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Abstract:

This paper evaluates the Local Heritage Knowledge Repository System (LHKRS) by identifying the factors which influence the individual impact using the Information System (I.S.) success model. The I.S. success model is a common framework that has been developed and updated by DeLone and McLean, to test an information system. The success model comprised of seven factors: system quality, information quality, service quality, user satisfaction, intention to use, use, and individual impact.

z Findings show system quality and the information quality has a positive impact on use and user satisfaction. The service quality has minimal impact on user satisfaction, and no significance was identified towards use. between the dependent variables, which are use and user satisfaction, user satisfaction had the highest positive impact on individual impact. This seven-dimension model captures the values needed for a successful LHKRS implementation.

Keywords: individual impact; IS. success model; local heritage; knowledge repository.

Introduction:

Knowledge repositories systems have gained popularity in the tourism sector since the vast advancement in web, internet, mobile, and database technologies . Before the era of the web and internet, the repositories were very much in a physical file-based system, or at the most, they were maintained in a spreadsheet. In the digitised knowledge repository, the data are organized into a database with a meta-data keyword being assigned to the data (Noor et al., 2019). This allows the stored data can be retrieved with precision. The user who seeks for information will obtain information in the most efficient way. A knowledge repository can range from a school knowledge repository up to sophisticated medical or finance systems repositories.

There are some challenges faced by the knowledge repositories system, which is the user rarely uses the information within the repository due to inadequate information quality within the knowledge repository. According to Gorelick, Milton, and April (2012), this can be optimized via having a planned activity to boost the usage and feedback session of knowledge repositories. By engaging the users, it will make the repository to have a matured database with continuous user feedback sessions.

Some of the accessible repositories are H.P.'s project profile repository, which stores the project knowledge and other information pertaining to H.P. projects. This repository provides the user with a quick recent accessed files list for better user engagement (Iyengar & Montealegre, 2021). In Europe, a train ticket provider created a knowledge repository to aid customers & travelers to obtain full-fledged navigation information. Besides that, the repository has a smart function, which suggests the user with useful links, which has some similarities to the parent searched topic. Another accessible knowledge repository, which was discussed in helpscout.com, is an information site about the U.K. government. Despite information being published regarding the U.K., this knowledge base is known for its decluttered and minimalist design. Gov.uk provides an abstract paragraph for the user to quickly glance trough information before reading the whole story. This allows the user to be a fast reader, and he/she can be selective in navigating the knowledge repository.

Local Heritage Knowledge Repositories (LHKRS) have been available to the public for many years in Malaysia. These repositories exist in both modes, which are hard copy documents and digital in the form of audio, video, text, and images. Despite the availability of this information, the effective utilization of this information is very minimal. As an initiative, to increase the information value, the structured and unstructured data was synergized into a single information system.

Previous LHKRS had a limitation in the search engine, where it uses search by selection method to get information from the database. This search method was not sufficient as the system returns a big chunk of information that is irrelevant to the user. Research by Wong, Osman, Masron, and Talib (2016) was conducted to improve the search method into a more intelligent searching method that uses a hybrid

searching mechanism that combines search by selection and keyword search to obtain more accurate results from the database.

The research indicates that the hybrid searching method provides more accurate search results compared to the original search by the selection method. The hybrid searching method recorded a consistent 100% accuracy on the search result (Charalambous, Fleszar, & Hindi, 2010), where else the search by selection gave a massive amount of data, which is practically ineffective for the users. In this paper, holistic research is conducted to identify factors that influence individual impact using the Information System success model for an LHKRS.

