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RESEARCH ARTICLE

Can a Mandatory Information System Enhance User Satisfaction and Individual Performance within Organization?

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ARTICLE INFO	ABSTRACT
	This study analyzed user behavior in mandatory information systems and their effect on user satisfaction and individual performance within the organization. The method used was quantitative causality. The sampling technique was convenience sampling. The population was 3,336 employees of the Ministry of Foreign Affairs of the Republic of Indonesia and the representative offices abroad. A total of 345 samples were selected based on certain criteria. The data was analyzed using SEM AMOS. The study's findings show that the system's quality can affect user satisfaction and individual performance. The quality of the information presented cannot affect the individual performance; it only affects user satisfaction in decision-making. The influence of digital skills on user satisfaction is relatively low and insignificant. The digital skill of using the mandatory information system is an operational skill but can affect individual performance. In conclusion, a mandatory information system can enhance user satisfaction and individual performance if the organization improve the system's quality through technological updates.

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INTRODUCTION

Information and communication technology has led to technology integration into aspects of human life. The use of technology aims to make human work more effective and efficient (Zhong & Appelman, 2014). Technology without digital skills is nothing. Individuals with digital skills determine job success (Bilan et al., 2023; van Laar, Ester, van Deursen, Alexander J.A.M; van Dijk, Jan A.G.M; de Haan, 2020). Organizations need employees who can work quickly, efficiently, and effectively (Lyle M. Spencer & Spencer, 2012). Therefore, the use of technology must meet certain requirements or qualifications. Accountants must be good at accounting information systems, and bank tellers must be good at banking transaction systems.

The success of information systems depends on how individuals use and obtain satisfaction. The use of information systems can affect individual behavior and perception. Some literature states that factors such as ease of use, reliability, and technical support can affect individuals' use of information systems (Petter et al., 2008; Venkatesh et al., 2003). Individual acceptance can lead to satisfaction, performance, and organizational productivity (Yusof et al., 2008). Individual freedom to choose and adopt information systems is influenced by social factors (Venkatesh et al., 2003). On the other hand, individuals are no longer free to choose when using a particular information system (Bhattacherjee et al., 2018); it is a mandatory information system. The use of information systems is a challenge for organizations to increase productivity and satisfaction.

System quality and information quality are measures of the quality of the information system itself (Gorla et al., 2010). System quality represents the quality of information processing, modern technologies, and easy features. According to another perspective, system quality is the characteristic of an information system service that focuses on the usability and performance aspects of the system itself (DeLone & McLean, 2003; Urbach & Müller, 2012). Based on this research, the system's quality consists of complexity, flexibility, navigation, and usability (Laumer et al., 2017).

The information quality is an important factor in organizational success (Al-Mamary et al., 2018). The better the information quality obtained, the more accurate the decision will be. Information quality can be used to measure the quality of information systems and meet user specifications. The quality of information significantly affects satisfaction of decision-making (Gorla et al., 2010). In line with this perspective, DeLone and McLean stated that the quality of information can affect user satisfaction and individual and organizational performance (Petter et al., 2008). This study measures information quality through completeness, relevance, timeliness, usefulness, format, consistency, and understandability (Laumer et al., 2017).

Individuals who gain access to training and experience using information systems can affect the ease of use of information systems (Maillet et al., 2015; Venkatesh et al., 2003). Digital skills determine an individual's intention to accept a particular information system (Izuagbe et al., 2019). Laudon emphasized that users need to understand the organization's information systems. If users have digital skills and understand how to use information systems, they will feel they own and use them well (Laudon, 2018).

In a simple concept, digital skills are defined as a person's ability to use computers and the internet efficiently and effectively (Izuagbe et al., 2019; Maji & Laha, 2020). Digital skills generally include two components: computer skills and internet skills. Van Deursen further proposes a conceptualization of digital skills that takes into technical or media aspects (intermediate skills), substantial or content aspects (content skills), formal, information, and communication aspects (operational skills) and strategic skills (Helsper & van Deursen, 2015; Van Deursen et al., 2014; van Laar, Ester, van Deursen, Alexander JAM; van Dijk, Jan AGM; de Haan, 2020). This study measures operational, information navigation, social, and creative skills (Van Deursen et al., 2014).

Meanwhile, in the context of information systems, user satisfaction is the user's emotion to accept the quality of the information system related to the user's needs or expectations (Isaac et al., 2018; Vaezi et al., 2016). This satisfaction is usually measured from various aspects, such as system usability, information quality output, efficiency, user-friendly features, and technical support (Urbach & Müller, 2012; Wixom & Todd, 2005). In addition, user satisfaction is the level of satisfaction in experiencing the information system and the benefits individuals and organizations feel (DeLone & McLean, 1992, 2003; Isaac et al., 2017; Laumer et al., 2017; Petter et al., 2008; Tam & Oliveira, 2017; Yusof et al., 2008). In this study, user satisfaction consists of satisfaction with the decision, meet the expectations, effectiveness satisfaction, efficiency satisfaction, and overall satisfaction (Isaac et al., 2017; Tam & Oliveira, 2017).

