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## USER INVOLVEMENT IN INFORMATION SYSTEM QUALITY

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User Involvement, Information System Quality, Software Process.

## ABSTRACT

Information system quality is a term for success. The success of an information system is the effectiveness of a user to understand the information system and implement the use of technology. One of the factors that can affect the quality of accounting information systems is user involvement, which will be the independent variable in this study. The purpose of this study was to examine and analyze the effect of user involvement on the quality of information systems in SMEs in Indonesia. The primary data used in this study was obtained by distributing questionnaires to 78 SMEs who participated in filling out the questionnaire. In this study, the data were analyzed using the structural equation model-PLS. The results showed that user involvement has a significant effect on the quality of information systems.

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## Introduction

The development of information systems (IS) has often been studied from various angles. As the economy shifts from industry to a service-based framework, information systems are seen as services. These changes encourage individuals who run businesses to be more involved in system development. The differences between users as determinants and IT professionals as developers often overlap (Eichhorn, 2014). According to the literature, user involvement is one of the most important success factors for software projects. The goal of user involvement is to learn more about users and their context of system use in order to effectively develop user-satisfying systems (van Velthoven et al, 2018). User involvement in an information system is generally defined as "participation in the system development process by potential users or representatives (Ives et al, 1983).

One of the key elements determining whether an implementation succeeds or fails is the participation of users in the development of information systems, whether it be to design new systems or modify ones that already exist (Dwivedi et al., 2015). Recently, there has been an increase in research into the relationship between user participation and successful system implementation (De Waal et al, 2014; Bano & Zowghi, 2015; Suoniemi et al, 2022). Additionally, there has been an increase in the

creation of techniques or approaches to enhance and monitor user participation in system development and evaluate article satisfaction with the operational systems (Ju et al, 2016; Leonard-Barton & Sinha, 2017; Attafuah et al, 2022). Software process prediction model has recently emerged as a critical new research area (Nascimento, 2020; Giray, 2021; Martinez-Fernandez et al, 2022).

The phrase "software process" refers to the sophisticated procedure by which software is created, from theorizing to implementation and operation. Formal approaches to software process modeling emerge as a result of the creation of accurate and detailed models to define and track the activities of software development. Software process modeling, in essence, views the software process in the same way that the software process views an application: specifying, diagramming, and even programming the software development process itself. The computer, model (software process program), and developer can collaborate to build a suitable software process model. Enaction is a highly interactive computer-assisted development process that involves both the developer and the programmed software process model. Enhancing software products by defining and enhancing the process that creates them is one of the main goals of software process modeling. The methods used can be applied generally to model and research other related processes (Wong & Tate, 1994).

'User' is a type of stakeholder defined as someone who will be the actual end user of the system or whose work will be affected in some way by the system. Users are assumed to have a reasonable knowledge of the domain and existing systems, so involving the right types of users in the development of information systems is something that should be considered (Bano et al, 2018). The empirical research literature has evaluated this a lot, therefore in this study it will be confirmed whether user involvement has an effect on the success of information systems.

