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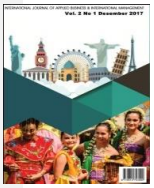

Study of Satisfaction of Information System Users in Study Program (SIMPRODI) in Gorontalo State University

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ABSTRACT

The rapid development of Information Technology (IT) today provides many conveniences in various forms of business, including the service business. System User Satisfaction (User satisfaction) is the response and feedback that the user raises after using the information system.
This study aims to obtain empirical evidence regarding the use of SIMPRODI application products and how SIMPRODI can provide good services for students.
The survey research method was carried out and the data collected was 252 data. The data was then analyzed by PLS-SEM. The results showed that the quality of the system did not have a significant effect on the SIMPRODI intention to use, but the quality of information and quality of service was significant on the intention to use, then when the intention to use was higher the user satisfaction was better and vice versa when the SIMPRODI user satisfaction was high then intention to use is also getting higher.

Keywords: system quality, information quality, service quality, intention to use, user satisfaction

PRELIMINARY

The rapid development of Information Technology (IT) today provides many conveniences in various forms of business, including service businesses (Murdick et.al, 1997; Mc.Leod, 1997). McKeen at al. (1994) argue that if user influence is ignored, the relationship between user participation and user system information satisfaction is expected to be weak and vice versa.

System User Satisfaction (User satisfaction) is the response and feedback that the user raises after using the information system. According to Stanton (1994) and Kotler (2002) the level of customer satisfaction is determined by comparing the expected results of a product or service with results based on experience by consuming the product or service, it is contained in a user's feeling level as a result of comparison between user expectations it will be a product with tangible results obtained by the user of the product. In other words, if the product performance meets the expectations of the user, the level of customer satisfaction is high and vice versa. In this study focused on information system products.

User satisfaction is a barometer of the success of an information system. Based on the International Organization for Standardization or ISO 11620-1998, user satisfaction ranks first from 29 indicators for measuring information system performance (Purnomowati 2000). Satisfaction of information users is a level of comparability between information needs that want to be met with the reality received. User satisfaction can be fulfilled through product quality (e.g. search services, referral services, information availability services, information prices) and conformity of user perceptions of information systems.

Gorontalo State University (UNG) has now become a higher education institution that is in service to students and lecturers based online. The ability of UNG in serving its users (students) will be assessed by its users as well. To facilitate academic services at UNG, a genuine UNG product called SIMPRODI (study program management information system) was created. SIMPRODI can be accessed by students, one of which is to register proposal tests and online-based thesis and other academic services, so that students are facilitated from the registration process to the approval process and invitations to examiners are sent directly through the lecturer account. In addition, SIMPRODI is a product that has participated in the success of less paper policy.

SIMPRODI itself has been running for more than 3 years at UNG, but during this period there has never been previous research to measure the satisfaction of SIMPRODI service users. Although it seems that even students and lecturers are helped by this product, there is no evidence or empirical data that confirms the perceived satisfaction of SIMPRODI users. To obtain empirical evidence, information quality, system quality and service quality are used to measure the level of intention to use of information systems and user satisfaction of information systems (DeLone and McLean (2003).

LITERATURE REVIEW

Understanding Information Systems

Information is a very important thing for management in making decisions. The quality information can be obtained from an information system or also called processing. McLeod et al. (2007: 10), Information Systems are virtual systems that allow management to control the operations of a company's physical system. Information systems are computer applications to support the operation of an organization: operation, installation, and maintenance of computers, software, and data. Information Systems are a set of hardware, software, brainware, procedures and or rules that are integrally organized to process data into useful information to solve problems and make decisions. Information System is an integrated and complementary data processing unit that produces output in the form of images, sounds and writing.

Information system is a set of components that form a system that has a link between one component and another component that aims to produce an information in a particular field. In information systems, the classification of information flow is needed, this is due to the diversity of information needs by information users.

The criteria for information systems include flexible, effective and efficient. In addition, information systems are a collection of interconnected sub-systems that form a component which includes input-process-output related to the management of information (data that has been obtained so that it is more useful for users). In other words, information systems are a set of interconnected components that function to collect, process, store, and distribute information to support the making of satisfaction and supervision in the organization (Laudon and Laudon, 2000). Bodnar and Hopwood (2000) state that computer-based information systems are a group of hardware and software designed to convert data into useful information. The use of hardware and software is intended to produce information quickly and accurately. The information system design process requires several approaches, namely technical approaches, behavioral approaches, and combinations (Laudon and Laudon, 2000). The technical approach includes an emphasis on mathematical normative models to study information systems. In addition, the technical approach also emphasizes physical and formal technological skills of a system. Behavioral approaches are needed because of behavioral problems such as system utilization, implementation, and creative designs that have an impact on behavior and attitude changes. Individual responses to information systems are often the drivers of behavioral problems.