Background of Study

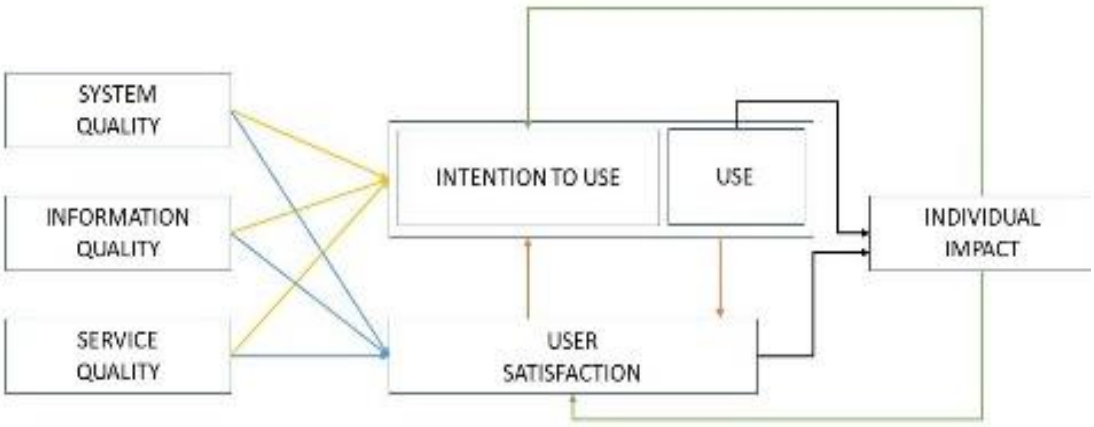
Today's LHKRS in Malaysia is very much in a physical form, and the digital version is not being adopted effectively by the Malaysians (Abd Manaf, 2008). Most of the systems were developed and implemented to behave as an archive instead of a centralized information hub.

Illustrates the revised I.S. success model:

Having an information system which is not adequately designed, does not create value as it does not capture the value proposition for a user which is the individual impact. The design factor touches both the elements, which are the user interface and the data structure. Adding to this, the majority of the LHKRS are accessible via a desktop web browser and standalone systems. With the Internet of Things being a catalyst in today's information massive society, a robust and easy to use knowledge repository becomes a need for the local heritage knowledge repository (Bakalos, Doulamis, & Doulamis, 2020).

Underlying Theory

The Delone and McLean Information System (I.S.) success model encapsulates the six most critical dimensions of an information system are generally evaluated (Adebowale I. Ojo, 2017). The revised Delone and McLean Information system success model is used as the guiding principles to meet the objective of this research.



In a study that was conducted by Adebowale I. Ojo (2017), the I.S. success model is used to gauge a hospital information system. This study surfaced; system quality has positive feedback on the usage of the hospital information system. It was also found that the service quality of the system is an essential factor for the success of an information system in the healthcare sector. Khan (June 2010) conducted research to validate the Swedish e-Tax system. Mailangkay, Indrajit, Kosala, and Hidayat (2019) against the I.S. success model. Despite gauge, the success factors of the benchmark study were required to gain a positive justification for ICT systems investments. An online survey was conducted to get the opinion from the Swedish citizens on the Skatteverket system. The study shows for an e- taxation system, the citizen of Sweden weighted the system quality and service quality as the success factor for the e-tax system. Based on these past studies, it is proven that the I.S. success model is a holistic model that can be used for various types of information systems, and they can come from different industries.

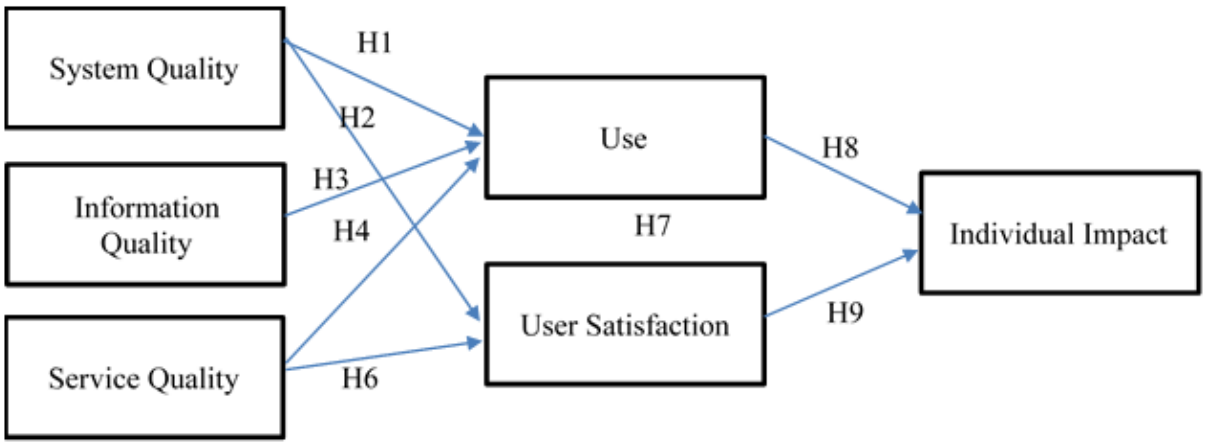
Conceptual Framework

This primary research objective is to evaluate the LHKRS by identifying factors influencing the individual impact using an I.S. success model. Success model I.S. has seven variables that can be classified into the independent variable and dependent variable(Adebowale I. Ojo, 2017; Khan, June 2010). The I.S. success model is a three-tier model where it starts with the individual variables towards the middle layer, which are the dependent variable, and lastly is the objective of this research, which is the individual impact.