## **Literature Review**

### **The Effect of User Engagement on Information System Success**

Le et al. (2020) created a mediation model to investigate the relationship between organizational characteristics, manager knowledge, management commitment, user involvement, information quality, and management information system effectiveness in small and medium enterprises in Vietnam. The findings indicate that managers' knowledge, user involvement, and information quality all play a significant role in increasing the effectiveness of management information systems. The success of user involvement is based on the psychological aspects of the people involved in the development of information systems; thus, we investigated the Human Aspects factors (User Motivation, User Attitude toward System, User-Developer Attitude, Disagreement/Conflict, Involvement Congruence) in the success of user involvement (Abusamhadana & Elias, 2018). Next is the research conducted by who said that A valid user engagement success model was proposed, with the model's predictive power dominating 57% of user engagement success. With this in mind, it is clear that the model assists information system vendors, managers, decision makers, and practitioners in understanding user engagement success (Abusamhadana et al, 2019). Eichhorn & Tukul (2015) find studies that examine user roles and activities, user choice, communication methods used, and their timing and level of engagement to conduct research on user engagement. The authors review articles that employ a variety of research techniques and empirical studies whose models include longitudinal studies, focus groups, and case studies in addition to moderating and mediating factors. This study provides an opportunity to advance research in this field by making use of the conclusions and limitations of the existing literature. It is a preliminary and systematic documentation of user involvement in an information systems project. As systems development projects advance, the significance of user participation will only increase. As a result, IS success research will continue to focus on how to increase the success of ISD projects through efficient user participation. Further empirical research should shed valuable light on this consistency of practice and attitude given the dynamic nature of the IS development context. Attention should be paid to the significance of research in understanding the various psychological dimensions of user participation in system development (Oo Tha, 2019). A number of studies have documented user involvement in various ways and are known to significantly contribute to information systems. The difficulty faced so far is the lack of 2-way communication between users and system developers in interpreting user needs (Eichhorn, 2014). Additionally, user involvement in the implementation process has been studied, for instance in the context of health information systems, where it was discovered to have a significant impact on the success of the information system (Kuipers, 2016). Ocar & Aggarwal

(2019) summarizes its empirical findings on the three antecedents of information system success in SaaS settings. Management Support, User Engagement and Trust are its predecessors. SaaS providers can leverage these predecessors as leverage to drive the success of their solutions. Furthermore, its predecessors are incorporated into a comprehensive Information Systems Success Model to measure and understand the success of the SaaS solution from the point of view of the SaaS provider. The following is the formulation of the hypothesis, which is based on the goals, perspective, and prior research mentioned above:

H1: Successful implementation of accounting information systems requires positive user involvement

### **Research Methods**

The focus of this study is on the quality of accounting information systems and user involvement in each organization, and the unit of analysis is SME in Indonesia. Non-probability sampling with purposive sampling approach is the sampling technique used in this study. Judgment sampling is the standard used in purposive sampling. Meanwhile, 78 respondents with SMEs in Indonesia have participated as samples for this study. Questionnaires that are delivered to respondents directly are the research tools used. From February 2021 to October 2021, a total of 100 questionnaires were issued. Only 78 (78%) out of 100 (100%) surveys were submitted for further processing.

### **Results and Discussion**

Table 1 below provides the profile of the respondents who took part in this study:

Table 1. Sample Description Statistic

Description	Frequency	Percentage
<u>Gender:</u>		
Male	32	41%
Female	46	59%
Total	78	100%
<u>Last Education:</u>		
S1 (Bachelor Degree)	68	87.17%
Senior High School	10	12.83%
Total	78	100%
<u>Period of Work:</u>		
1-2 years	7	8.97%
2-3 years	15	19.23%
>3 years	56	71.8%
Total	78	100%

Source: Primary data processed, 2022

### **Validity and Reliability Test Results**

Researchers analyzed confirmatory variables in this study to determine valid items for each latent variable, namely user involvement and quality information systems. It can be detected from AVE (Average Variant Extracted). If the AVE value is greater than 0.5, then the results of the AVE value for each latent variable in this study are valid, as shown in table 2 below:

Table 2. AVE value of user involvement and information systems quality

Variable	Dimension	AVE Value	Loading Factor Value
User Involvement	US.I 1, US.I 2, US.I 3, US.I 4	0.887	0.951, 0.954, 0.946, 0.915
Information Systems Quality	IS.1, IS.2	0.978	0.989, 0.989

Source: Primary data processed, 2022

Valid dimensions were checked to obtain the Cronbach Alpha value in order to perform a reliability test. A valid dimension is considered reliable if the Cronbach Alpha for the group dimension is more than 0.7 (Ghozali, 2008).

Table 3. Cronbach Alpha Value

Variable	Dimension	Cronbach Alpha
User Involvement	US.I 1, US.I 2, US.I 3, US.I 4	0.958
Information System Quality	IS.1, IS.2	0.978

Source: Primary data processed, 2022

### Structural Model Testing

The value of R Square is used as a measurement basis for testing the structural model. Table 4 shows the results of testing the structural model.