Organizations focus on improving performance and productivity (Rahayu & Chadhiq, 2021). Three elements influence organizational productivity: human resources, business processes, and information technology (Abubakar & Palisuri, 2019; Hrabal et al., 2021). Several studies show that information technology influences performance (Khin & Ho, 2019; Pradhan & Jena, 2017). Robbins and Judge (2020) state that individual performance is assessed based on six elements: quality, quantity, timeliness, effectiveness, independence, and work commitment (Rahayu & Chadhiq, 2021; Robbins & Judge, 2020). In this study, individual performance is grouped into three elements: task performance, adaptive performance, and contextual performance (Pradhan & Jena, 2017).

Based on the description, research on the effect of system quality, information quality, and digital skills on user satisfaction and individual performance in mandatory information systems is very interesting to discuss. There are two questions to answer: can mandatory information systems enhance user satisfaction and individual performance within the organization? what factors can affect it?

MATERIALS AND METHODS
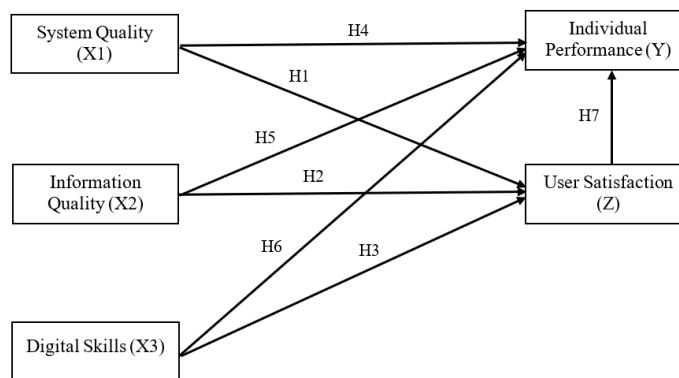
Research framework

Figure 1: Research framework model

The IS Success Model DeLone & McLean inspires the research framework model above. This model measures the influence of information systems on individuals and organizations. DeLone and McLean identified six elements of information system success: system quality, information quality, usage, user satisfaction, individual impact, and organizational impact. (DeLone & McLean, 1992). The involvement digital skills using the Marsh model, emphasizes the importance of digital skills in digital work (Marsh, 2018; Van Deursen et al., 2014).

Hypothesis

To answer the research questions, the hypothesizes are as follows:

H1 : System Quality has a significant positive effect on User Satisfaction

H2 : Information Quality has a significant positive effect on User Satisfaction

H3 : Digital Skills have a significant positive effect on User Satisfaction

H4 : System Quality has a significant positive effect on Individual Performance

H5 : Information Quality has a significant positive effect on Individual Performance

H6 : Digital Skills have a significant positive effect on Individual Performance

H7 : User Satisfaction has a significant positive effect on Individual Performance

Population and sample

This study involved employees at the Ministry of Foreign Affairs of the Republic of Indonesia who work at the head office in Jakarta, Indonesia, and the representative offices abroad (mission abroad). The population was 3,336 employees, and the sample was 345 employees. They were selected based on the following criteria: at least one year of work experience and having applied to the e-office information system for at least three months.

Procedure and instrument

The method used was quantitative causality research. The sampling technique was convenience sampling. The questionnaire was distributed online using the organization's e-mail. The study was conducted for 15 months, from September 2022 to December 2023.

The research instrument uses a Likert scale of 1 to 5 to measure user attitudes, opinions, and perceptions. The research instrument, known for its reliability, consists of 5 variables with 7 statement items. The total questionnaire is 35 items.

Data analysis

This study's analysis uses Structural Equation Modelling (SEM). The data was calculated using the SPSS and SEM AMOS software.

RESULTS

Sample

Table 1: Sample description (n=345)

Category	Description	Frequency	Percentage
Gender	Male	205	59%
	Female	140	41%
Age	≥56 years	20	6%
	46 < 55 years	115	33%
	36 < 45 years	122	35%
	26 < 35 years	76	22%
	≤25 years	12	4%
Working Period	> 30 years	45	13%
	21 < 30 years	92	27%
	11 < 20 years	123	36%
	6 < 10 years	27	8%
	1 < 5 years	46	13%
	< 1 year	12	13%
Education	Doctoral Degree	6	6%
	Master Degree	105	30%
	Bachelor Degree	208	60%
	Associate Degree	6	2%
	Senior High School	20	2%