The conceptual model is molded on two dimensions vs. the updated I.S. success model. Firstly, the net benefits dimension is renamed as an individual impact to represent the value of the LHKRS better. The use dimension is used for this study because the LHKRS is not mandatory for any individual. In the research conducted by Khan (June 2010), its highlighted the I.S. success model states that "intention to use" is an attitude element, where else the "use" is identified as a behavioral element.

Now looking at the feedback arrows, there are few arrows being removed when compared to the updated I.S. success model. The visible arrows are the feedback arrow from individual impact to use and user satisfaction. The reason is that this model is tested by empirical data at a single point in time only (Khan, June 2010). Adding on, another reason for amendments to the feedback arrows is to eliminate complexity on the adopted model aligning back to the research objective.

Hypothesis development is derived from the conceptual model in Figure 2. The I.S. success model is a 3 tier model where it starts with the individual variables towards the middle layer, which are the dependent variable, and lastly is the objective of this research, which is the individual impact.



Hypothesis development

System quality is an essential independent variable from the developed conceptual model. Based on the successful model of Delone & McLean in an internet environment is evaluated using the characteristics of the electronic system. Where the System quality impacts directly on use and user satisfaction. The system quality is gauged by flexibility, stability, reliability, usefulness, user-friendly interface, and response time. Using this matrices H1 and H2 are developed.

H1: System quality will have a positive impact on the use of LHKRS.

H2: System quality will have a positive impact on the user satisfaction of the LHKRS.

Information Quality refers to the information output based on the purpose of the information system. According to Rai, Lang, and Welker (2002), information quality refers to the accuracy and the format of the content. Based on the conceptual model, the below hypothesis, H3, and H4 can be developed.

H3: Information Quality will have a positive impact on the use of LHKRS.

H4: Information Quality will have a positive impact on the user satisfaction of the LHKRS.

Service quality refers to the support model, which is being rendered for the system users (Nugroho & Prasetyo, 2018). The DeLone and McLean model state that reliability, responsiveness, and assurance are embedded in service quality. That these characteristics H5 and H6 can be rendered.

H5: Service Quality will have a positive impact on the use of LHKRS.

H6: Service Quality will have a positive impact on the user satisfaction of the LHKRS.

The use variable has two relationships, which is towards user satisfaction and individual impact. According to Mustafa, Kar, and Janssen (2020) define as a system that is used daily for a specific task. In another note by Petter, DeLone, and McLean (2008), where use is defined as the usage of the user with respect to the capability of the system. In other words, it refers to the full usage of the system

capacity and functions. With the above explanation, H7 and H8 are developed.

H7: Use will have a positive impact on the user satisfaction of the LHKRS.

H8: Use will have a positive impact on the individual impact of the LHKRS.

User satisfaction has a since relationship towards the individual impact. The overall level of user satisfaction and user opinion is defined as user satisfaction (D'Elia & Walsh, 1983). Doll and Torkzadeh (1988) specifies content relevance, information accuracy, content format, ease of use, and timeless are prime matrices in benchmarking user satisfaction. With the above explanation, H9 can be derived to create a relationship from user satisfaction towards individual impact.

H9: User satisfaction will have a positive impact on the individual impact of the LHKRS.

Methodology

The research methodology adopted for this research is quantitative. Quantitative research can be in the form of questionnaires and experiments. However, based on a study by Khan (June 2010), it is referenced that experiments are not suitable for information systems research.

Population and Sampling

The population that is being focused on this research is the Gen-Y category of Malaysians. Gen-Y is the focused group that will use LHKRS due to the maturity of the Gen-Y in the year 2019 and 2020.

