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The Relationship Between Geographical Information System (GIS) Quality and User Satisfaction, and Its Influence on Individual Work Performance

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ABSTRACT

The measurement of software quality has always been subjective. Many theories and models were developed to identify the contributing factors in software quality. This study focuses specifically on Geographical Information Systems (GIS) quality. The impact given by GIS enlightens decision-makers through the location element. This study focuses on the aspects of GIS quality according to the ISO-25010 software quality model. The aim of this study is to identify the level of GIS quality, user satisfaction, and individual work performance in the selected organization. It also aims to investigate the relationship between GIS quality and user satisfaction as well as examining the influence of user satisfaction on individual work performance. A total of 362 respondents have given responses to the study, where all findings were collected, reviewed, and analyzed. From the analysis, it is found that from 10 hypotheses, seven (7) are supported and three (3) are not.

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INTRODUCTION

Geographical Information Systems (GIS) were known as technical software solutions used in spatial data collection and analysis. As the evolution of technology and needs grew, the solution of GIS expanded into various fields of business. GIS is defined as a solution that provides the ability to collect, process, store, analyze, and produce reports that relate to spatial information. Nowadays, GIS has been utilized as one of the solutions that give benefits in decision-making and trend analysis via external or operational data for decision-makers. However, the solution in GIS was known to be complex and required specific sets of knowledge to operate. As a result, the quality of GIS software has become the subject of debate over whether it is suitable for use or whether there is room for improvement or enhancement. Software quality measurement is a subjective analysis and requires different techniques and models to do it. The objective of measuring software quality is to identify the quality factor contributing to the software. According to ISO/IEC (2011), software quality is defined as how well the software can meet the needs of its stakeholders. The ISO-25010 organizes these needs into various characteristics and sub-characteristics for better categorization of the software quality. This study aims to identify the relationship between GIS quality with user satisfaction and its influence on individual work performance. The focus on GIS quality was derived from eight (8) dimensions consisting of functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability. Meanwhile, the impact of user satisfaction was measured to identify its influence on individual work performance through task performance and adaptive performance.

LITERATURE REVIEW

Geographical Information Systems (GIS)

GIS was defined to be a solution that drives business ideas through a combination of spatial and operational information. It provides specific functionalities that work together in producing analytical analysis and visualize it to map in solving real work problems (Sharma, 2018). The analysis provided by GIS empowers its users to produce unique innovations, especially in delivering tasks (Arshad et al., 2018). How GIS works is different from other available software in the market. The approaches, methods, and techniques associated with the utilization of spatial information have made GIS a unique solution (Zhuspekova & Maymurunova, 2015). Spatial information is defined to be the subset of information related to the location and shapes of areas of interest (Szewrański et al., 2017). The common operations provided by GIS are data collection, processing, and statistical analysis with attractive visualization by layering information on the map. In addition, GIS delivers a base foundation of location intelligence where knowledge and concepts are combined and produce meaningful understanding for the users (Rahman et al., 2021). Most industries and fields are utilizing GIS as be solution in data understanding.

Software Quality

The evolution of software in the industry is rapidly happening in assisting daily life tasks. The study focuses on measuring the antecedents of software quality that are expected to have a relationship with user satisfaction and also influence individual work performance. The definition of software quality refers to the measurement of software where the factors contributing are able to please and meet the needs of users (Nistala et al., 2019). The evolution in measuring software quality was vastly developed and introduced (Wahyuningrum et al., 2017). The exploration of software quality was started with the McCall model (1977), Boehm (1978), Dromey (1995), the FURPS model, the ISO-9126 (2001) Software Quality Model, and the most updated standard followed by the industry ISO-25010 Software Quality Model. Year by year, the evaluation of quality provided by the software or technology becomes more challenging in determining the suitable model for different software (Peters & Aggrey, 2020). The ISO-25010 was originally extended and enhanced from the version of ISO-9126 (Peters & Aggrey, 2020). The enhanced characteristics are security and compatibility. The establishment of both characteristics is derived from various studies conducted under the model of ISO-9126 (Saptarini et al., 2017). The revisions or updates were made via strong justification from numerous other studies. The characteristics of ISO-25010 consist of functional suitability, efficiency, compatibility, usability, reliability, security, maintainability, and portability. All of the characteristics come with sub-characteristics that assist in creating the base foundation of main characteristics. For the context of this study, ISO 25010 of the software quality model can be the best setting for measuring GIS without bias. Hence, all eight (8) software quality from the ISO-25010 quality model consisting of functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability are identified to be the indicators of quality in GIS.