Based on the table above, there are more male samples (205 employees) than females (140 employees). The most participating sample was 122 employees (35%) aged 36 < 45 years. Meanwhile, the most working period is 11 < 20 years with 123 employees (36%). The highest level of education is a Bachelor's, with 208 employees (60%). The second is Master's, which has 105 employees (30%). This condition shows that employees at the Ministry of Foreign Affairs of the Republic of Indonesia and Representative Offices of the Republic of Indonesia abroad have high educational standards.
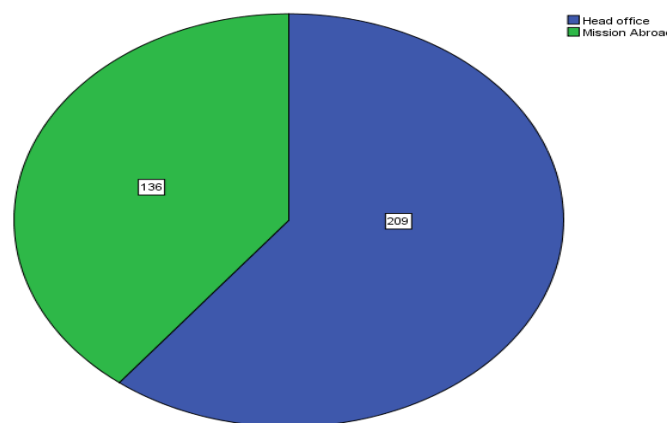

Figure 2: Work area

The distribution of the sample who work at the Ministry in Jakarta, Indonesia (head office) is 209 employees (61%). Meanwhile, the sample who work at the representative office of the Republic of Indonesia abroad (mission abroad) is 136 employees (39%).
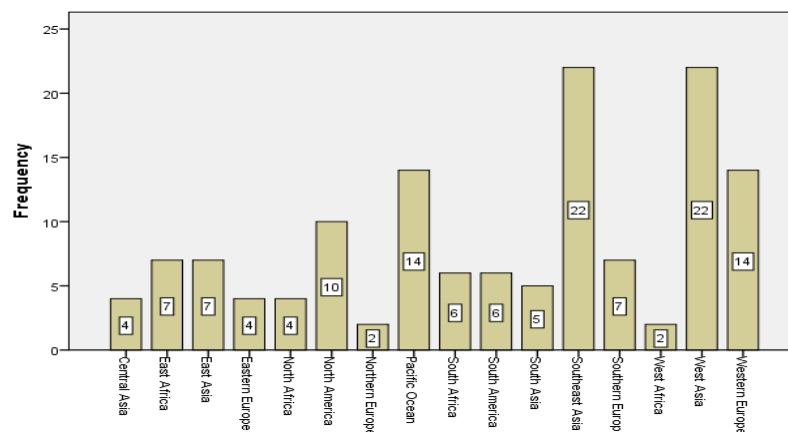

Figure 3: Subregion area

Based on the subregion area, the largest samples were in Southeast Asia (22 employees) and West Asia (22 employees). The fewest samples were in Northern Europe (2 employees) and West Africa (2 employees).

Validity and reliability

The validity test was measured using the Product Moment formula. The item is declared valid if the r-count value > r-table and the significance value is < α (0.05). The r-table value is determined by df = N-2 with a significance level of 5%, so df is 345-2=343, and the r-table is 0.105. Cronbach's Alpha value > 0.6 is said to be reliable. The results of the validity and reliability test of all research instruments were declared valid and reliable.

Table 2: Validity and reliability

	Indicators	r-count	Sig.	Cronbach's Alpha	References
System Quality				0.877	DeLone & McLean (2003); Laumer et.al (2017)
SQ1	The features of the e-office are too complex	0.799	0,000		
SQ2	It is too complicated to search for incoming and outgoing information in e-office	0.770	0,000		
SQ3	Sometimes, I feel like I don't understand certain features in e-office	0.743	0,000		
SQ4	Features in e-office can be customized to meet various work needs.	0.737	0,000		
SQ5	In general, the features in e-office are easy to navigate	0.785	0,000		
SQ6	Easy-to-use e-office application	0.698	0,000		
SQ7	In general, e-office is a user-friendly system	0.782	0,000		
Information Quality				0.785	DeLone & McLean (2003); Laumer et.al (2017)
IQ1	I am sure the information provided in the e-office is complete information.	0.676	0,000		
IQ2	The information provided by the e-office is relevant to the job.	0.636	0,000		
IQ3	I believe the information provided by the e-office is up to date	0.713	0,000		
IQ4	The information presented by the e-office is valuable for work.	0.661	0,000		
IQ5	I found the incoming or outgoing document format to be based on the provisions of official scripts.	0.607	0,000		
IQ6	In general, the information provided by the e-office can be relied upon for decision-making.	0.682	0,000		
IQ7	The leadership's e-office directions are presented very clearly.	0.662	0,000		
Digital Skills				0.928	Van Deursen et.al (2014)
DS1	I can save incoming or outgoing documents in the e-office	0.776	0,000		
DS2	I can input information on outgoing documents on the e-office	0.864	0,000		
DS3	I can upload outgoing documents on e-office	0.870	0,000		
DS4	I can do a document search on e-office	0.839	0,000		
DS5	I can find out who received the leader's directions on e-office	0.825	0,000		
DS6	I can create a document out of the features drafting on e-office	0.819	0,000		
DS7	I can create documents attach outgoing document that will be uploaded to the e-office	0.864	0,000		
User Satisfaction				0.860	Isaac et al. (2017); Tam & Oliveira (2017)
US1	I feel satisfied making the right decision using e-office	0.729	0,000		
US2	I feel satisfied using e-office because it meets my expectations.	0.746	0,000		
US3	I am satisfied because the e-office can meet the needs of information processing.	0.758	0,000		
US4	Overall, I am satisfied with the e-office features.	0.710	0,000		
US5	Overall, I am satisfied with the performance of the e-office.	0.760	0,000		
US6	I am satisfied because the e-office performance is effective.	0.778	0,000		
US7	I am satisfied because the e-office performance is efficient.	0.683	0,000		
Individual Performance				0.886	Pradhan & Jena (2017)
IP1	I can handle work without supervision.	0.703	0,000		
IP2	I can complete a lot of work when using e-office	0.681	0,000		
IP3	I can take action during an emergency	0.864	0,000		
IP4	I can handle work teams effectively in dealing with changes especially when the e-office experiences problems (server down)	0.791	0,000		
IP5	I can assist colleagues in using e-office	0.768	0,000		
IP6	I can mentor new coworkers outside the scope of work using e-office	0.769	0,000		
IP7	I am used to communicating effectively with coworkers for problem solving.	0.826	0,000		