The total number of responding to the online questionnaire is 186, and the valid respondent is 168 respondents. The valid respondents are from the Gen-Y category of Malaysians. 90.3% of the respondents are from the category of Gen-Y. Out of the total valid respondents, 54.1 % are male respondents, which sums to 91 respondents, and the remaining, which is 45.8%, which counts to 77 respondents, are female. Another set of information was also gathered to check the familiarity of the respondents with knowledge repository systems. 86% of the respondents have been familiar with knowledge repositories. Remaining valid respondents, which is 13%, are not familiar with knowledge repository systems. A total count of 86 respondents are degree holders followed by 37 of them are having diploma/advanced diploma. The next largest education group are the master's degree holder which sums to 17 of them.

Data Collection Procedure

An online questionnaire is the primary data collection technique applied to this survey. A pilot test was conducted on a small sample, which consists of working colleagues and friends who uses search engines and people who travel around often to validate the questionnaire. Minor errors in question constructions and ambiguity were solved in this process.

Measurement of Variables

The questionnaire comprised of two parts: the first part on the demographic questions of the respondents, and the second part was concerned with items assessing the I.S. model for LHKRS. The seven items proposed in this study adapted from Roky and

Meriouh (2015). A five-point Likert scale was used to measure each item.

Data Analysis

The data analysis tool used in this research were SPSS and SMART-PLS. SPSS is used to analyze demographic information of the questionnaire in the first section. The PLS structural modeling technique has a recommended range of respondents, which is a sample size of 100 and above and was used to evaluate the proposed model in Figure 2

Measurement Model

The Smart-PLS software was used to model the conceptual framework to gather the analysis results for the measurement model. From the measurement model, the results are validated against below benchmark values which are set for the Smart-PLS analysis framework.

Below, Figure 3 illustrates the model which was created in Smart-PLS. The analysis data of the model are tabulated in .

