Available Online at www.e-iph.co.uk Indexed in Clarivate Analytics WoS, and ScienceOPEN







https://kppim.uitm.edu.my/research/conferences/itmahub-2023 2<sup>nd</sup> International Conference on Information Science, Technology, Management, Humanities, and Business Hotel UiTM, Shah Alam, Malaysia, 26-27 Sep. 2023

Organised by College of Computing, Informatics and Mathematics, UiTM, Malaysia

# e-IPH e-International Publishing House Ltd., United Kingdom

# Factors Influencing User Satisfaction E-Study Public Sector (EPSA) System: The case of civil servant

# Nor Nadia Ali Jinah<sup>1,2</sup>, Farrah Diana Saiful Bahry<sup>1</sup>, Muhamad Khairulnizam Zaini<sup>1</sup>

<sup>1</sup> School of Information Science, College of Computing, Informatics and Mathematics, UiTM Selangor Branch, Puncak Perdana Campus, 40150 Shah Alam, Selangor, Malaysia <sup>2</sup> Department of Department of Information Technology National Institutes of Health (N

<sup>2</sup> Department of Department of Information Technology National Institutes of Health (NIH) Persiaran Setia Murni, Setia Alam, 40170 Shah Alam, Selangor

nadyaresan@gmail.com, farahdiana@uitm.edy.my, nizam0374@uitm.edu.my 019-3244552

## Abstract

The technological era has revolutionized education, making it accessible to all. Malaysia's government introduced E-Study Public Sector (EPSA) as an online learning platform for government servants, but user feedback and satisfaction remain uncertain. A study involving 226 civil servants from the Ministry of Health found moderate learning satisfaction using EPSA. Inferential analysis using partial least square structural equation modeling (PLS-SEM) revealed a significant relationship between perceived ease of use, self-efficacy, and web design and content quality, except for perceived usefulness. The results suggest that e-learner satisfaction factors must be considered for continuous usage intention and organizational technological innovation.

Keywords: User Learning Satisfaction, E-Learning

eISSN: 2398-4287 © 2024. The Authors. Published for AMER and cE-Bs by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer-review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers and cE-Bs (Centre for Environment-Behaviour Studies), College of Built Environment, Universiti Teknologi MARA, Malaysia. DOI: https://doi.org/10.21834/e-bpj.v9iSI18.5464

## 1.0 Introduction

Businesses are adapting to the dynamic needs of modern employees by embracing innovative training methods like e-learning, also known as electronic or online training. E-learning utilizes technology and the internet to offer efficient learning experiences, providing access to educational resources and interactive lessons through digital platforms. Unlike traditional in-person training, e-learning allows flexibility, enabling employees to study at their own pace and location using various devices with internet connectivity. This shift towards e-learning is driven by technological advancements that simplify online training development and access and the need for standardized training across geographically dispersed and remote teams, making it a cost-effective and scalable solution.

Aligning with RMK12's Human Capital Development goals, using EPSA is highly relevant to boosting professional growth and skillbuilding for government personnel. Hence, the importance of civil servants' e-learning and e-government is growing in the traditional provision of digital services and new innovative efforts to overcome the crisis (Khrykov et al., 2020). Circular Services delivers basic

eISSN: 2398-4287 © 2024. The Authors. Published for AMER and cE-Bs by e-International Publishing House, Ltd., UK. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer-review under responsibility of AMER (Association of Malaysian Environment-Behaviour Researchers and cE-Bs (Centre for Environment-Behaviour Studies), College of Built Environment, Universiti Teknologi MARA, Malaysia. DOI: https://doi.org/10.21834/e-bpj.v9iSI18.5464 human resource training to the public sector. According to Bill. 6 of 2005, each Chief Ministry Secretary / Head of Department must ensure that members at all levels attend a course at least seven days per year to improve their minds and attitudes, thereby realizing civil servants' aspirations in the RMK9 human capital development and development.

Because the content and means of public servants' work are constantly changing and growing, e-learning can give a more flexible approach to reacting to new tasks and issues in public life (Khrykov et al., 2020). The Malaysian government uses E-learning platforms, learning management systems (LMS), and digital materials to conduct e-training programs. Mohamed Yusof and Mazlan (2020, September 24) mentioned that the empowerment of EPSA for civil servants can produce competent employees. It also encourages micro-learning and gamification-oriented that can be attracted interest of civil servants. Since the EPSA's establishment in 2007, a total of 203.812 of the 1.4 million government personnel have enrolled as EPSA members.

