



The Influence of System Quality and Perception of Ease of Use on The Success of Using E-Procurement Systems in the Open University

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Abstract: Purpose – The purpose of this study was to determine the effect of system quality and perceived ease of use on the successful use of the e-procurement system at the Open University. **Design/methodology/approach** - The population in this study were 357 internal users of the e-procurement system at the Open University, a sample of 107 people was determined proportionally to the conditions of the population strata. The analytical method used in this study is descriptive statistics and multiple linear regression analysis with SPSS 22 software. **Findings** – The results showed that system quality had a positive and significant effect on the successful use of the e-procurement system and perceived ease of use had a positive and significant effect on the successful use of the e-procurement system. While the results of simultaneous measurements, system quality and perceived ease of use also have a positive and significant effect on the successful use of the e-procurement system at the Open University.

Keywords: System Quality, Information Quality, and Successful Use of e-Procurement Systems

INTRODUCTION

The Open University is a government higher education institution whose mission is to equalize education for all Indonesian citizens wherever they are, fully committed to carrying out this mandate. Inaugurated in 1984 through Presidential Decree No. 41 of 1984, UT is designed to facilitate those who do not have the opportunity to complete their studies at tertiary institutions due to various obstacles including economic, geographical and demographic factors. Therefore, UT is here to reach the unreached.

The major innovation made by the Open University in the transformation process in facing the current digital era is by implementing an e-procurement system to improve operational performance in order to support university operational activities. The innovation in the process of procuring goods and services in the e-procurement system is in line with the transformation of the Open University (UT), which has the status of a State University with a Public Service Agency (PTN-BLU) to a State University with a Legal Entity (PTN-BH).

E-procurement is a technology designed to simplify the procurement of goods and services through electronic networks or Electronic Data Interchange (EDI). In the Presidential Regulation of the Republic of Indonesia Number 54 of 2010, it is stated that e-procurement or electronic procurement is the procurement of goods and services carried out using information and communication technology and electronic transactions according to law. E-procurement integrates communication and information systems (web-based) that are used in the procurement process, including sourcing, negotiation, ordering, and purchasing (Masudin et al., 2021). Meanwhile, according to Masudin et al., (2021), electronic procurement (e-procurement) is the process of purchasing goods and services which is considered the most critical element.

Several studies related to e-procurement, including those conducted by Wanniarachchige (2014) found that the quality of the system influences the success of e-procurement implementation in the Sri Lankan public sector. Research by Sari and Arifin (2016) found that system quality has a significant positive effect on the success of e-procurement implementation. Meanwhile, Prasetyo's research (2019) found that the success of e-procurement implementation was influenced by top management, system quality, system security, and HR capabilities. Furthermore, Ramadhani et al. (2021) found system quality has an effect on the success of e-procurement implementation. Wahyudi et al. (2017) found system quality had no effect on the success of e-procurement implementation. Harjito's research (2016) also found that system quality did not affect the success of e-procurement implementation.

With a number of different research results still being found, the authors are interested in conducting research by taking the title the effect of system quality and perceived ease of use on the successful use of the e-procurement system at the Open University.

LITERATURE REVIEW

Procurement

Procurement Management is the coordination of all activities related to purchasing products and service requirements to complete the mission of an organization. In this procurement management, the personal sales department will spend a lot of time and effort in procurement activities. Procurement is the purchase of goods and services by companies (Turban et al., 2018). A number of activities included are the selection of quality suppliers, price negotiations, building strategic relationships with suppliers, supplier evaluation and certificates.

Weele (2010), procurement is the acquisition of goods or services. It is favorable that the goods or services are appropriate and that they are procured at the best possible cost to meet the needs of the purchaser in terms of quality and quantity, time, and location. Meanwhile, according to Budiharjo Hardjowijono and Hayie Muhammad (2008) the procurement of goods and services must be carried out based on internationally practiced procurement principles of efficiency, effectiveness, fair competition, openness, transparency, non-discrimination and accountability.

E-Procurement

E-procurement is a technology designed to simplify the procurement of goods and services through electronic networks or Electronic Data Interchange (EDI). In the Presidential Regulation of the Republic of Indonesia Number 54 of 2010, it is stated that e-procurement or electronic procurement is the procurement of goods and services carried out using information and communication technology and electronic transactions according to law. E-procurement integrates communication and information systems (web-based) that are used in the procurement process, including sourcing, negotiation, ordering, and purchasing

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System Quality

System quality is the quality of the combination of hardware and software in an information system. The focus is on the performance of the system, which refers to how well the capabilities of the hardware, software, policies, procedures of the information system can provide the information the user needs (Harjito et al., 2015).