Results

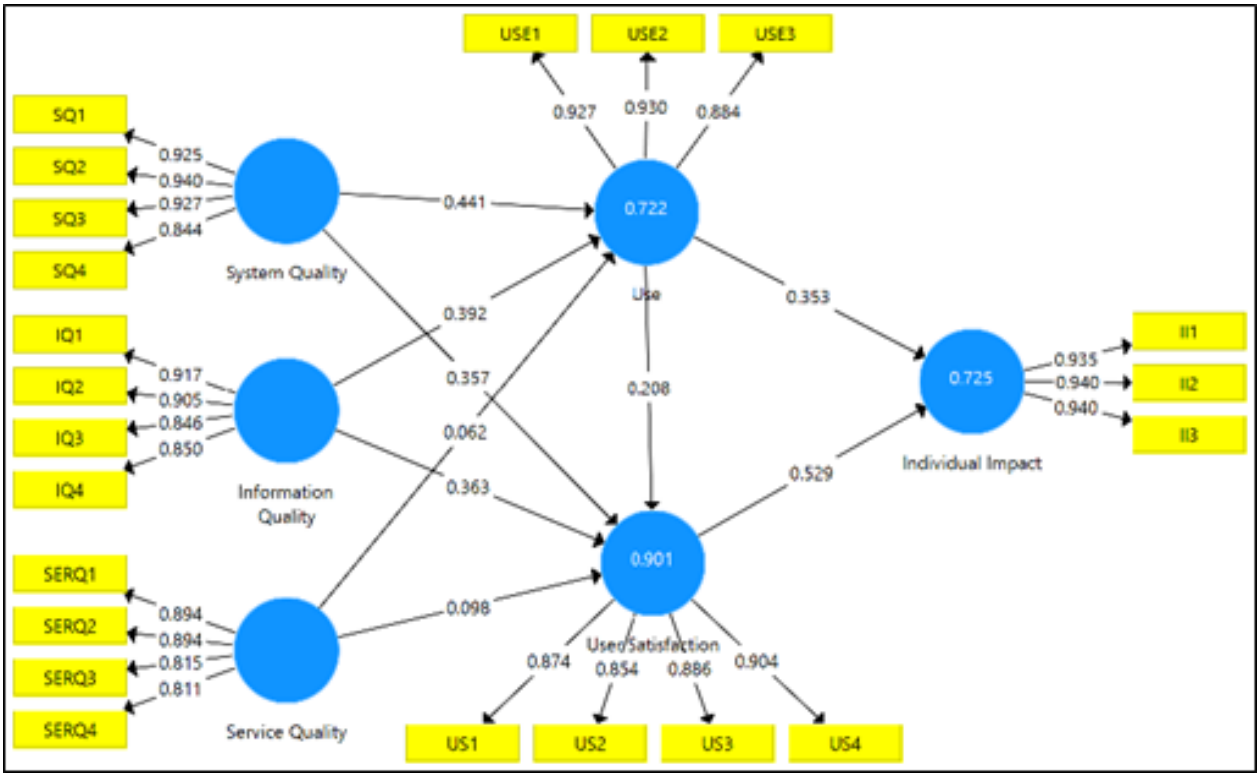


Figure 1. SMART-PLS Model

The indicator loadings for all items are recorded above the benchmark value, which is > 0.5. This means that the item is a reasonable measure for the latent construct. The AVE value explains the amount of variance due to measurement error. The AVE is required to be more than 0.5, and the collected results of AVE is more than 0.5. The next measurement is the internal consistency where the composite reliability, which is more than 0.7, indicates the indicators of the model show enough consistency. This measurement supports the convergent validity(Hair).

The discriminant validity in

Table **1** was conducted using the Heterotrait-Monotrait (HTMT) criterion. In discriminant validity, the researcher can only report HTMT as mentioned by Henseler et al. (2015) that propose a method of HTMT as an alternative in determining discriminant validity due to the fact that traditional Fornell-Larcker and cross loading's assessment methods have low sensitivity in detecting discriminant value issues if two constructs are not distinct.

Table 2 tabulates the values of the HTMT, where it shows there are indicators measured higher than the benchmark, which is 0.85. This indicated that the latent constructs in the questionnaire created an overlapping perception among the respondents. Therefore, the discriminant validity of this model was not fulfilled.Measurement model

All Items Loading > 0.5 indicates Indicator Reliability

All Average Variance Extracted (AVE) > 0.5 as indicates Convergent Reliability

All Composite reliability (CR) > 0.7 indicates Internal Consistency

All Cronbach's alpha > 0.7 indicates Indicator Reliability

Constructs	**Items**	**Loadings[a]**	**AVE[b]**	**CR[c]**	**Rho_A[d]**
System Quality	I prefer to use a system is fast & responsive	0.925	0.828	0.95	0.933
	I prefer a system to be mobile friendly	0.94			
	I prefer a system which allows me to choose my search	0.92			

	criteria	7			
	I need a system which suggest me recommendations	0.844			
	I need a system which gives accurate search results	0.917	0.775	0.932	0.906
Information Quality	I need a system which provides facts which are trustworthy. (Fact Checked Data).	0.905			
	I need the system to provide heritage information in graphical manner with precise information.	0.846			
	I prefer structured information over unstructured information	0.85			
	I prefer a system who provides system support via online chat.	0.894	0.73	0.915	0.897
Service Quality	I prefer the system to have a Q&A section to ease the learning curve.	0.894			
	I prefer the system to provide pop up user tips while using the system.	0.815			
	I prefer the system to have a Whatsapp channel to obtain support services.	0.811			
	A system with a good information quality will ensure user satisfaction.	0.874	0.774	0.932	0.908
User Satisfaction	A system with a good system quality will ensure user satisfaction.	0.854			
	A system with system support and training will ensure user satisfaction.	0.886			
	A good User satisfaction provides a positive impact to the user	0.904			

	I may use the system if it provides informative information (Information Quality)	0.927	0.835	0.938	0.91
Use	I may use the system if it has futuristic function and ease of use. (System Quality)	0.93			
	I may use if the system has effective user training and system support . (Service Quality)	0.884			
	The system will enable more people to be knowledgeable regarding local heritage.	0.935	0.88	0.957	0.936
Individual Impact	Information presented in graphical view will be useful for the user.	0.94			
	The local heritage knowledge repository overcomes the limitation of unstructured data and enables the user to get accurate information	0.94			

Table 1

Discriminant Validity (Fornell & Larcker Criterion)

	Individual Impact	**Information Quality**	**Service Quality**	**System Quality**	**Use**	**User Satisfaction**
Individual Impact	0.938					
Information Quality	0.764	0.88				
Service Quality	0.638	0.65	0.854			
System	0.843	0.876	0.627	0.91		