However, EPSA is not widely used among public officials. These phenomena have raised many questions. Among these are the courses given that do not fit the obligations of government workers, the technology supplied that could be more user-friendly, or civil servants who have no desire or culture for online learning in Malaysia. Perhaps. the EPSA usage either does not meet the expectations of the users or is hardly used. EPSA facilities are also routinely inundated with consumer complaints. These concerns range from technical issues to password issues to course materials. Given the surge in complaints, the legality of the EPSA system and government employees' inability to access course materials online is called into doubt. However, this study aims to analyze factors influencing user satisfaction that related to public servants in Ministry of Health. This research will provide an opportunity to learn more about the problems and factors contributing to the EPSA's ability to train public servants effectively and efficiently. The research objectives are:

- i) To examine perceived ease of use and perceived usefulness has significant with EPSA user satisfaction.
- ii) To examine the relationship between individual factors with perceived ease of use.
- iii) To examine the relationship between individual factor with perceived use-fulness.
- iv) To examine the relationship system factors with perceived ease of use.
- v) To examine the relationship system factors with perceived usefulness.

## 2.0 Literature Review

Online learning, tailored to meet specific organizational goals, is crucial for employee development. Implementing e-learning faces various challenges, including shifting employee mindsets. Numerous factors influence e-learning success in an organization, making it a complex endeavour. Wang et al. (2022) explain that many businesses have created learning management systems (LMSs) to facilitate employees' online training, a long-standing challenge is how to obtain specific training suggestions while taking their demands for potential career growth into mind. According to their research, they are mentioned to improve staff training and development and provide focused research on the understandable, personalized, online course recommendation system.

In addition, the impact of cloud-based services, virtual courses, assessment tools, attitude, content management, and creativity on the effectiveness of workers' e-learning programs based on a framework for the Internet of things (IoT) shows that attitude, content management and creativity are three significant factors affecting employee's learning programs' success, Rahmani et al. (2021).

On the other hand, Čevra et al. (2022) discuss that it contributes to the comprehension of the idea of e-learning in companies, the impact of organizational support on the desire to use e-learning systems, and the ways in which e-learning enhances individual job performance. Due to that, Nasrabadi et al. (2021) also investigated the effect of e-learning through social networks on the performance of employees in the customs of Khorasan Razavi province in Iran. It shows that social networks mediate the relationship between e-learning and employee performance.

Meanwhile, Lee et al. (2011) examined the factors that influence employees' adoption and use of e-learning systems and tested the applicability of the technology acceptance model (TAM) in the organizational context. Their findings indicate that organizational and management support significantly affected perceived usefulness and intention to use.

#### 2.1 Theoretical Framework



Figure 1: Theoretical Framework adopted from Theory Acceptance Model (TAM) from Davis (1989) and IS Success Model DeLone and McLean (2003)

This study uses the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) to analyze technology adoption and implementation in Information Systems (IS). TAM evaluates individuals' decisions about new technology adoption, while TPB is used in marketing research. The study also considers users' views of the system's perceived usefulness and ease of use, focusing on job performance and effort freeness. The research investigates the significance of these concepts and their relationships in understanding EPSA usage using the input, process, and output models from TAM and TPB. As a result, the design of this study is based on the framework development represented in Figure 1.

## 2.1.1 User Satisfaction

DeLone and McLean (2003), who updated Service Quality into their renowned IS Success Model, later emphasized studies on IT user disparity between prior expectations (or some other performance norm) and the actual performance of the product as perceived after consumption." Hunt (1977, p. 459) added an evaluative and process-oriented definition of pleasure to the mix. He defined customer satisfaction as "an assessment that the consuming experience was at least as excellent as it was meant to be." Process-oriented definitions of customer satisfaction imply that an evaluation process is an important component in determining satisfaction.

#### 2.1.2 Perceived ease of use

Perceived Ease of Use is defined as "the degree to which a person feels that utilizing a technology would be quick and easy" (Davis 1989). PEOU refers to the extent to which users think that their ongoing usage of e-government is free of effort in the context of this study. Individuals will be more eager to learn about a system's capabilities and eventually plan to continue using it if it is reasonably straightforward. According to research, PEOU is positively related to the intention to continue learning in the setting of Web-based learning (Chiu & Wang, 2008). As a result, it is hypothesized.