User Satisfaction

The level of software acceptance was usually determined by the satisfaction of users. However, in the field of GIS, it still has been a debated subject. According to (Gao et al., 2018) the context of user satisfaction in GIS refers to the usefulness, trust, pleasure, and level of comfort when using it. In the context of usefulness, GIS was expected to provide a level of acceptance through its ability, features, and function in producing results (Kalankesh et al., 2020). The result produced must be trusted where the information is able to improve the performance of the tasks. Any lack of trust in the result may lead to big issues especially in the selection of GIS whether it can solve the issues or not (Jun et al., 2019). Hence, trust must be gained so that a set of beliefs from GIS can perform as per the user’s expectations. In the context of pleasure, satisfaction was measured throughout the experience using it either internal or external characteristics provided in GIS. Measuring user satisfaction can be challenging and subjective as individual preferences are different (Kalankesh et al., 2020). The implementation of GIS must have element of satisfaction among the users (Aslan et al., 2020). In IS success model, user satisfaction are elaborated to be characteristic on the ability of the software to make improvement on the existing work flow or results (Loughlin et al., 2021). The higher results quality provided, the higher satisfaction will be shown by the users (Kalankesh et al., 2020).

Individual Work Performance

Individual work performance is a way of measuring quality through the context of improving performance. It is an action executed by an individual with the aim of achieving goals (Widyastuti et al., 2018). It is also a process where performance is expected to produce high results in work efficiency, effectiveness, and quality of work (Goodhue and Thompson, 1995). The higher the satisfaction with the system, the outcome of the results will be more excellent (Kapo et al., 2021). Nevertheless, none of the existing instruments are able to measure relevant aspects of individual work performance. The framework for individual work performance is measured through the GIS quality and user satisfaction where the influence can be seen through the analysis of the variables. Two dimensions of individual work performance are identified consist of task performance and adaptive performance. Task performance is defined to be the ability an individual produces through proficiency and ability to perform the main tasks of the job (Kadir, 2019). The elements of task performance consist of planning, organizing, completing jobs, solving problems, and self-updating with the required knowledge. Meanwhile, adaptive is defined to be the ability to be adaptive and fast response to work challenges or situations (Nandini et al., 2022). The individual is expected to have the ability to deliver tasks, creative and innovative including fast responses in problem solving. Understanding adaptive performance is also defined to be efficient in managing unprecedented work situations where the individual is able to cope with fast solutions.

Framework of the Study

Based on Figure 1, the framework of the study was derived from the ISO-25010 software quality model. The primary characteristics of GIS quality were defined as per ISO-25010 consisting of functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability. These software quality characteristics are universal solutions in determining the quality aspects of software (ISO/IEC, 2011). User satisfaction is a measurement of identifying quality in the use of software (Kalankesh et al., 2020). Task performance is defined to be the ability of an individual to the tasks in an effective way according to the setting that has been set (Aslan et al., 2022; Gorostiaga et al., 2022). In relation to the study, all of these elements were defined to be expected to have a relationship with user satisfaction. Furthermore, user satisfaction is expected to have a positive influence on task performance and adaptive performance.