Goodness of Fit

The research model's feasibility is measured by evaluating the output loading factor based on the Goodness of Fit (GoF) criteria. The modified structural model met the parameters and measurement criteria of Goodness of Fit (GoF). The following is a modified model.
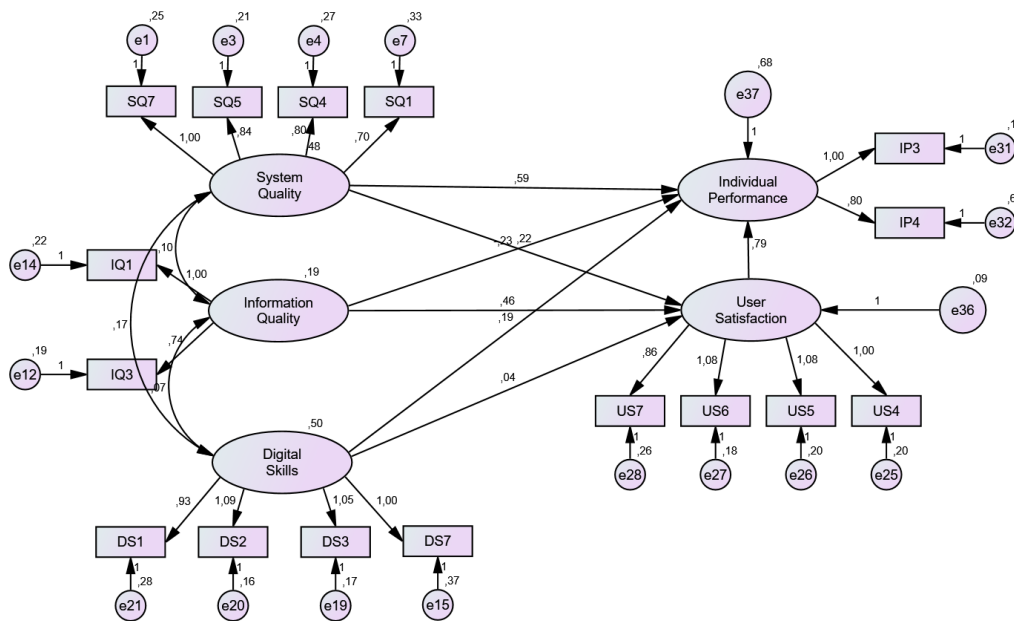

Figure 4: Model modification results

The table of fit summary shows that all criteria achieved a good fit. Here is the resume: CMIN/DF = 1.219; IFI = 0.991; TLI/NNFI = 0.988; CFI = 0.991; NFI = 0.952; RFI = 0.939; GFI = 0.961; AGFI = 0.944; and RMSEA = 0.025.

Table 3: Goodness of Fit (GoF) summary

Goodness of Fit	Match Level	Model Fit Summary Results	Note
Chi-Square (P-value)	P > 0.05	0.073	Good fit
RMSEA	≤ 0.080	0.025	Good fit
NFI	≥ 0.900	0.952	Good fit
NNFI/TLI	≥ 0.900	0.988	Good fit
CMIN/DF	≤ 2.000	1,219	Good fit
CFI	≥ 0.900	0.991	Good fit
IFI	≥ 0.900	0.991	Good fit
RFI	≥ 0.900	0.939	Good fit
SRMR	≤ 0.05	0.019	Good fit
GFI	≥ 0.900	0.961	Good fit
AGFI	≥ 0.900	0.944	Good fit

Construct reliability and variance extracted

The research construct is declared valid and reliable in the SEM model if the construct reliability (CR) value is > 0.7 and the variance extracted (AVE) value is > 0.5. In this calculation, all indicators and variables of this research are declared valid and reliable.