Table 4. Structural Model

Path	Coefficient	t. statistics	p-value	R <sup>2</sup>
UI→ISQ	0.825	14.661	0.000	0.681

Source: Primary data processed, 2022

Table 4 shows that user involvement has a 68.1% effect on the quality of information systems based on the value of R<sup>2</sup>, and R<sup>2</sup> shows a strong predictive power. In table 4 the path coefficient of user involvement on the quality of information systems is also positive with a probability value of <0.05. This means that user involvement has a significant effect on the quality of information systems (supported hypothesis). Interviews were conducted with several personnel from SMEs in Indonesia to follow up on research findings.

Previous studies, such as that conducted by Le et al. (2020) and Kuipers (2016) have found a significant relationship between user engagement and IS adoption. The problem that often arises in information systems is that users of information systems feel confused about operating the system, because they feel less confident in operating the existing accounting information system, and they are not involved in system development so that they do not have sufficient knowledge. Another trigger can be because the existing information system is not in accordance with the needs of the company, for example the existing information system is too sophisticated for small companies so that the company can experience losses because the costs incurred are very large. On the other hand, large companies use simple information systems so that they cannot meet the company's information system needs. Users must be involved in the design, development, and implementation of information systems, as a form of how important the influence of users on the quality of information systems. Direct participation is further evidence that users are needed actively, because it is considered important for the successful implementation of accounting information systems. The success rate of IS implementation can be increased when IS is designed to meet the needs and expectations of users because the product will later meet those needs and expectations.



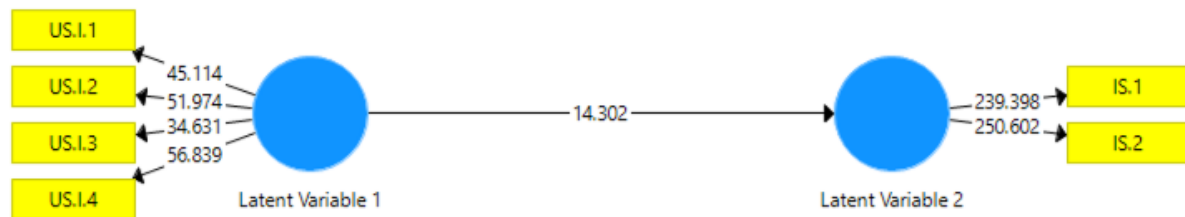


Fig. 1. Full Model T Statistics

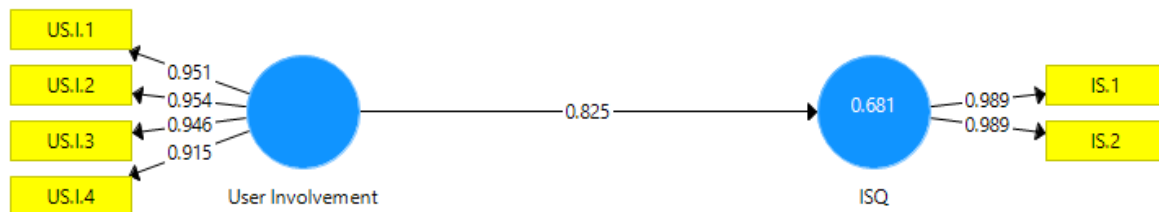


Fig. 2. Full Model Path Diagram

## Conclusions

User involvement has a significant influence on the success of the application of IS in this study. This proves that the influence of user involvement is one of the images that is very important in the design, development and implementation of IS in SMEs.

## Suggestions

As more organizations recognize the wide application of research findings, the ongoing research can increase trust as the utility of acceptance becomes wider. In order to show the same results, it is recommended to conduct another study using the same methodology on various units of analysis and samples. Not all factors that can affect the effectiveness of the implementation of information systems are identified in this study. According to the underlying theory, the next researcher can look at additional independent variables such as personality characteristics, management style, and other factors that can affect the success of IS implementation.

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