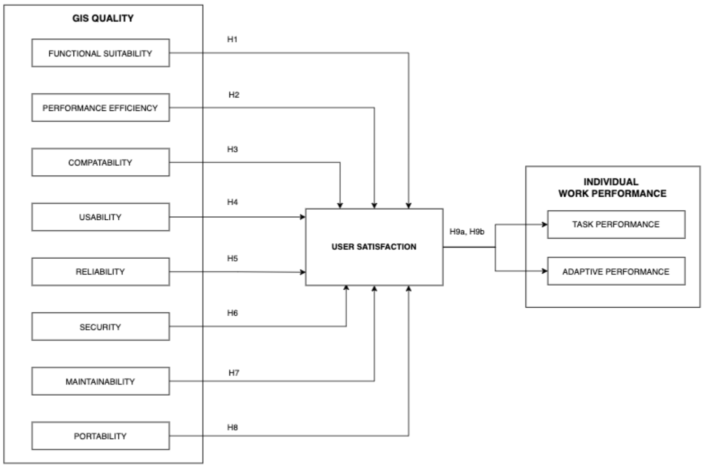

Figure 1. Framework of the Study

METHODOLOGY

This study is meant to identify the level of GIS quality, user satisfaction, and individual work performance in the selected organization. This study also aims to investigate the relationship between GIS quality and user satisfaction as well as examining the influence of user satisfaction on individual work performance. From the research objectives, the research paradigm for this study is positivism and utilizes a quantitative approach. The sampling technique used for this study is purposive sampling. Purposive sampling is a method that is used to meet the objectives of the study where the responses involved in this study is from the specific or selected group of individuals in the selected organization. The selection of respondents chosen were made as the group of users use GIS as a tool in delivering daily work tasks. The purposive sampling is a method chosen because the respondents are a group of people who use GIS to serve particular purposes and meet the objective of the study (Campbell et al., 2020). Hence, through the nature of the utilisation of GIS, they are purposely selected as the respondents of the study. For data analysis, all analysis were conducted through SPSS and SmartPLS. The decision to use PLS-SEM was made based on its ability to handle small sample sizes, non-normal data, and complex relationships between variables. The assessment of PLS-SEM involved examining its reliability, validity, and predictive power.

DATA COLLECTION

For sample size of the study, the population is 1120 staff where the minimum required sample size for the study according Raosoft's sample size calculator is 287. According to Roscoe's rules (1975), which were cited in Sekaran & Bougie (2016), a sample size greater than 30 and less than 500 is sufficient for collection and analysis. This study received 362 respondents of GIS users from the selected organization. According to Krejcie and Morgan (1970), when dealing with respondents between 1100 to 1200, the suggested sample size should be between 285-291. In determining suitable sample size for the study, the researcher utilized a sample size calculator by Raosoft (2004), which recommended a sample size of 287. However, the researcher chose to distribute 550 surveys and received 362 responses. This final number of respondents aligns with both the recommendations of Raosoft (2004) and Krejcie and Morgan (1970).

STUDY FINDINGS

Based on the approach of this research, quantitative methods are employed, and the questionnaires are distributed using Google Forms to the users of GIS. The following hypotheses were established for this study:

Hypothesis Testing

1. H1: There is a relationship between functional suitability and user satisfaction.
2. H2: There is a relationship between performance efficiency and user satisfaction.
3. H3: There is a relationship between compatibility and user satisfaction.
4. H4: There is a relationship between usability and user satisfaction.
5. H5: There is a relationship between reliability and user satisfaction.
6. H6: There is a relationship between security and user satisfaction.
7. H7: There is a relationship between maintainability and user satisfaction.
8. H8: There is a relationship between portability and user satisfaction.
9. H9a: There is a positive influence on user satisfaction and task performance.
10. H9b: There is a positive influence on user satisfaction and adaptive performance.

Demographic Profile

Table 1.0 below presents the frequency and the percentage of the study. Out of 362 respondents, 196 are male and 166 are female. All of the respondents are users of GIS in the selected organization with 54.1% male and 45.9% female. It is also indicated that the highest age range is between 31 years old to 40 years old, followed by 41 years old to 50 years old, 85 respondents are between 21 years old to 30 years old, and the lowest is above 50 years old. In terms of education background, 61.6% (223) respondents have with bachelor's degree, 18.5% (67) respondents with a diploma, 11.9% (43) with SPM, 4.1% (15) with a master's degree, 2.8% (10) with STPM, 0.8% (3) with certificate, and 0.3% (1) with a doctorate degree. Respondent experiences were also recorded where most of the respondents are between 6 to 10 years of experience (95 respondents), followed by 1 to 5 years (90 respondents), 11 to 15 years (74 respondents), 16-20 years (65 respondents) and lastly is above 20 years (38 respondents). Lastly, from Table 1, the highest frequency of use is once a month with 65.5% (237 respondents), the second highest is 18.5% (67 respondents), and the lowest is 16% (58 respondents).