Table 4: Construct reliability and variance extracted

No	Variables	Indicators	Standard Loading Factor	Loading Standard^2	Measurement Error (1-Standard Loading^2)	Construct Reliability	Variance Extraction
1	System Quality	SQ1	0.646	0.417	0.029	0.988	0.954
		SQ4	0.729	0.531	0.026		
		SQ5	0.783	0.613	0.023		
		SQ7	0.809	0.654	0.029		
		Σ	2,967	2,216	0.107		
		Σ2	8,803				
2	Information Quality	IQ1	0.676	0.457	0.036	0.965	0.932
		IQ3	0.592	0.350	0.023		
		Σ	1,268	0.807	0.059		
		Σ2	1,608				
3	Digital Skills	DS1	0.781	0.610	0.026	0.991	0.965
		DS2	0.885	0.783	0.021		
		DS3	0.877	0.769	0.020		
		DS7	0.759	0.576	0.033		
		Σ	3,302	2,738	0.100		
		Σ2	10,903				
4	User Satisfaction	US4	0.690	0.476	0.019	0.989	0.959
		US5	0.720	0.518	0.020		
		US6	0.738	0.545	0.019		
		US7	0.590	0.348	0.022		
		Σ	2,738	1,887	0.080		
		Σ2	7,497				
5	Individual Performance	IP3	0.925	0.856	0.088	0.945	0.898
		IP4	0.739	0.546	0.072		
		Σ	1,664	1,402	0.160		
		Σ2	2,769				

Hypothesis Test

Hypothesis testing on the structural model was carried out by conducting p-value significance test. The hypothesis is acceptable if the p-value < 0.05 and the t-value ≥ 1.96.

Table 5: Hypothesis testing results

	Hypothesis	Estimate	SE	CR	P	Note
H1	System Quality has a significant positive effect on User Satisfaction	0.221	0.045	4,946	0,000	Accepted
H2	Information Quality has a significant positive effect on User Satisfaction	0.456	0.099	4,589	0,000	Accepted
H3	Digital Skills have a significant positive effect on User Satisfaction	0.040	0.037	1,089	0.276	Rejected
H4	System Quality has a significant positive effect on Individual Performance	0.592	0.111	5,348	0,000	Accepted
H5	Information Quality has a significant positive effect on Individual Performance	-0.228	0.235	-0.973	0.330	Rejected
H6	Digital Skills have a significant positive effect on Individual Performance	0.194	0.084	2,293	0.022	Accepted
H7	User Satisfaction has a significant positive effect on Individual Performance	0.789	0.240	3,283	0.001	Accepted

Note: If p-value < 0.05, then accepted, and if t ≥ 1.96 is significant (+/-).

DISCUSSION AND CONCLUSION

Discussion

The effect of system quality on user satisfaction (hypothesis 1)

Previous research has shown a large and significant positive influence of system quality on user satisfaction (Bandiyono & Naufal, 2020; Tam & Oliveira, 2017). Nurbani et al. stated that system quality has a significant positive effect on user satisfaction, which in turn has a significant positive

influence on individual performance (Nurbani et al., 2019). Other studies have found that system quality has a positive but insignificant effect on user satisfaction (Rahayu & Chadhiq, 2021).

The results of the hypothesis test show that system quality has a significant positive effect on user satisfaction. Hypothesis 1 is accepted. The p-value = 0.000 < 0.05 and t-value = 4.946 $\geq$ 1.96. The e-office information system is easy to navigate despite its complex features. Users feel satisfied because the performance of the e-office is effective. The high quality of the system causes users to feel satisfied with their experience using the information system. This study's results support the research of Bandiyono & Naufal (2020), Nurbani et al. (2019), and Tam & Oliveira (2017).

The effect of information quality on user satisfaction (hypothesis 2)

Based on previous research, information quality positively and significantly influences user satisfaction (Tam & Oliveira, 2017). Rahayu and Chadhiq stated that the information quality and the quality of information system positively and significantly affect user satisfaction (Rahayu & Chadhiq, 2021). Information quality determines user satisfaction and influences the manifestation of solutions (Erlirianto et al., 2015; Laumer et al., 2017).

The results of the hypothesis test show that the information quality has a significant positive effect on user satisfaction. Hypothesis 2 is accepted. The p-value = 0.000 < 0.05 and t-value = 4.589 $\geq$ 1.96. The information presented by the e-office information system is complete and provides user satisfaction, especially in information processing and decision-making. High-quality information leads to user satisfaction. The results of this study support the research study conducted by Tam and Oliveira (2017) and Rahayu and Chadhiq (2021).

The effect of digital skills on user satisfaction (hypothesis 3)

Based on previous research, digital skills affect user satisfaction with information systems (Holiawati, 2019). Education and training factors also affect a person's satisfaction (Mohd Aznan et al., 2019).

The results of the hypothesis test show that digital skills do not have a significant positive effect on user satisfaction. Hypothesis 3 was rejected. The p-value = 0.276 > 0.05 and t-value 1.089 $\leq$ 1.96. Most employees have the basic skills to manage documents within the mandatory information system. Users do not need to install and configure e-office to operate it. Users have no choice but to use them regardless of their level of digital skills and the satisfaction received. Information systems are designed for all skill levels. In these situations, users with basic or advanced digital skills can feel the same satisfaction when using information systems. In this study, user satisfaction is more influenced by other factors, such as the quality of the information provided and the system's performance to support its needs. The results of this study do not support Holiawati's research (2019).