H1: Perceived ease of use significant predicts EPSA user satisfaction.

## 2.1.3 Perceived usefulness

Perceived usefulness is "the degree to which a person feels that utilizing a specific technology would improve her/his work performance" (Davis 1989). PU is considered a direct predictor of behavioral intention to use (BI) of the technology of interest in the TAM framework (Park, et al., 2014). Previous research has found that PU is related with continued intention in the contexts of e-text (Baker-Eveleth & Stone, 2015; Stone & Baker-Eveleth, 2013), instant messaging (Wang, Ngai, & Wei, 2012), and mobile service provider (Abbas & Hamdy, 2015) services for online travel (Li & Liu, 2014) electronic learning (Lin & Wang, 2012) blog for learning (Tang, Tang, & Chiang, 2012). As a result, we generated our hypothesis as follows:

H2: Perceived usefulness significantly predicts EPSA user satisfaction.

## 2.1.4 Individual Factor

## 2.1.4.1 Self-efficacy

Self-efficacy is described as confidence in one's capacity to do a particular activity (Bandura, 2000). Perceived self-efficacy significantly impacts motivation and behaviour (Igbaria & Iivari, 1995). Computer self-efficacy, according to Compeau and Higgins (1995), indicates "an individual's views about his or her competence to utilize a computer in the execution of a task, rather than reflecting mere component expertise." In order to discover whether internet efficacy has a major influence on digital library usage, this study attempted to investigate if internet efficacy has a significant effect on digital library usage. Limited research has looked at self-efficacy as another explanatory variable for an individual's usage of IS (Compeau & Higgins, 1995; Igbaria & Iivari, 1995). Igbaria and Iivari (1995) investigated the influence of computer self-efficacy on computer use. They discovered that computer self-efficacy had a high direct effect on perceived ease of use but only a weak indirect effect on perceived usefulness via perceived ease of use. This study hypothesis, based on this argument:

H3: Individual factor significantly predicts perceived ease of use.

H4: Individual factor significantly predicts perceived usefulness.

#### 2.1.5 System Factors

## 2.1.5.1 Website design

Refer to the Quality of the framework based on IS architecture. The quality elements in the IS architecture are chosen from the perspectives of the user and the IS Developer based on different abstraction layers and views. The relevant abstract levels (rows) in Zachman's IS architecture are requirement analysis, system analysis, system design, implementation, and deployment. In this approach, the following requirement quality criteria (specified in) are relevant: completeness, consistency, and accuracy.

## 2.1.5.2 Quality of content

E-content encompasses all forms of material generated and supplied via electronic means. E-content is accessible in a wide range of disciplines and at nearly every level of schooling. A wide range of learners with varying requirements, backgrounds, prior experience, and ability levels may utilize it. Peltier et al. (2007) discovered that course material was the most critical factor influencing the quality of an e-learning experience. Yang et al. (2005) developed a five-factor scale to measure the quality of online material. The five factors evaluated were usability, usefulness of material, sufficiency of information, accessibility, and interaction. The most significant of these five criteria in developing the second-order component was usability (overall service quality). Miyazoe and Anderson (2010) examined the relationship between course design, interactivity, and satisfaction. The authors observed that the most critical factor was the information's quality.

This study hypothesis, based on this argument:

- H5: System factors significantly predicts perceived ease of use.
- H6: System factors significantly predicts perceived usefulness.

## 3.0 Methodology

This research used a quantitative approach to collect and analyze numerical data to support its research objectives and hypotheses. The study's population consisted of government officers who completed a course at EPSA and were either taking other courses at EPSA or not taking any other courses. The responses were gathered from 226 civil servants in the Ministry of Health, Malaysia. Following the recommended sample size, this research should have 218 respondents. A total of 300 questionnaires will be sent in order to achieve the necessary sample size. The questionnaires will be distributed by the researcher at Ministry of Health, Malaysia. This is a cross-sectional study and the data analyzed using the Smart PLS 3.0 software since the EPSA is continually updated, the data collecting period will be limited to one month in order to prevent response fluctuation. It disseminates the questionnaire using the Google Form to industrial training students according to the population. Based on the aims, the purposive sampling technique was applied on this study. Respondents were asked to fill 30 items adapted from various study. The measures for each item in the questionnaire are predicted according to the Likert Scale, with 1 for "Strongly Disagree" to 5 for "Strongly Agree."