Layong et al. (2022) the quality of information systems focuses on the performance of information system components, namely how well the capabilities of hardware, software, people, procedures, databases, communication networks, data, activities, networks and technology of information systems in producing information for users. Meanwhile, according to Atmaja and Sfenrianto (2021) system quality is used to measure system quality and performance as measured by how well the capabilities of software, hardware and information system procedures provide information about user needs.

Perceived Ease of Use

Davis (1989) defines ease of use as: "Refers to the degree to which a person believes that using a particular system would be free of effort". This can be interpreted as a level where a person believes that using a particular system can reduce one's effort in doing something. The intensity of use and interaction between the user and the system can also show ease of use. The system that is used more often shows that the system is better known, easier to operate and easier to use by the user.

Perceived ease of use is the degree to which a person believes that using a particular system will be free of physical and mental effort. That is, perceived ease is the degree to which a person will believe that using the system can reduce one's efforts to do something. Ease of meaning without difficulty or no need to work hard. This perceived ease of use refers to the user's belief that the technology system used does not require much effort when used (Haryati et al, 2019).

Framework

Based on the description of the theoretical study on the previous page, the research examines 2 independent variables and one dependent variable. The independent variables include system quality, (X1) and perceived ease of use (X2). While the dependent variable is the successful use of the e-procurement system (Y).

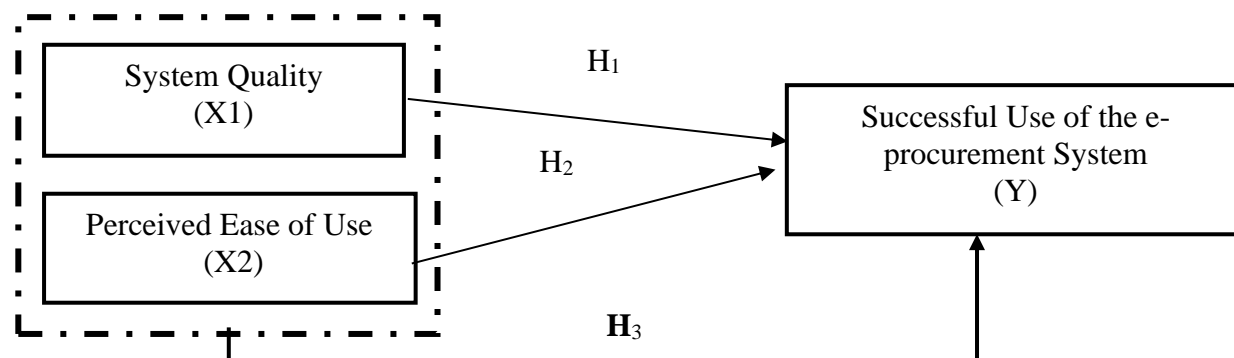


Figure 1. Thinking Framework

Hypothesis

Based on the study of theory and framework, the hypothesis can be formulated as follows:

- H1 : The quality of the system influences the successful use of the e-procurement system at the Open University
- H2 : Perceived ease of use influences the successful use of the e-procurement system at the Open University
- H3 : System quality and perceived ease of use influence the successful use of the e-procurement system at the Open University

METHODS

This study uses a quantitative approach with a causal influence approach and the type of research used is explanatory research, namely explaining the relationship between variables through hypothesis testing, which aims to analyze the effect of independent variables (system quality, information quality, management support, perceived benefits, and perceived ease) of the dependent variable (success of implementing the e-procurement system). The object of this research is the e-procurement system at the Open University.

The population in the study were 357 people who served in the Selection Working Group (POKJA), Commitment Making Officers (PPK), Procurement Officers (PP), and Quality Controllers. The sample specified in this study amounted to 107 respondents, carried out through balanced calculations with the following calculations:

Table 1. Population Sample

No	Strata/Group	Population Members	Samples number	percentage %
1	Election Working Group	9	$(9:357) \times 107 = 3$	3
2	Commitment officer	64	$(64:357) \times 108 = 19$	18
3	Procurement officer	64	$(64:357) \times 109 = 19$	18
4	Quality Controller	220	$(220:357) \times 110 = 64$	62
Total		357	107	100

Source: Study results (2022)

RESULTS AND DISCUSSION

Validity Test

The results of the analysis show that all questionnaire statements from the independent and dependent variables are declared valid because they have a calculated r value (Corrected Item Total Correlation) greater than the r table value (0.1599) which is obtained from looking at the r-table using the value $df = N - 2$ and the significance level used. It can be concluded that the questionnaire indicators in this study can be declared valid and used as a variable measuring tool.