The effect of system quality on individual performance (hypothesis 4)

Based on previous research, system and information quality directly affect user performance and can indirectly affect organizational performance (Mohamed Ali & Younes, 2013).

The results of the hypothesis test show that system quality has a significant positive effect on individual performance. Hypothesis 4 is accepted. The p-value = 0.000 < 0.05 and t-value = 5.348 $\geq$ 1.96. Some features in the e-office are too complex. However, it is easy to use and helps complete work. High system quality has a significant positive impact on individual performance. System quality is a key factor in achieving individual performance. The speed in processing information and producing good output allows individuals to work faster and more efficiently. This study's results support the research of Mohamed Ali & Younes (2013).

The effect of information quality on individual performance (hypothesis 5)

Previous research shows that information quality has a large and significant positive effect on individual performance (Tam & Oliveira, 2017). In line with this research, the quality of information can directly affect user performance (Mohamed Ali & Younes, 2013).

The results of the hypothesis test show that the information quality does not have a significant positive effect on individual performance. Hypothesis 5 is rejected. The p-value = 0.330 > 0.05 and t-value = -0.973 ≤ 1.96. The complete information presented by the e-office information system does not affect individual performance. However, it only affects the decision-making process. Information provided through leader directives is only intended for certain employees. The process of searching for information quickly has not been optimally carried out by the information system. Individual performance may depend more on other factors, such as system quality, skills, experience, and motivation, than on the quality of the information itself. This study's results differ from those of the research conducted by Mohamed Ali & Younes (2013) and Tam & Oliveira (2017).

The effect of digital skills on individual performance (hypothesis 6)

Based on previous research, digital skills positively impact individual performance (Mohd Abas et al., 2019; Pagani et al., 2016). In another study, digital skills positively influenced individual performance through moderating employee agility (Nadzim & Halim, 2022).

The results of the hypothesis test show that digital skills have a significant positive effect on individual performance. Hypothesis 6 is accepted. P-value = 0.022 < 0.05 and t-value = 2.293 > 1.96. Digital skills can help employees work to manage documents and speed up work. High digital skills allow individuals to work more effectively and efficiently and innovate. The results of this study support the research of Mohd Abas et al. (2019) and Pagani et al. (2016).

The effect of user satisfaction on individual performance (hypothesis 7)

Based on previous research, user satisfaction has a direct positive and significant effect on individual performance (Ameen et al., 2020; Hou, 2012; Nurbani et al., 2019). Isaac et al. used the TAM (Technology Acceptance Model) and found that employee satisfaction positively affected performance (DeLone & McLean, 2016; Isaac et al., 2018).

The results of the hypothesis test show that user satisfaction has a significant positive effect on individual performance. Hypothesis 7 is accepted. The p-value = 0.001 < 0.05 and t-value = 3.283 > 1.96. The employees who feel the effectiveness of e-office performance feel satisfied to complete a lot of work, and employees can take action during emergencies. Satisfied employees tend to be more motivated and committed to their work. They will increase their performance and productivity. These findings are support to the research of Nurbani et al. (2019), DeLone & McLean (2016), and Isaac et al. (2018).

CONCLUSION

The mandatory information system in the organization is used as an obligation of the individual to do certain digital work, regardless of satisfaction or dissatisfaction. The quality of the system can affect user satisfaction and individual performance. Mandatory information systems are designed to provide ease of use and job effectiveness for all skill levels. Digital skills to use mandatory information systems are operational skills or basic skills. The influence of digital skills on user satisfaction is relatively low and insignificant. The quality of information presented by the mandatory information system cannot affect individual performance; it only affects user satisfaction in decision-making.

Mandatory information systems can enhance user satisfaction and individual performance if organizations improve their quality through technological updates. However, mandatory information systems can reduce individual motivation and performance if the organization does not consider user satisfaction.

This study has limited references from the aspects of the topic and variables studied. Research examining the influence of variables on mandatory information systems still needs to be completed. However, this study's findings are expected to positively contribute to academics' and practitioners' understanding of the benefits and effects of mandatory information systems in organizations.

Future studies can include other variables, such as engagement, service quality, and user experience. To enrich the diversity of research, it is necessary to consider conducting voluntary information system research.

REFERENCES

Abubakar, H., & Palisuri, P. (2019). *The Role of Human Resources and Information Technology on Implementation of Business Process Reengineering Strategy*. *December*. https://doi.org/10.2991/iconies-18.2019.8

Al-Mamary, Y. H., Shamsuddin, A., & Abdul Hamid, N. A. (2018). The relationship between system quality, information quality, and organizational performance. *International Journal of Knowledge and Research in Management & E-Commerce*, *4*(3), 7–10.