## 4.0 Results

The partial least squares (PLS) approach was used to assess empirical data acquired, which is appropriate for a model containing formative indicators for latent variables (Chin, 1998). The measurement model is evaluated first, followed by the construct validity and reliability of the measures. The structural model containing hypotheses is next tested. The statistical analysis procedure consisted of a two-phase approach in which the psychometric qualities of all scales were initially tested using confirmatory factor analysis (CFA), and the structural links were confirmed using bootstrap analysis.

## 4.1 Measurement Model Assessment

This study uses Smart PLS 3.0 (Ringle et al., 2004) to test its measurement and structural model, assessing its psychometric properties and structural parameters. Validity and reliability are evaluated through internal consistency reliability, indicator reliability, convergent validity, and discriminant validity. The findings are presented in subsections, presenting the findings for each analysis used to evaluate the model's validity.

## 4.1.1 Internal Consistency Reliability and Convergent Validity

A measurement model has satisfactory internal consistency reliability when each construct's composite reliability (CR) exceeds the threshold value of 0.7. Table 1 shows the Cronbach alpha value, Rho A, CR, and AVE of each construct. The CR for this study ranges from 0.991 to 0.997, and this is above the recommended threshold value of 0.7. Thus, the results indicate that the items used to represent the constructs have satisfactory internal consistency reliability. The AVE values ranged from 0.956 to 0.979, which exceeded the recommended threshold value of 0.5. This result shows that the study's measurement model demonstrates adequate convergent validity.

	Table	1: Ave Value		
	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Individual factor_	0.989	0.989	0.991	0.956
Perceived Usefulness_	0.992	0.992	0.994	0.970
Perceived ease of use_	0.990	0.990	0.992	0.962
System Factors_	0.996	0.996	0.997	0.967
User Satisfaction on EPSA_	0.995	0.995	0.996	0.979

## 4.1.2 Discriminant Validity

In this study, the measurement model's discriminant validity is assessed by using two measures: 1) Fornell and Larcker's (1981) criterion and 2) cross-loading. Thus, to determine the first assessment of measurement model's discriminant validity, the AVE value of each construct is generated using the SmartPLS algorithm function. Then the square roots of AVE are calculated manually. Based on the results, all square roots of AVE exceeded the off-diagonal elements in their corresponding row and column. The bolded elements in Table 2 represent the square roots of the AVE and non-bolded values represent the intercorrelation value between constructs. Based on Table 2, all off-diagonal elements are lower than the square roots of AVE (bolded on the diagonal). Hence, the result confirmed that the Fornell and Larker's criterion is met.

Table 2: Inter-correlation Matrix.					
	Individual factor_	Perceived Usefulness_	Perceived ease of use_	System Factors_	User Satisfaction on EPSA_
Individual factor	0.978				

Perceived Usefulness_	0.936	0.985			
Perceived ease of use_	0.965	0.968	0.981		
System Factors_ User Satisfaction on EPSA_	0.955 0.938	0.987 0.987	0.979 0.975	0.983 0.983	0.989

\* Square root of the AVE on the diagonal (bold)

The second assessment of discriminant validity is to examine the indicators' loadings with respect to all construct correlations. The output of cross loadings is produced by the SmartPLS algorithm function. Table 3 shows the output of cross-loading between constructs and indicators. Table 3 also shows that all measurement items load higher against their respective intended latent variable compared to other variables. The table also demonstrated that the loading of each block is higher than any other block in the same rows and columns. The loading clearly separates each latent variable as theorized in the conceptual model. Thus, the cross-loading output confirmed that the second assessment of the measurement model's discriminant validity is satisfied. This study, therefore, concludes that the measurement model has established its discriminant validity.