Table 1: Gender, Age, Education Level, Working Experience, Frequency of Use

		Frequency	Percentage
Gender			
Valid	Male	196	54.1
	Female	166	45.9
	Total	362	100.0
Age			
Valid	21-30 years old	85	23.5
	31-40 years old	158	43.6
	41-50 years old	102	28.2
	Above 50 years old	17	4.7
	Total	362	100.0
Education Level			
Valid	Bachelor Degree	223	61.6
	Diploma	67	18.5
	Masters Degree	15	4.1
	SPM	43	11.9
	STPM	10	2.8
	Others	3	.8
	PhD	1	.3
	Total	362	100
Working Experience			
Valid	1 to 5 years	90	24.9
	6 to 10 years	95	26.2
	11 to 15 years	74	20.4
	16-20 years	65	18
	Above 20 years	38	10.5
	Total	362	100
Frequency of Use			
Valid	Few Times a week	67	18.5
	Once a Week	58	16
	Once a Month	237	65.5
	Total	362	100

Descriptive Analysis

Table 2 shows the mean result of variables and dimensions of the current study. Respondents were asked to rate using a seven-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) on their opinion on GIS quality, satisfaction, and individual work performance. Performance efficiency recorded the highest mean score of 5.765. The second highest mean is adaptive performance with a score of 5.649. Following that is functional suitability with a mean score of 5.631. Task performance recorded a mean score of 5.619, Meanwhile for usability, the mean score recorded is 5.597. The dimension of portability recorded a mean score of 5.509. User satisfaction with a mean score of 5.485. The mean value for security recorded is 5.357. In terms of reliability, the mean score is 5.300. The element of compatibility recorded a mean score of 5.249, and the lowest is maintainability with a mean score of 5.165.

Table 2: Descriptive Analysis of Construct

Constructs	Mean
Functional Suitability	5.631
Performance Efficiency	5.765
Compatibility	5.249
Usability	5.597
Reliability	5.300
Security	5.357
Maintainability	5.165
Portability	5.509
User Satisfaction	5.485
Task Performance	5.619
Adaptive Performance	5.649

Measurement Model Assessment

Table 3 shows the results of assessment on the measurement model. Factor loading, composite reliability (CR) and average extracted variance (AVE) were used as criteria for assessing the measurement model. According to Ramayah et al. (2018), the suggested loading factor is at 0.708 or higher. Even so, according to Hair et la. (2017) Bryne (2016), and Ziyae (2016), indicates that the loading levels that are > 0.7, 0.60 and 0.5, and 0.4 is adequate if the AVE and CR are completed by high scores of loadings. From the results in Table 3 suggest that all of the criteria are met and suggesting the converging validating of the measurement model are accepted. Figure 2 shows the SmartPLS output of the measurement model.

Table 3: Factor Loading, Composite Reliability, Average Variance Extracted

Construct	Items	Factor Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)
Functional Suitability	FS1	0.877	0.954	0.775
	FS2	0.870		
	FS3	0.849		
	FS4	0.879		
	FS5	0.909		
	FS6	0.897		
Performance Efficiency	PE4	0.896	0.889	0.801