Ameen, A., Al-Ali, D., Isaac, O., & Mohammed, F. (2020). Examining relationship between service quality, user satisfaction and performance impact in the context of smart government in UAE. *International Journal of Electrical and Computer Engineering*, *10*(6), 6026–6033. https://doi.org/10.11591/ijece.v10i6.pp6026-6033

Bandiyono, A., & Naufal, M. (2020). Hot-fit model framework in central government employee data management systems. *International Journal of Scientific and Technology Research*, *9*(1), 1798–1787.

Bhattacherjee, A., Davis, C. J., Connolly, A. J., & Hikmet, N. (2018). User response to mandatory IT use: a coping theory perspective. *European Journal of Information Systems*, *27*(4), 395–414. https://doi.org/10.1057/s41303-017-0047-0

Bilan, Y., Mishchuk, H., Samoliuk, N., & Bilan, Y. (2023). Digital Skills of Civil Servants: Assessing Readiness for Successful Interaction in e-society. *Acta Polytechnica Hungarica*, *20*(3), 2023–2155.

DeLone, & McLean. (1992). The quest for the dependent variable. Information Systems Research. *Information System Research*, *3*(1), 60–95. https://doi.org/10.1287/isre.3.1.60

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

DeLone, W. H., & McLean, E. R. (2016). Information Systems Success Measurement. *Foundations and Trends® in Information Systems*, *2*(1), 1–116. https://doi.org/10.1561/2900000005

Erlirianto, L. M., Ali, A. H. N., & Herdiyanti, A. (2015). The Implementation of the Human, Organization, and Technology-Fit (HOT-Fit) Framework to Evaluate the Electronic Medical Record (EMR) System in a Hospital. *Procedia Computer Science*, *72*(April 2016), 580–587. https://doi.org/10.1016/j.procs.2015.12.166

Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *Journal of Strategic Information Systems*, *19*(3), 207–228. https://doi.org/10.1016/j.jsis.2010.05.001

Helsper, E. J., & van Deursen, A. J. A. M. (2015). Digital skills in Europe: Research and policy. *Digital Divides: The New Challenges and Opportunities of e-Inclusion*, *September*, 125–146. https://doi.org/10.1201/b17986

Holiawati, H. (2019). Effect of Skills, Capabilities, Education and Training on Accounting Information System User Satisfaction. *Eaj (Economics and Accounting Journal)*, *2*(1), 35. https://doi.org/10.32493/eaj.v2i1.y2019.p35-41

Hou, C. K. (2012). Examining the effect of user satisfaction on system usage and individual performance with business intelligence systems: An empirical study of Taiwan's electronics industry. *International Journal of Information Management*, *32*(6), 560–573. https://doi.org/10.1016/j.ijinfomgt.2012.03.001

Hrabal, M., Tuček, D., Molnár, V., & Fedorko, G. (2021). Human factor in business process management: modeling competencies of BPM roles. *Business Process Management Journal*, *27*(1), 275–305. https://doi.org/10.1108/BPMJ-04-2020-0161

Isaac, O., Abdullah, Z., Ramayah, T., & Mutahar, A. M. (2017). Internet usage, user satisfaction, task-technology fit, and performance impact among public sector employees in Yemen. *International Journal of Information and Learning Technology*, *34*(3), 210–241. https://doi.org/10.1108/IJILT-11-2016-0051

Isaac, O., Abdullah, Z., Ramayah, T., Mutahar, A. M., & Alrajawy, I. (2018). Integrating User Satisfaction and Performance Impact with Technology Acceptance Model (TAM) to Examine the Internet Usage Within Organizations in Yemen. *Asian Journal of Information Technology*, *17*(1), 60–78. https://doi.org/10.3923/ajit.2018.60.78

Izuagbe, R., Ibrahim, N. A., Ogiamien, L. O., Olawoyin, O. R., Nwokeoma, N. M., Ilo, P. I., & Osayande, O. (2019). Effect of perceived ease of use on librarians' e-skills: Basis for library technology acceptance intention. *Library and Information Science Research*, *41*(3), 100969. https://doi.org/10.1016/j.lisr.2019.100969

Khin, S., & Ho, T. C. F. (2019). Digital technology, digital capability and organizational performance: A mediating role of digital innovation. *International Journal of Innovation Science*, *11*(2), 177–195. https://doi.org/10.1108/IJIS-08-2018-0083

Laudon, J. P. L. (2018). Management information systems: managing the digital firm, 8th Edition. In *International Journal of Information Management* (Vol. 24, Issue 2). https://doi.org/10.1016/j.ijinfomgt.2003.12.006

Laumer, S., Maier, C., & Weitzel, T. (2017). Information quality, user satisfaction, and the manifestation of workarounds: A qualitative and quantitative study of enterprise content management system users. *European Journal of Information Systems*, *26*(4), 333–360. https://doi.org/10.1057/s41303-016-0029-7

Lyle M. Spencer, J., & Spencer, S. M. (2012). Competence at Work: Models for Superior Performance. Japan Productivity Center. *John Wiley & Sons, Inc.*, 456.