The information system development process in addition to paying attention to the approaches above also considers several factors such as economic factors. King et al. (1994) and Laudon (1985) reveal that the information system development process takes into account internal factors that influence the adoption and design of information systems, including individual and organizational value systems, norms, and organizational strategic and needs; and external factors that come from the environment outside the organization.

Information System Success

The information system design process is expected to function effectively. This effectiveness also indicates that the development of the information system is a success. However, as recognized by Laudon and Laudon (2000), describing system success is a difficult thing. The use of cost-benefit analysis cannot be done perfectly because not all benefits can be quantified. In many studies (Ives et al., 1983; Bailey and Pearson, 1983; Doll and Torkzadeh, 1988; Seddon and Yiew, 1992; Mahmood et al. 2000; Doll et al. 2004; Livari, 2004; Landrum and Prybutok, 2004), the success of information systems is proxied by user satisfaction. However, the use of user satisfaction as a proxy was criticized by Markus and Keil (1994). They critically express satisfaction will not mean much when the system does not cause an increase in the performance of individuals and organizations.

DeLone and McLean (2003), the success of a system development that is proxied by 3 (three) variables, namely system quality, information quality and service quality that will significantly affect the intensity of system usage and also affect the satisfaction of users of information systems in question. Markus and Keil (1994), state that a system's success will have an impact on individual and user organizations, and subsequently the individual impact affects organizational performance.

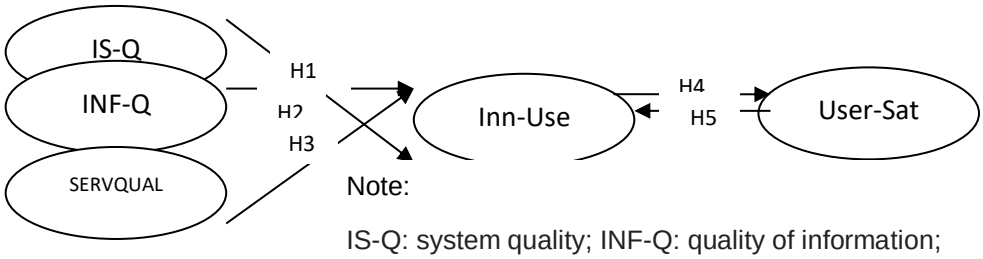
System quality, information quality (information quality) and good service quality, represented by the usefulness of the system output obtained, can affect the level of use of the system in question (intended to use) and user satisfaction (user satisfaction).

System quality means the quality of a combination of hardware and software in information systems (DeLone and McLean, 1992), it can be concluded that the better the quality of the system and the quality of the output system provided, for example, the faster the time to access; and the use of the system output, will cause users not to feel reluctant to reuse; thus the intensity of system usage will increase. Similarly, the quality of information is information obtained by users as correct information from trusted sources that will make users want to use information systems more often and user satisfaction with the information produced is getting better.

Delone and McLean (2003) added a measure of service quality, because they want to add elements of human behavior in the information system. Kettinger et al (1995) and Li (1997) state that information systems cannot be separated from human behavior. Jiang et al (2002) explained that information systems are closely related to SERVQUAL because information systems are a combination of hardware and software (tangible), information systems are very dependent on users (reliability), information systems are responsive to service (responsiveness), information systems require workforce that has assurance (knowledge) and information systems have users who care (empathy). Therefore, the better quality of service that can be felt by users will cause users to feel they want to continue using the information system and are satisfied with the service.

Referring to the opinion above, the hypothesis appears in this study, namely:
H1: the quality of the system will have a significant effect on the intention to use
H2: the quality of information will have a significant effect on the intention to use
H3: service quality will affect the intention to use.
H4: intention to use will have a significant effect on user satisfaction.
H5: user satisfaction has a significant effect on the intention to use

Research model
Referring to the research hypothesis above, this research model can be made. The research model can be seen in Figure 1.



Note:

IS-Q: system quality; INF-Q: quality of information; SERVQUAL: service quality; Inn-Use: intention to use Information systems; User-Sat: user satisfaction.

RESEARCH METHODS

This research is a survey design. The object of this research is students of Gorontalo State University semester 3 and above. Semester 3 and above is chosen because it has been a user of the SIMPRODI information system for more than one year, so it is expected that it is already familiar with SIMPRODI.

The population in this study were all students using the SIMPRODI Information System. The sampling method was taken proportionally in each faculty in the UNG using the stratified random sampling method. 252 data were collected.