Table 3: The Cross Loading Output Using Smart PLS						
ltem	Individual	Perceived	Perceived ease of	System Factors_	User	
	factor_	Usefulness_	use_		Satisfaction	
					on EPSA_	
PE1	0.959	0.940	0.985	0.958	0.946	
PE2	0.936	0.950	0.974	0.951	0.956	
PE3	0.965	0.954	0.990	0.967	0.958	
PE4	0.955	0.942	0.986	0.963	0.951	
PE5	0.918	0.963	0.969	0.962	0.969	
PU1	0.931	0.984	0.966	0.978	0.975	
PU2	0.940	0.984	0.968	0.986	0.975	
PU3	0.913	0.989	0.947	0.969	0.975	
PU4	0.926	0.988	0.960	0.972	0.977	
PU5	0.900	0.981	0.928	0.957	0.959	
QC1	0.950	0.967	0.968	0.983	0.965	
QC2	0.942	0.974	0.965	0.984	0.969	
QC3	0.941	0.974	0.959	0.984	0.970	
QC4	0.947	0.973	0.972	0.989	0.973	
QC5	0.931	0.971	0.959	0.982	0.968	
SE1	0.982	0.920	0.954	0.942	0.924	
SE2	0.983	0.916	0.950	0.936	0.919	
SE3	0.975	0.907	0.931	0.924	0.905	
SE4	0.985	0.917	0.952	0.938	0.922	
SE5	0.965	0.917	0.932	0.930	0.917	
US1	0.933	0.979	0.973	0.979	0.987	
US2	0.933	0.977	0.972	0.972	0.991	
US3	0.916	0.975	0.956	0.967	0.991	
US4	0.927	0.978	0.960	0.970	0.990	
US5	0.931	0.974	0.963	0.975	0.989	
WD1	0.941	0.974	0.969	0.987	0.972	
WD2	0.942	0.973	0.960	0.983	0.965	
WD3	0.937	0.972	0.954	0.983	0.964	
WD4	0.936	0.962	0.963	0.981	0.961	
WD5	0.927	0.966	0.958	0.978	0.961	

Overall, the reliability and validity tests conducted on the measurement model are satisfactory. All reliability and validity tests are confirmed, and this is an indicator that the measurement model for this study is valid and fit to be used to estimate parameters in the structural model.

#### 4.2 Structural Model

The following subsections discuss the tests used to assess the validity of the structural model for this study. The validity of the structural model is assessed using the coefficient of determination (R2) and path coefficients. In addition, this study also assesses the mediation relationships that are being proposed in the research model.

## 4.2.1 Coefficient of Determination (R2)

In this study, SmartPLS algorithm function is used to obtain the R2 values, while the SmartPLS bootstrapping function is used to generate the t-statistics values. For this study, the bootstrapping generated 500 samples from 226 cases.

Referring to Figure 2 and table 4, individual factor (self-efficacy), system factors (quality of content and web design) are able to explain 97.5% of the variance in Perceived Usefulness. Meanwhile, individual factor (self-efficacy), system factors (quality of content and web design) are able to explain 96.9% of the variance in Perceived ease of use. Finally, 98.0% of the variance in user satisfaction on EPSA is explained by individual factor (self-efficacy), system factors (quality of content and web de-sign).



Figure 2: Structural Model

Table 4:	R Square (R2) values	
	R Square	R Square Adjusted
Perceived Usefulness_	0.975	0.975
Perceived ease of use_	0.969	0.969
User Satisfaction on EPSA_	0.980	0.980

#### 4.2.2 Path Coefficients

Within the structural model, each path connecting five latent variables represented a hypothesis. Based on the analysis conducted on the structural model allows the researcher to confirm or disconfirm each hypothesis and understand the strength of the relationship between dependent and independent variables.

Using the SmartPLS algorithm output, the relationships between independent and dependent variables were examined. However, in SmartPLS, in order to test the significant level, t-statistics for all paths are generated using the SmartPLS bootstrapping function. Based on the t-statistics output, the significant level of each relationship is determined. Table 5 lists down the path coefficients, observed t-statistics, and significance level for all hypothesized path. Using the results from the path assessment, the acceptance or rejection of the proposed hypotheses is determined. The testing of the proposed hypotheses is discussed in the next section.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Values	P Values	Decision
Individual factor> Perceived Usefulness_	-0.080	-0.085	0.051	1.570	0.117	Not Support
Individual factor> Perceived ease of use_	0.342	0.342	0.072	4.768	0.000	Support
Perceived Usefulness> User Satisfaction on EPSA_	0.685	0.687	0.059	11.590	0.000	Support
Perceived ease of use> User Satisfaction on EPSA_	0.311	0.310	0.059	5.262	0.000	Support
System Fac-tors -> Perceived Use-fulness_	1.064	1.068	0.048	22.096	0.000	Support
System Fac-tors> Perceived ease of use_	0.652	0.652	0.071	9.170	0.000	Support