	PE5	0.893		
Compatibility	CP1	0.891	0.943	0.806
	CP2	0.922		
	CP3	0.882		
	CP4	0.895		
Usability	USB2	0.854	0.954	0.748
	USB3	0.878		
	USB4	0.896		
	USB5	0.862		
	USB6	0.847		
	USB7	0.887		
	USB8	0.830		
Reliability	RL2	0.906	0.918	0.789
	RL3	0.881		
	RL4	0.878		
Security	SC1	0.887	0.965	0.819
	SC2	0.910		
	SC3	0.916		
	SC4	0.933		
	SC5	0.900		
	SC6	0.885		
Maintainability	MB1	0.859	0.964	0.791
	MB2	0.889		
	MB3	0.904		
	MB4	0.884		
	MB5	0.893		
	MB6	0.891		
	MB7	0.908		
Portability	PB1	0.880	0.958	0.791
	PB2	0.926		
	PB3	0.867		
	PB4	0.857		
	PB5	0.893		
	PB6	0.910		
User Satisfaction	US1	0.918	0.977	0.841
	US2	0.945		
	US3	0.938		
	US4	0.905		
	US5	0.927		
	US6	0.914		
	US7	0.928		
	US8	0.861		
Task Performance	TP1	0.902	0.973	0.856
	TP2	0.928		
	TP3	0.950		
	TP4	0.916		
	TP5	0.934		

	TP6	0.922		
Adaptive Performance	AP1	0.913	0.973	0.877
	AP2	0.953		
	AP3	0.942		
	AP4	0.938		
	AP5	0.936		

The assessment of discriminant validity uses the Heterotrait-Monotrait ratio of correlations (HTMT) as suggested by Hair et. Al (2014). For this study, all the HTMT values of each construct range fulfilled the recommended criterion value of 0.90 (Gold et al., 2015) and a value of 0.85 (Kline, 2015). This indicated that the discriminant validity had been ascertained. Table 4 shows the results of HTMT.

Table 4. HTMT Assessment of Discriminant Validity

	Adaptive Performance	**Compatibility**	**Functional Suitability**	**Maintainability**	**Portability**	**Performance Efficiency**	**Reliability**	**Security**	**Task Performance**	**User Satisfaction**	**Usability**
Adaptive Performance											
Compatibility	0.686										
Functional Suitability	0.715	0.834									
Maintainability	0.732	0.873	0.819								
Portability	0.812	0.785	0.819	0.868							
Performance Efficiency	0.756	0.863	0.858	0.800	0.838						
Reliability	0.785	0.838	0.843	0.852	0.883	0.851					
Security	0.742	0.828	0.814	0.847	0.849	0.776	0.845				
Task Performance	0.880	0.718	0.764	0.756	0.828	0.783	0.802	0.747			
User Satisfaction	0.765	0.809	0.848	0.849	0.872	0.798	0.885	0.805	0.837		
Usability	0.743	0.847	0.837	0.856	0.864	0.874	0.852	0.830	0.808	0.857	