Maji, S. K., & Laha, A. (2020). State of digital economy in Asia-Pacific region: Delineating the role of digital skill. *International Journal of Public Administration in the Digital Age*, *7*(2), 38–54. https://doi.org/10.4018/IJPADA.2020040103

Marsh, E. (2018). Understanding the Effect of Digital Literacy on Employees' Digital Workplace Continuance Intentions and Individual Performance. *International Journal of Digital Literacy and Digital Competence*, *9*(2), 15–33. https://doi.org/10.4018/ijdldc.2018040102

Mohamed Ali, B., & Younes, B. (2013). The impact of information systems on user performance: An exploratory Study. *Journal of Theoretical and Applied Information Technology*, *52*(3), 325–342.

Mohd Abas, M. K., Yahaya, R. A., & Fee Din, M. S. (2019). Digital Literacy and its Relationship with Employee Performance in the 4IR. *Journal of International Business, Economics and Entrepreneurship*, *4*(2), 29. https://doi.org/10.24191/jibe.v4i2.14312

Mohd Aznan, E. A., Hj Mohd Kassim, A. F., Othman, N., Yusof, M. K., & Amir, N. H. (2019). The Relationship Between Job Satisfaction and Social Skill. *Jurnal Intelek*, *14*(2), 251–256. https://doi.org/10.24191/ji.v14i2.258

Nadzim, S. Z. A., & Halim, H. A. (2022). The Mediating Role of Employee Agility on The Relationship between Digital Competency and Employee Performance among Civil Servants in Malaysian Public University. *Global Business and Management Research: An International Journal*, *14*(3s). https://www.pmo.gov.my,

Nurbani, K., Kurniawan, A., & Umiyati, I. (2019). the Impact of System Quality and Information Quality on User Satisfaction and User Performance. *Jurnal Akuntansi, Manajemen Dan Ekonomi*, *21*(2), 1–9. https://doi.org/10.32424/1.jame.2019.21.2.1265

Pagani, L., Argentin, G., Gui, M., & Stanca, L. (2016). The impact of digital skills on educational outcomes: evidence from performance tests. *Educational Studies*, *42*(2), 137–162. https://doi.org/10.1080/03055698.2016.1148588

Petter, S., DeLone, W., & McLean, E. (2008). Measuring information systems success: Models, dimensions, measures, and interrelationships. *European Journal of Information Systems*, *17*(3), 236–263. https://doi.org/10.1057/ejis.2008.15

Pradhan, R. K., & Jena, L. K. (2017). Employee Performance at Workplace: Conceptual Model and Empirical Validation. *Business Perspectives and Research*, *5*(1), 69–85. https://doi.org/10.1177/2278533716671630

Rahayu, U. D., & Chadhiq, U. (2021). The Effect SAP Application System Quality and the Quality of Information on Individual Performance Dimediate User Satisfaction (at PT. PLN (Persero) Central Java and D.I Yogyakarta Distribution Main Units). *International Journal of Economics, Business and Accounting Research*, *4*(3), 343–353.

Robbins, S. P., & Judge, T. A. (2020). *Essentials of organizational behavior*. http://www.theeuropeanlibrary.org/tel4/record/3000089783526

Tam, C., & Oliveira, T. (2017). Understanding mobile banking individual performance: The DeLone & McLean model and the moderating effects of individual culture. *Internet Research*, *27*(3), 538–562. https://doi.org/10.1108/IntR-05-2016-0117

Urbach, N., & Müller, B. (2012). The Updated DeLone and McLean Model of Information Systems Success. *Springer*, *28*, 461. https://doi.org/10.1007/978-1-4419-6108-2

Vaezi, R., Mills, A., Chin, W., & Zafar, H. (2016). User satisfaction research in information systems: Historical roots and approaches. *Communications of the Association for Information Systems*, *38*(1), 501–532. https://doi.org/10.17705/1CAIS.03827

Van Deursen, A. J. A. M., Helsper, E. J., & Eynon, R. (2014). Measuring digital skills : From Digital Skills to Tangible Outcomes project report. In *Conference of the International …* (Issue October). https://doi.org/10.13140/2.1.2741.5044

van Laar, Ester, van Deursen, Alexander J.A.M; van Dijk, Jan A.G.M; de Haan, J. (2020). *Measuring the levels of 21st-Century digital skills among professionals working within the creative industries: A Performance-Based Approach*.

Venkatesh, Morris, Davis, & Davis. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 425. https://doi.org/10.2307/30036540

Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, *16*(1), 85–102. https://doi.org/10.1287/isre.1050.0042

Yusof, M. M., Kuljis, J., Papazafeiropoulou, A., & Stergioulas, L. K. (2008). An evaluation framework for Health Information Systems: human, organization and technology-fit factors (HOT-fit). *International Journal of Medical Informatics*, *77*(6), 386–398. https://doi.org/10.1016/j.ijmedinf.2007.08.011

Zhong, B., & Appelman, A. J. (2014). How college students read and write on the web: The role of ICT use in processing online information. *Computers in Human Behavior*, *38*, 201–207. https://doi.org/10.1016/j.chb.2014.05.037