Quality						
Use	0.807	0.819	0.594	0.824	0.914	
User Satisfaction	0.832	0.911	0.682	0.909	0.858	0.88

Table 2

Heterotrait-Monotrait (HTMT)

	Individual Impact	**Information Quality**	**Service Quality**	**System Quality**	**Use**	**User Satisfaction**
Individual Impact						
Information Quality	0.83					
Service Quality	0.695	0.723				
System Quality	0.905	0.957	0.684			
Use	0.874	0.904	0.658	0.895		
User Satisfaction	0.897	1.009	0.757	0.988	0.946	

Table 3

Bootstrapping result with path coefficient & p-value

	Relationship	**Std Beta**	**Std Error**	**P-Value**	**t-Statistics**	**Decision**
H1	System Quality -> Use	0.454***	0.109	0.000	4.041	Supported
H2	System Quality -> User Satisfaction	0.357***	0.078	0.000	4.564	Supported
H3	Information Quality -> Use	0.389**	0.117	0.001	3.359	Supported

H4	Information Quality -> User Satisfaction	0.349***	0.091	0.000	3.996	Supported
H5	Service Quality -> Use	0.053 n.s	0.076	0.415	0.815	Not Supported
H6	Service Quality -> User Satisfaction	0.098*	0.038	0.010	2.565	Supported
H7	Use -> User Satisfaction	0.222**	0.076	0.006	2.75	Supported
H8	Use -> Individual Impact	0.366**	0.134	0.008	2.642	Supported
H9	User Satisfaction -> Individual Impact	0.516***	0.133	0.000	3.991	Supported

Structural Model

The structural model is assessed by looking at the path coefficient and its t-statistics value. Via the bootstrapping algorithm(Iranmanesh, 2017). Figure 2 and

Figure **3**populates the structural model path analysis.