#### 4.2.3 Hypotheses Testing

The path coefficient between five latent variables is assessed to validate the proposed hypotheses and the structural model. Based on previous studies, the path coefficient value needs at least 0.1 to account for a specific impact within the model (Hair et al., 2011; Wetzels et al., 2009). Assessment of the path coefficient (refer to Table 6) shows that all proposed hypotheses are supported, except for hypothesis H4 and hypothesis H4a. From the analysis, supported hypotheses are significant, at least at 0.05, have expected sign directions (i.e., positive) and consist of a path coefficient value ( $\beta$ ) ranging from 0.080 to 1.064.

Based on the analysis, it shows that User Satisfaction is influenced directly by Perceived ease of use ( $\beta$ =0.311, t=5.262, p<0.05) and Perceived Usefulness ( $\beta$ =0.685, t=11.590, p<0.05). As a result, hypothesis H1 and hypothesis H2 are supported. From the analysis, Perceived ease of use is influenced directly by Individual Factor ( $\beta$ =0.342, t=4.768, p<0.05) and System Factors ( $\beta$ =1.064, t=9.170, p<0.05). As a result, hypothesis H3 and H5 are supported. Meanwhile, Perceived Usefulness influenced directly Individual Factor ( $\beta$ =-76

	Table 6: Hypotheses Table	
	Hypothesis statement	Result
H1	Perceived ease of use significantly predicts EPSA user satisfaction	Support
H2	Perceived usefulness significantly predicts EPSA user satisfaction	Support
H3	Individual factors significantly predict perceived ease of use	Support
H4	Individual factors significantly predict perceived usefulness	Not support
H5	System factors significantly predict perceived ease of use	Support
H6	System factors significantly predict perceived usefulness.	Support

0.080, t=1.570, not significant) and System Fac-tors ( $\beta$ =0.652, t=22.096, p<0.05). As a result, hypothesis H6 are supported. While hypothesis H4 are rejected.

First, the structural model demonstrated satisfactory reliability and validity measures. Regarding internal consistency, all constructs have composite reliability values more than 0.7. All item loadings are greater than 0.7 and are significant at the level of 0.001, demonstrating indicator reliability. The measurement model also demonstrated satisfactory convergent and discriminant validity by having AVE value greater than 0.50, all manifest variables loaded on their respective latent variable and the square roots of AVE for each construct are greater than its inter-correlation.

Finally, the validation of the structural model demonstrated satisfactory results. The R2 were substantial with a value of 50%. This demonstrates strong explanatory power. Moreover, nineteen out of twenty-four proposed paths within the structural model are supported. Based on the path coefficient assessment, nineteen proposed relationships have  $\beta$  value greater than 0.1 and are significant at least at the level of > 0.05. The next section provides a discussion and conclusion of the study.

## 5.0 Discussion and Conclusions

The finding of positive and significant relationships between Perceived ease of use and Perceived Usefulness with User Satisfaction is consistent with expectation and previous research (Amalia et al; 2021; Wilson, 2021; Arunachalam. T, (2019). Previous empirical studies' results also show significant positive relationships between perceived ease of use, perceived usefulness with user satisfaction. The individual factors on perceived usefulness were negative and not statistically significant ( $\beta$ =-0.08-, t=1.570, p :> N.S) and the lack of significant effect of individual factor on perceived usefulness was reexamined in a path correlation analysis. Regardless of whether or not employees in the public sector have self-efficacy, it appears that the information technology they utilize is not seen as effective.

This finding is aligned with the findings of an earlier study by Shih and Fang (2006), who discovered that self-efficacy had no positive relationship with perceived usefulness and a positive relationship with perceived ease of use. Other research, T. Chen et al. (2022) have found that self-efficacy has significant effects on perceived ease of use. The system factors are influenced positively by perceived ease of use ( $\beta$ =-0.652, t=9.170, p :> 0.5) and it is consistence with the study by Machdar (2019). The system factors (quality of content, web design) are also influenced positively by perceived usefulness and perceived ease of use (Teo, 2010).