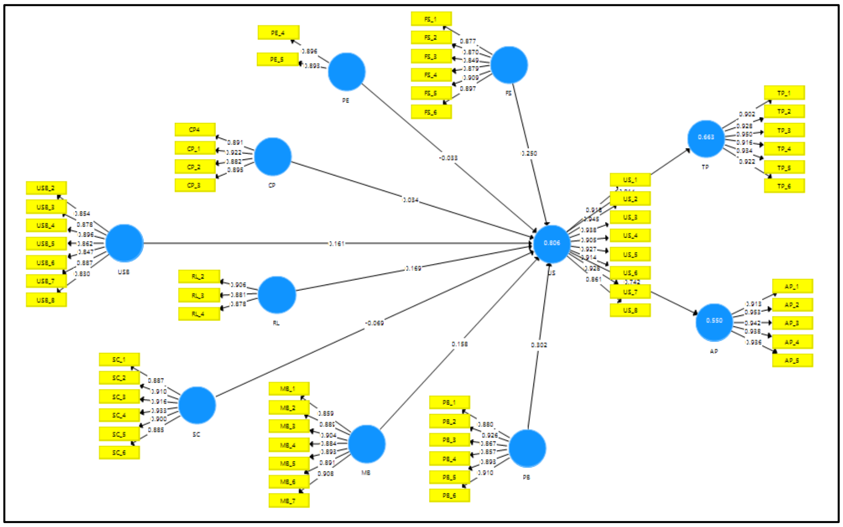

Figure 2: SmartPLS output of the measurement model

Structural Model Assessment

Table 5 exhibits the results of the path analysis, VIF, f2, R2, and Q2 for GIS quality, user satisfaction, and individual work performance. The Variance Inflation Factor evaluated whether there is an issue with multicollinearity in the model. Hair et al. (2011) indicated the suggested value is < 5.0. Based on the results, the model does not show a problem with multicollinearity as all of the VIF values are below 5.0. For interpretation of the result, the supported hypothesis was considered when $p < 0.001$ ($t > 1.645$) or $p < 0.05$ ($t > 1.96$) or $p < 0.001$ ($t > 2.58$). The result clearly indicated that there are 7 hypotheses that are supported, and 3 hypotheses are not supported. In assessing the significance and relevance of the structural model relationship, R2 was assessed. Cohen (1988) recommended a different interpretation of R2, where 0.26, 0.13, and 0.02 respectively are described as substantial, moderate, and weak. The value of R2 in this study is 0.639, implying that the estimated model is substantial.

After the above process was completed, the blindfolding procedure was also carried out using the D=7 distance omission to analyze the predictive relevance. The predictive relevance of Q2 for user satisfaction is 0.630, task performance is 0.523, and adaptive performance is 0.448. As the Q2 value is above zero, the model is predictive of relevance based on user satisfaction, task performance, and adaptive performance. Concurrently, Ramayah et al. (2018) recommended in order to assess the level of effect size (f2) using the effect size suggested by Cohen (1998). The aim of the the (f2) assessment is to identify the level of effect size of predator constructs on an endogenous construct (Cohen, 1988; Ramayah et al., 2018). Furthermore, in terms of effect size, Cohen (1998) recommended (f2) values are 0.35 (Large), 0.15 (Medium), and 0.02 (Small). As presented in Table 5, the results prove that all antecedents in GIS quality are identified to be small and meanwhile, task performance and adaptive performance for individual work performance are identified are large.

Table 5: Result Path Analysis, VIF, f^2, R^2, and Q^2

	Original Sample Mean (O)	Standard Deviation (STDEV)	T Value	P Value	VIF	f^2	R^2	Q^2
H1: Functional Suitability -> User Satisfaction	0.250	0.068	3.690	0.000	3.772	0.086	0.806	0.630
H2: Performance Efficiency -> User Satisfaction	-0.033	0.047	0.686	0.247	2.664	0.002		
H3: Compatibility -> User Satisfaction	0.034	0.055	0.622	0.267	4.240	0.001		
H4: Usability -> User Satisfaction	0.161	0.071	2.253	0.012	4.893	0.027		
H5: Reliability -> User Satisfaction	0.169	0.071	2.361	0.009	4.438	0.029		
H6: Security -> User Satisfaction	-0.069	0.072	0.964	0.168	4.440	0.005		
H7:Maintainability -> User Satisfaction	0.158	0.071	2.224	0.013	4.772	0.021		
H8:Portability -> User Satisfaction	0.302	0.058	5.188	0.000	4.538	0.104		
H9a: User Satisfaction -> Task Performance	0.814	0.071	2.253	0.000	1.000	1.969	0.063	0.523
H9b:User Satisfaction -> Adaptive Performance	0.742	0.043	17.128	0.000	1.000	1.224	0.550	0.448