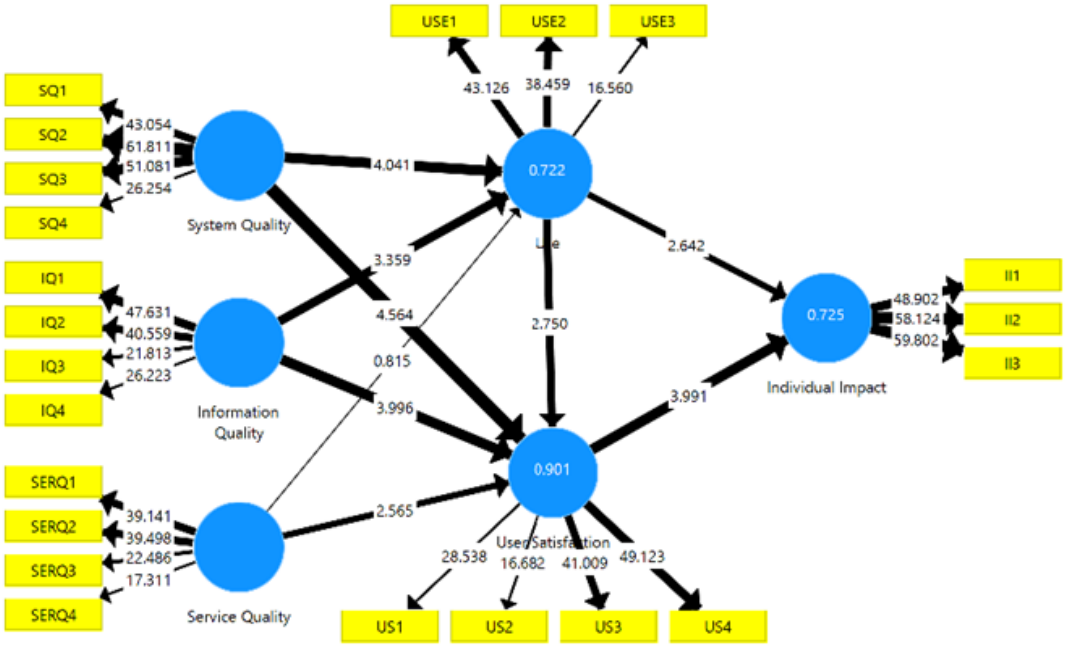


Figure 2. Model after Bootstrapping algorithm

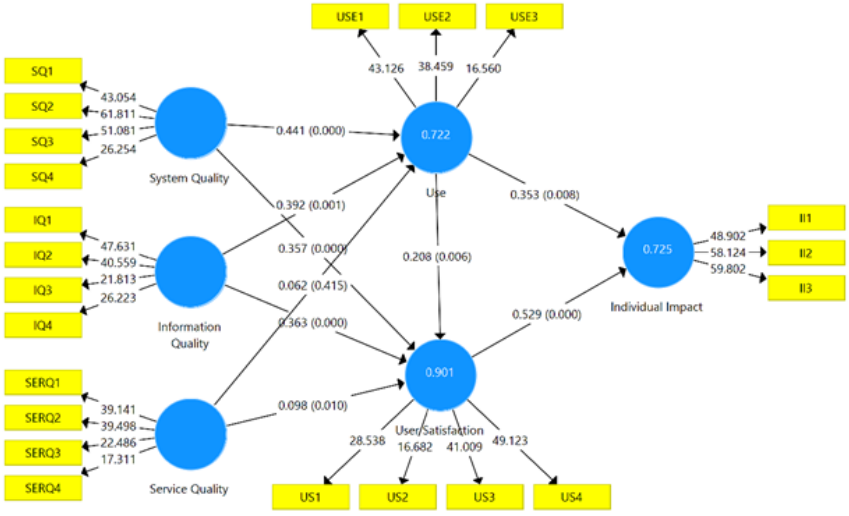


Figure 3. Bootstrapping Model with path coefficients & p-value

Reviewing back the developed hypothesis, the system quality significantly impact on use and user satisfaction. This can be observed with the path coefficients, which are 0.441 and 0.357, respectively. Next is the hypothesis of H3 and H4, where information quality significantly impact on use and user satisfaction, but its lower than system quality.

The H5 is not significant as the p-value is more substantial than 0.1. Therefore, H5 is not supported.H6 shows the least significant on user satisfaction with a coefficient value of 0.098, and H6 is partially supported. The H7, with a coefficient of 0.208, shows it has a minimal positive effect on user satisfaction. This is also the same for H8, where it has a coefficient of 0.353, which is significant at $p < 0.01$. Lastly, the H9 resulted in having the highest positive effect on individual impact with a coefficient value of 0.529, and it is highly significant.

With the hypothesis results in Table **3**, the factors which positively influence the individual impact is system quality, information quality, use, and user satisfaction. Gauging among this dependent variable, user satisfaction has a high impact on the individual impact compared to the use factor. Comparing the individual variables, system quality has a greater influence on the individual impact indirectly via use and user satisfaction.

Implications of the Study

The Analysis shows that the system quality, information quality is the main starting point, which results in influencing the individual impact. It is also observed that, if the user of the LHKRS has a positive user satisfaction, that will contribute to a positive individual impact.

Looking at our I.S. success model, which was used to model the conceptual model to drive this research. Based on the research conducted, this article will be the first study conducted to evaluate the LHKRS using the I.S. success model. The model was able to digest the research data to obtain the results gathered in the analysis section. It is again proven that the I.S. success model is a holistic model to evaluate an information system's success and to identify the key factors which contribute to the system objective.

The practical implications which can be stated from this research are that a knowledge repository requires a significant consideration on the system quality and information quality. These factors have significantly impact on the factor of individual impact. However, the service quality has a partial positive impact on the model, which is towards the user satisfaction. Therefore, a simple support model is best to be attached to a knowledge repository environment.

Study Limitations

The limitations of this study will be the measurement model of the HTMT indicates the latent constructs fail to distinguish among each other. This is due to the indicator designed by the questionnaire. Adding on this study gauges the local heritage model by keeping a base referencing on perception from Gen-Y on an Information System. Another limitation of this study is that the study is only conducted with the Gen-Y category only. Therefore, more sophisticated research requires a more extensive coverage of the population to capture opinions from the older and younger groups.

Conclusion and Future work

The system quality and the information quality are essential for a robust local heritage knowledge repository system. The service quality holds a partial positive effect on the impact on the model. The conceptual model used in this study is able to benchmark the dimensions from the updated I.S. success model to fit the research objective. Future work that can be scoped from this research is that the available LHKRS can be further enhanced to

provide higher individual impact than current. The new projects on knowledgebase and knowledge repository can use this research article to better plan and prioritize the project plan for a more impactful information system.

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