According to the findings, perceived usefulness, perceived ease of use, individual factors and system factors all have a substantial effect on the desire to use an e-learning system indefinitely. As a result, e-learner satisfaction is a primary factor in the intention to continue using the e-learning system. To promote employees' continued use of the e-learning system, e-learner satisfaction must be improved by boosting employees' perceived ease of use, self-efficacy, and perceived usefulness.

No doubt, the impact of both management and organizational support in predicting user satisfaction highlights the importance of organizational support. It suggests that managers should take a more active part in guaranteeing the success of online learning. Despite organizations being well aware of the advantages of e-learning, such as cost and efficiency, flexibility, and integrity of information across organizations, many fail to grasp the essential aspects that determine adoption success.

Some suggestions exist for practitioners and government officials in charge of making decisions and developing information technology strategies. Practitioners and government officials overseeing IT strategies should grasp the factors affecting user satisfaction with evolving technology. They must ensure that technology is perceived as valuable and user-friendly to avoid wasting investments and failing to achieve promised returns, thus saving money, time, and effort. Besides that, Adnan Abd. Hamid et al.(2016) also suggested the designer must take into account the needs of users in designing the e-government system.

As a limitation of this research, all government employees who presently utilize information technology as well as those who rarely use it. Due to the under estimator for academic research, the investigations had some challenges in obtaining authorization or distributing the questionnaire in several utilities. However, the research was able to distribute the questionnaire at these utilities through personal communication and consent from top management.

Future research is expected to investigate further on the bigger population that can include other ministries in Malaysia. Thus, since technology plays a significant role in the revolution, it is also crucial to develop e-learning mobile application software that provides an interactive experience that helps public servants learn at their own pace, anytime and making learning fun and easy.

## Acknowledgments

Ali Jinah, N.N., et.al., 2nd International Conference on Information Science, Technology, Management, Humanities, and Business, ITMAHuB), Hotel UiTM, Shah Alam, Malaysia, 26-27 Sep. 2023, E-BPJ, Jan, 9(S.I.18) 2024 (pp.71-79)

The research was funded by IPSIS, Universiti Teknologi MARA (UITM). The researchers are also thankful to the School of Information Science Management, UiTM Selangor branch for the support and encouragement. Appreciation is also given to the Ministry of Health's staff.

#### References

Abbas, H. A., & Hamdy, H. I. (2015). Determinants of continuance intention factor in Kuwait communication market: Case study of Zain-Kuwait. Computers in Human Behavior, 49, 648–657. https://doi.org/10.1016/j.chb.2015.03.035

Baker-Eveleth, L., & Stone, R. W. (2015). Usability, expectation, confirmation, and continuance intentions to use electronic textbooks. Behaviour & Information Technology, 34(10), 992–1004. https://doi.org/10.1080/0144929x.2015.1039061

Bandura, A. (2000). Self-efficacy: The foundation of agency. Control of human behavior, mental processes, and consciousness: Essays in honor of the 60th birthday of August Flammer, 16.

Chen, T., Chen, J., Or, C. K., & Lo, F. P. (2022). Path analysis of the roles of age, self-efficacy, and Tam constructs in the acceptance of performing upper limb exercises through immersive virtual reality games. International Journal of Industrial Ergonomics, 91, 103360. https://doi.org/10.1016/j.ergon.2022.103360

Čevra, B., Kapo, A., Zaimović, T., & Turulja, L. (2022). E-learning in Organizations: Factors Affecting Individual Job Performances. International Journal of Emerging Technologies in Learning (IJET), 17(02), 189–208. https://doi.org/10.3991/ijet.v17i02.26967

Chiu, C.-M., & Wang, E. T. G. (2008). Understanding Web-based learning continuance inten-tion: The role of subjective task value. Information & Management, 45(3), 194–201. https://doi.org/10.1016/j.im.2008.02.003

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. MIS quarterly, 189-211.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319-340. https://doi.org/10.2307/249008

Hunt, H. Keith (1977). "CS/D Overview and Future Research Direction." In Conceptualization and Measurement of Consumer Satisfaction and Dissatisfaction. H. Keith Hunt, ed Cambridge, MA: Marketing Science Institute.

Hamid, A. Abd., Razak, F. Z., Bakar, A. A., & Abdullah, W. S. (2016). The effects of perceived usefulness and perceived ease of use on continuance intention to use Egovernment. Procedia Economics and Finance, 35, 644–649. https://doi.org/10.1016/s2212-5671(16)00079-4

Igbaria, M., & livari, J. (1995). The effects of self-efficacy on computer usage. Omega, 23(6), 587-605.