The data collected was analyzed using PLS-SEM with 2.0M3 SmartPLS software. Validity test is done with Confirmatory Factor Analysis. The value that is used as a reference in the validity test is the AVE value that is higher than 0.5 while the reliability test uses an alpha cronbcah value greater than 0.6. In this study, the hypothesis can be accepted if it has a higher C.R value than 1960.

MEASUREMENT

The variables in this study are classified into exogenous variables and endogenous variables. Exogenous variables consist of system quality, information quality, and service quality while endogenous variables consist of intensity of system usage, and user satisfaction of SIMPRODI information systems.

Following are the definitions and operational variables:

SIMPRODI Quality System (System Quality)

System quality means the quality of a combination of hardware and software in information systems. The focus is on the performance of the system, which refers to how well the capabilities of hardware, software, policies, procedures of information systems can provide information on user needs (DeLone and McLean, 1992). The indicators used are 4 of the 8 indicators used by Hamilton and Chervany (1981), namely ease of use, ease of access (system flexibility), speed of access (response time), and resistance to damage (reliability). The respondent's perception of the indicator was measured by a 1-5 Likert scale.

SIMPRODI Information Quality (Information Quality)

Information Quality refers to the output of information systems, concerning the value, benefits, relevance, and urgency of the information produced (Pitt and Watson, 1997). This variable describes the quality of information perceived by users as measured by the 4 indicators used by Bailey and Pearson (1983), namely accuracy, timeliness, completeness and presentation of information. Respondents' perception of the indicator was measured by a 1-5 Likert scale.

Service Quality (SERVQUAL) SIMPRODI

Quality of service refers to the process of using information systems by users. The indicator is a combination of hardware and software (tangible), the information system is very dependent on its users (reliability), the information system is a service response to its users (responsiveness), information systems require workers who have assurance and information systems that have caring users (empathy).) (Jiang et al. (2002).

Intensities the Use of SIMPRODI Information Systems
The intensity of the use of information refers to how often users use the information systems. In relation to this matter, it is important to distinguish whether its use is a necessity that cannot be avoided or voluntary. This variable is measured by the indicators McGill et al. (2003) which only consists of one item, namely frequency of use. Respondents' perception of the indicator was measured by a 1-5 Likert scale.

SIMPRODI Information System User Satisfaction
System User Satisfaction (User satisfaction) is the response and feedback that the user raises after using the information system. The attitude of users towards information systems is a subjective criterion of how users like the system used.

This variable is measured by the indicators McGill et al. (2003) which consists of 3 items, namely efficiency (efficiency) an effectiveness (effectiveness), and satisfaction (satisfaction), coupled with other indicators, namely pride in using the system (proudness). Respondents' perception of the indicator was measured by a 1-5 Likert scale.

RESEARCH RESULT

Validity and Reliability Test
Validity and reliability tests are needed before testing the research hypothesis. As previously explained, the value of alpha and cronbcah is used as a reference to determine the validity and reliability of the research instrument. The results of validity and reliability tests can be seen in table 1.

Table 1.

Validity and Reliability Test

Item	Loading Factor	AVE	Cronbach alpha
ease of use	0.681	0.684	0.877
system flexibility	0.895		
response time	0.798		
reliability	0.859		
accuracy	0.882	0.782	0.904
timeliness	0.883		
completeness	0.858		
format	0.892		
tangible	0.904		
reliability	0.868		

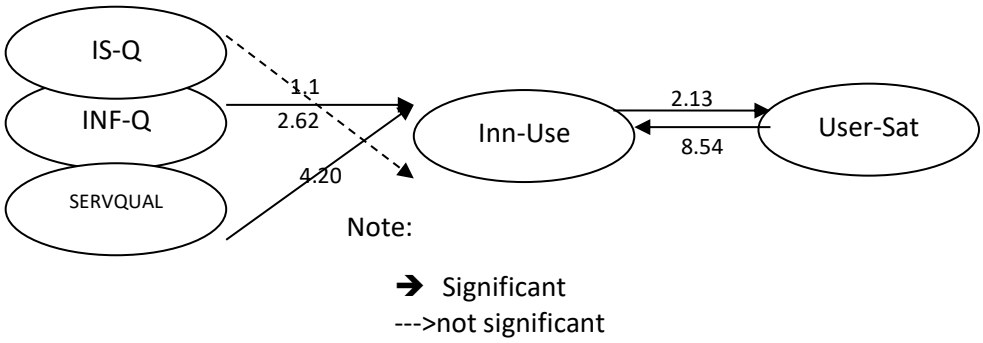
responsiveness	0.930	0.688	0.833
assurance	0.724		
empathy	0.728		
frequency of use	0.771	0.771	0.911
efficiency	0.853	0.629	0.844
effectiveness	0.701		
satisfaction	0.834		
proudness	0.799		

From table 1 above, it can be concluded that all statement items from all variables studied have a factor loading value greater than 0.5. Hair et al. (2010) explained that the factor loading value that can be considered good is the factor loading value ≥ 0.5. In other words, all statement items have good values and none of them must be dropped. Then from table 1 it can also be confirmed that the variables studied have good convergent validity values. Convergent validity can then be seen from the AVE value above 0.5. Hair et al. (2010) states that a good AVE value is ≥ 0.5. In other words, if it refers to the Factor loading and AVE values, all research variables can be considered valid.