DISCUSSION

Software quality is defined to be a group of criteria contributing to the identifying quality aspects of software or systems (Haoues et al., 2017). In addition, the antecedents of software quality were crucial to ensure the satisfaction from users is met in alignment with the expectation of system utilization (Elias et al., 2021). As a result, this study has shown the antecedents in GIS quality. From the results, it has been identified that functional suitability, usability, reliability, maintainability, and portability have a relationship with user satisfaction. Kalankesh et al. (2020) highlighted that the factor that contributes to user satisfaction in any information system implementation is when the system can provide the functionality to assist in task completion. Failure to provide suitable functionality will impact satisfactory feelings and lead to the system being abandoned by the users. In the context of usability, according to Khan et al. (2019) when the usability of software is recognized, it will improve the satisfaction of users where the output is directed to the action of efficiency and effectiveness. The usability requires an understanding of the software as it can lower the chances of errors during actual utilization (Ferreira et al., 2019). For reliability, Nanthaamornphong and Carver (2017), reliability has a significant relationship with user satisfaction where the maturity directly derived from the capability to be operated under specified conditions for a specified period. It is important that from the point of view system's stakeholders including end-users to be confident with the reliability where it can function even if there is a faulty to the software or hardware (ISO, 2011). In a study by Yang et al. (2023) also found that the element of satisfaction was driven by the ability of the software to be maintained and enhanced through the code given for enhancement. The ability of GIS to be maintained and modified according to new needs without impacting directly existing usage, give tremendous confidence the solution can be maintained by the organization (Gupta & Chug, 2020). Lastly, portability is a factor that influences satisfaction when the software or system is able adapting in the sense of changing the environment (Peters and Aggrey, 2020). Despite of existing nature of the environment being impacted, the software is able to function as expected. This indicates that portability is a factor that supports the quality needed in software. Without the ability to provide an element of adaptability, installability, and replaceability, the software is not able to achieve the expected qualities needed (Arevalo et al., 2021).

Furthermore, user satisfaction is identified to have a positive influence on task performance and adaptive performance. This is because all the positive antecedents in GIS quality have significant value for the users, especially in delivering work tasks (Elias et al., 2021; Domingos et al., 2022; Assifa et al., 2023). It also concurs that user satisfaction positively influences task performance and adaptive performance where the users deliver the tasks according to the process and adapt the situation to employ individual creativity (Aslan et al., 2022; Nandini et al., 2022). For performance efficiency, compatibility, and security that do not have a relationship, the nature of GIS behavior has become an issue in performance, and compatibility is subject to be improved from time to time (Al-Ibbini, 2017; Kaur et al., 2018). Lastly, for security, the findings might be derived from the expectation security provided is responsible for the deployment environment that is responsible to the security and not handled by the software or system itself (Mahmudova, 2018; Gunduz & Das, 2020; Khan et al., 2021; Khan et al., 2022).

LIMITATIONS AND RECOMMENDATIONS

This research has several limitations even though the objectives of the study have been achieved. The first limitation of the study is the sample size which is limited to a single selected organization in Malaysia. The results received did not represent the overall behavior of GIS users through other fields of organizations in Malaysia. This might give a wide range of in the context of responses, answers, and feedback given by the respondents. Eventually, if this were implemented, it may affect the generalizability of the findings for measuring the GIS quality. The background of the GIS user also requires further selection. Knowing the existing respondents of the selected organization do not have a proper GIS background, it is valuable to next in the research should focus to the users that have at least basic knowledge of GIS. It also suggested that future studies to conduct research inside the organizations that have dissimilar behavior of GIS were utilized. In addition, therefore future study needs to consider the respondents by identifying respondents that have knowledge and understanding of GIS and how it works so they can provide better results in determining the required qualities in GIS solutions. This perhaps will give better output on the understanding of GIS quality. Future studies also are suggested to expand the study to other wider organizations with a bigger number of respondents.

For recommendations, the organization should invest in latest infrastructure in order to manage the needs of data processing as well as giving fast response time. Knowing GIS is a heavy system, investing in infrastructure would give positive impact to the users. The organization also may improve the information quality and literacy on GIS among the users. Standard procedure will assist users in producing quality information while GIS literacy will increase the ability of users in operating GIS as well as producing high quality information that certainly will give significant impact and good returns to all parties.

CONCLUSION

The selection of a GIS solutions used by individuals or organizations must be thoroughly evaluated based on the ISO-25010 software quality model which defined to be the universal approach to determining the quality aspects of a software. This study has given the understanding on the level of GIS quality, user satisfaction, and individual work performance as well as to investigate the relationship between GIS quality and user satisfaction, and how user satisfaction influences individual work performance in the selected organization. Based on the findings, functional suitability, usability, reliability, maintainability, and portability have a significant relationship with user satisfaction. It is also found that user satisfaction has positive influence on task performance and adaptive performance. This is aligned with previous studies conducted where software quality factors significantly impact user satisfaction and user satisfaction positively influence individual work performance.

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