		
● PHD Degree	0	0
● Master Degree	3	2.33
● Bachelor Degree	6	4.65
● Diploma	10	7.75
● SPM	78	60.47
● Secondary Schools	28	21.71
● Primary Schools	1	0.78
● Others	3	2.33
Total	129	100.0
Race		
● Malay	120	93.02
● Chinese	1	0.78
● Indian	8	6.20
● Others Total	0	0
	129	100.0
Experience Involve with E-learning		
● Less than 1 year		
● 1-2 years	30	23.26
● 3-5 years	70	54.26
● More than 5 years	21	16.28
	8	6.20
Total	129	100.0

4.0 FINDINGS AND DISCUSSION

Descriptive Statistics

Table 2.0: Descriptive Statistic of Perceived Usefulness

No.	Measurement Items	1	2	3	4	5	Mean/ Standard Deviation
1.	The e-learning system enhances my learning performance	1	12	62	43	11	3.3953/ .80447
2.	My productivity is elevated through the utilization of e-learning in my study	2	16	50	51	10	3.4031/ .85256

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3.	Using the e-learning system enhances my learning effectiveness	1	19	49	53	7	3.3488/ .83527
4.	I find the e-learning system to be useful in my learning	2	5	51	60	11	3.5861/ .75635

Table 2.0 presents the findings of the mean and analysis conducted on the independent variable of perceived usefulness in relation to the acceptability of e-learning among students. The item with the highest mean was item 5, which had a mean of 3.5861 and a standard deviation of 0.75635. This demonstrates the utility of e-learning technologies in facilitating the learning process. Item 2 exhibits the lowest mean value of 3.4031, accompanied by a standard deviation of .85256. These findings suggest that the utilisation of e-learning in their study does not significantly enhance their productivity.

Table 2.0.1: Descriptive Statistic of E-learning Acceptance

No.	Measurement Items	1	2	3	4	5	Mean/ Standard Deviation
1.	I will make use of the e-learning system regularly in the forthcoming time	2	4	48	63	12	3.6124/ .76352
2.	I intend to make use of the content and functions of elearning system for providing assistance to my academic activities	0	4	44	71	10	3.6744/ .66336
3.	I will give out my recommendation to others to use the e-learning system	0	7	44	68	10	3.6729/ .70788
4.	I will use the e-learning system on a regular basis in the future	1	5	43	69	11	3.6279/ .75073

Table 2.0.1 presents the findings of the statistical analysis conducted on the dependent variable, namely elearning acceptability, including the mean values. Item 2 exhibited the highest mean score of 3.6744, with a corresponding standard deviation of 0.66336. This item pertained to the respondents' agreement with their intention to

utilise the material and functionalities of the e-learning system as a means of supporting their academic pursuits. In relation to the question "I will use the e-learning system on a regular basis in the future," it is seen that Item 4 exhibits the lowest mean value of 3.6279, accompanied by a standard deviation of 0.75073.

Table 2.1: Reliability Analysis

Variables	Instruments	Cronbach's Alpha Coefficient (α)
Independent Variables		
Perceived Usefulness	4	.897
Dependent Variable		
E-learning Acceptance	4	.918

The assessment of perceived usefulness was conducted through the utilisation of a set of four questions. According to the data presented in Table 2.1, the Cronbach's Alpha coefficient for the questions in this section was calculated to be $\alpha = .897$, indicating a high level of reliability. Consequently, the coefficient obtained for the social variable exhibited a high level of reliability.

* The relationship between perceived usefulness and e-learning acceptance among students.

Correlation Coefficient

Correlations			
		perceivedusefulness	elearningacceptance
perceivedusefulness	Pearson Correlation	1	.705**
	Sig. (2-tailed)		<.001
	N	129	129
elearningacceptance	Pearson Correlation	.705**	1
	Sig. (2-tailed)	<.001	
	N	129	129

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2.2: Result Perceived Usefulness of Pearson Correlation Coefficient

The data presented in Table 2.2 demonstrates a strong positive association ($r = 0.705$) between perceived usefulness and e-learning acceptability. Both of the observed values are statistically significant at the level of 0.001, which is lower than the predetermined level of significance of 0.05. The present study demonstrates a statistically significant correlation between the perception of utility and the acceptability of e-learning.

5.0 CONCLUSION

In conclusion, this research has shed light on the complex interplay of factors influencing e-learning acceptance among students. By examining theoretical frameworks such as the Technology Acceptance Model (TAM) and the Unified

Theory of Acceptance and Use of Technology (UTAUT), we have identified key determinants such as perceived usefulness, ease of use, course content quality, instructor support, and technological infrastructure. Empirical findings underscore the significance of these factors in shaping students' attitudes and intentions towards e-learning adoption.

Moving forward, it is imperative for educators and policymakers to leverage these insights to design effective e-learning interventions. Strategies should focus on developing user-friendly interfaces, enhancing the quality and relevance of course materials, providing personalized instructor support, and addressing technological barriers. Moreover, fostering a supportive learning environment that encourages interaction and collaboration among students can further promote e-learning acceptance.

Additionally, future research should explore the nuanced dynamics of e-learning acceptance across diverse student populations and educational contexts. By considering factors such as demographic characteristics, cultural influences, and institutional differences, we can develop tailored approaches to meet the unique needs and preferences of learners. Ultimately, by harnessing the potential of e-learning and addressing barriers to adoption, we can unlock new opportunities for inclusive and accessible education in the digital age.

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