Kerajaan Seri Paduka Baginda Malaysia Pekeliling Perkhidmatan Bilangan 6 Tahun 2005. (N.D.). https://docs.jpa.gov.my/docs/pekeliling/pp05/bil06/PPbil06.pdf

Khrykov, Y., Ptakhina, O., Sych, T., Dzvinchuk, D., & Kormer, M. (2020). Trends in the Devel-opment of e-Learning for Civil Servants. Proceedings of the 1st Symposium on Advances in Educational Technology. https://doi.org/10.5220/0010929400003364

Lee, Y.-H., Hsieh, Y.-C., & Ma, C.-Y. (2011). A model of organizational employees' e-learning systems acceptance. Knowledge-Based Systems, 24(3), 355–366. https://doi.org/10.1016/j.knosys.2010.09.005

Li, H., & Liu, Y. (2014). Understanding post-adoption behaviors of e-service users in the context of online travel services. Information & Management, 51(8), 1043–1052. https://doi.org/10.1016/j.im.2014.07.004

Lin, W.-S., & Wang, C.-H. (2012). Antecedences to continued intentions of adopting e-learning system in blended learning instruction: A contingency framework based on models of infor-mation system success and task-technology fit. Computers & Education, 58(1), 88–99. https://doi.org/10.1016/j.compedu.2011.07.008

Mohamed Yusof, Dr. K., & Mazlan, A. (2020, September 24). Pemerkasaan EPSA Melahirkan Penjawat Awam Kompeten. Berita Harian.

Miyazoe, T., & Anderson, T. (2010). Learning outcomes and students' perceptions of online writing: Simultaneous implementation of a forum, blog, and wiki in an EFL blended learning setting. System, 38(2), 185-199.

Nasrabadi, K. E., & Kaffashpoor, A. (2021). The impact of e-learning through social networks on performance of employees in Iran's customs. International Journal of Procurement Management, 14(5), 596. https://doi.org/10.1504/ijpm.2021.117318P.

Longstreet, X. Xiao, S. Sarker, Com-puterRelated Task Performance: A new perspective, Information & Management, 53 (2016) 517-527

Peltier, J. W., Schibrowsky, J. A., & Drago, W. (2007). The interdependence of the factors influ-encing the perceived quality of the online learning experience: A causal model. Journal of Mar-keting Education, 29(2), 140-153.

Rahmani, A. M., Ehsani, A., Mohammadi, M., Mohammed, A. H., Karim, S. H. T., & Hosse-inzadeh, M. (2021). A new model for analyzing the role of new ICT-based technologies on the success of employees' learning programs. Kybernetes, 51(6), 2156–2171. https://doi.org/10.1108/k-02-2021-0164

Ringle, C. M. (2004). Gütemaße für den Partial-least-squares-Ansatz zur Bestimmung von Kausalmodellen.

Stone, R. W., & Baker-Eveleth, L. (2013). Students' expectation, confirmation, and continuance intention to use electronic textbooks. Computers in Human Behavior, 29(3), 984–990. https://doi.org/10.1016/j.chb.2012.12.007

Tang, J. E., Tang, T.-I., & Chiang, C.-H. (2012). Blog learning: effects of users' usefulness and efficiency towards continuance intention. Behaviour & Information Technology, 33(1), 36–50. https://doi.org/10.1080/0144929x.2012.687772

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. Decision sciences, 27(3), 451-481.

Wang, W., Ngai, E. W. T., & Wei, H. (2012). Explaining Instant Messaging Continuance Inten-tion: The Role of Personality. International Journal of Human-Computer Interaction, 28(8), 500–510. https://doi.org/10.1080/10447318.2011.622971

Wang, C., Zhu, H., Wang, P., Zhu, C., Zhang, X., Chen, E., & Xiong, H. (2022). Personalized and Explainable Employee Training Course Recommendations: A Bayesian Variational Ap-proach. ACM Transactions on Information Systems, 40(4), 1–32. https://doi.org/10.1145/3490476

Yang, Z., Cai, S., Zhou, Z., & Zhou, N. (2005). Development and validation of an instrument to measure user perceived service quality of information presenting web portals. Information & management, 42(4), 575-589