In addition, Hair et al. (2010) also explained that reliability testing is part of the convergent validity test. The usual value used as a reference is the cronbach alpha (α) value greater than 0.6 is a good value and 0.7 is the ideal number (Nunally, 1976; Hair et al. 2010). Table 1 states that all the research variables of the cronbach alpha (α) value are in the ideal reliability value which is above 0.70.

Hypothesis testing

After testing validity and reliability and the results are declared valid, the next step is to test the hypothesis. The results of hypothesis testing can be seen in the picture model 1 below:



DISCUSSION AND CONCLUSION

Based on the results of the analysis of research, it can be elaborated on the effect of system quality, information quality, service quality, intensity of use, and user satisfaction on the SIMPRODI information system. In model 2 shows that there is an effect of the system quality variable on intention to use of CR 1.19 lower than the reference value of 1960 in a positive direction, in other words hypothesis 1 is not accepted.

This shows that there is no significant influence between the quality of the system with the intention to use SIMPRODI. These results explain that UNG students perceive the quality of the SIMPRODI system as being considered good, but it seems that students do not care about the quality of the system whether it is well or not, the students are concerned about the process of submitting files for online examinations that are well uploaded. In other words, making students more often access SIMPRODI is not the quality of the system, but rather the quality of information and quality of service.

In figure 2 above shows that the quality of information has a significant effect on the intensity of SIMPRODI use. This is indicated by the value of CR 2.62 which is higher than 1960. In other words, hypothesis 2 is accepted. These results indicate that after students upload a file for the submission of a proposal or thesis, students will access SIMPRODI more to find out further information regarding the approval or validation of their submission, information on examining lecturers and the schedule of examinations. This makes sense because the information issued by SIMPRODI is valid information from trusted sources, because in addition to obtaining information on submission of test files but through the SIMPRODI application students can access decision letters as a source of legitimacy for students.

In the picture of model 3 above, hypothesis 3 is also accepted, because service quality has a significant effect on the intention to use SIMPRODY with a value of CR 4.20 higher than 1960. These results provide a strong belief that the better the quality of SIMPRODI services, the higher the intensity of SIMPRODI use. The quality of SIMPRODI services is indicated by menus or features that are useful for students. In addition to submitting a one-door online service file to SIMPRODI's proud quality, it is possible for students to focus on learning to prepare for the exam. This is because the service that makes it easy for students from the process of submitting exam files to invitations to examiners can be done by SIMPRODI. Students only need to record the test schedule data, who is the examining lecturer and the location of the exam and of course learning.

The results of this study also support Livari (2005) who empirically tested the DeLone and McLean Models used in this research, the results of which prove that the success of information systems is influenced by the quality of information systems, information quality and service quality generated from the system in question.

Then for hypothesis 4 shows a significant value of CR 2.13 which is higher than 1960 which means that the higher the intensity of the use of SIMPRODI, the higher the satisfaction of SIMPRODI users. This result can be interpreted that SIMPRODY is accessed a lot, it seems that users are very satisfied with the services provided by SIMPRODI. The logic is that continuous access from SIMPRODI shows users really like the quality of SIMPRODI itself. According to Stanton (1994), the level of customer satisfaction is determined by comparing the expected results of a product or service with results based on experience by consuming the product or service. The same result is satisfaction from consumers, but if the results obtained are very few of the expected, it is a form of consumer dissatisfaction.

Hypothesis 5 results in the value of CR 8.54 which means that there is a strong influence if the user is satisfied with SIMPRODI, the user becomes more often accessing SIMPRODI. This result means that users who are satisfied with the information system, so that the user will access an application from the information system so the choice is an information system that makes users get more results than their expectations (Kotler, 2000). In other words, students who are satisfied with SIMPRODI will continue to access SIMPRODI without much complaint especially if students are facilitated with SIMPRODI. This would certainly be different if SIMPRODI was disappointing, so students would protest a lot and demand that the use of the SIMPRODI application to be removed. In fact, for more than 3 years of SIMPRODI used, there is almost 0% complaints from students, complaints that exist is only when the internet network is being interrupted or there is a hardware damage that cannot be avoided. Complain because of the accessibility is not user-friendly or the application is almost non-existent.

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