Reliability Test

Reliability Test is a tool for measuring questionnaires which are indicators of variables or constructs. A questionnaire is said to be reliable or reliable if one's answers to statements are consistent or stable from time to time. The technique used to measure the reliability of observations is Cronbach Alpha by comparing the alpha value with the standard (Ghozali, 2011), with the provisions: if the Alpha coefficient results are greater than the 70% or 0.7 significance level then the questionnaire is reliable and if the Alpha coefficient results smaller than the significance level of 70% or 0.7, then the questionnaire is not reliable. The results of the reliability test are shown in the following table:

Table 2. Reability Test

Variabel	Cronbach's Alpha	Status
System Quality (X ₁)	0,901	Reliabel
Perceived Ease of Use (X ₂)	0,945	Reliabel
Successful Use of the e-procurement System (Y)	0,933	Reliabel

Source: SPSS version 22 output data (2023)

Table 2 shows that the Cronbach's alpha value for the system quality variable is 0.901, the perceived ease of use is 0.945, and the successful use of the e-procurement system is 0.933. Thus, it can be concluded that the statements in this questionnaire are reliable because they have a Cronbach's alpha value greater than or equal to 0.7.

Multiple Linear Regression Analysis

Multiple linear regression analysis is used to predict how the condition (rise and fall) of the dependent variable, if two or more independent variables as predictive factors are manipulated (the value is increased or decreased) (Sugiyono, 2010).

Table 3. Results of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-9,327	2,782		-3,352	,001
1 System Quality	,798	,109	,495	7,348	,000
Perceived Ease of Use	,575	,089	,433	6,428	,000

a. Dependent Variable: The success of the e-procurement system

$$Y = -9,327 + 0,798 * X_1 + 0,575 * X_2$$

Where:

- Y = Successful Use of the e-procurement System
- Constant = -9,327
- Regression coefficient = 0,798; 0,575
- X₁ = System Quality
- X₂ = Perceived Ease of Use

From these results it can be explained that:

1. The constant has a negative value of -9.327, which means that if the System Quality, Perceived and Ease of Use variables are zero, the employee performance will be negative.
2. The regression coefficient of the system quality variable gives a value of 0.798 which means that if the quality of the system is getting better assuming other variables are constant, then the success of using the e-procurement system will increase or vice versa.
3. The regression coefficient of the perceived ease of use variable gives a value of 0.575 meaning that if the perceived ease of use gets better assuming other variables are constant, then the success of using the e-procurement system will increase or vice versa

Simultaneous F-Test

Simultaneous hypothesis testing was carried out to show whether all the independent variables (system quality and perceived ease of use) included in the regression model had a joint effect on the dependent variable (Successful Use of the e-procurement System).

(Ghozali, 2013). The F test is carried out by comparing the F-count with the F-table. In this study, the results of the ANOVA test (F test) were obtained as follows:

Table 4. Simultaneous F-Test Results
ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	4192,170	2	2096,085	103,095	.000 ^b
Residual	2114,484	104	20,332		
Total	6306,654	106			

a. Dependent Variable: The success of the e-procurement system

b. Predictors: (Constant), The success of the e-procurement system

The F-table values obtained from the calculations $df_1=3-1=2$ and $df_2=107-2=105$, with a significance level of 0.1, the F-table = 3.08. From table 5.10 the anova test obtained F-count = 103.95 so that F-table < F-count (3.08 < 103.95) which also means that Ho is rejected and Ha is accepted so that it can be said that there is a significant effect simultaneously (simultaneous) between the system quality variable (X1) and perceived ease of use (X2) to the success variable of the e-procurement system (Y).

Discussion

Effect of System Quality on the Successful Use of E-Procurement Systems

The test results use multiple linear regression analysis, the system quality variable has a positive and significant effect on the successful use of the e-procurement system. The research results are in accordance with previous research conducted by Layongan et al. (2022) which states that the quality of information systems has an influence on user satisfaction. Information system users believe that with a quality system that is used and implemented properly, users will feel satisfied and benefit from the system. The research results are also in line with research conducted by Sari and Arifin (2016), Khairunnisa and Yunanto (2017); Purwanto and Pawirosumarto (2017), and Krisdiantoro et al. (2019) stated that the quality of the information system has a positive effect on user satisfaction. However, in contrast to the results of a study conducted by Ramadhani et al. (2021) and (Wahyudi et al., 2017) which state that system quality has no effect on the success of e-procurement.

The Effect of Perceived Ease of Use on the Successful Use of the E-Procurement System

The results of the study refer to multiple linear regression analysis, the perceived ease of use variable has a positive and significant effect on the successful use of the e-procurement system. The results of this study are in accordance with the theory put forward by Davis, 1989 that the perception of ease of use is the ease of a level where a person believes computers are easy to understand. Ease in e-procurement is the ease of auctioning goods and services online and using the e-procurement system, meaning that the services provided by managers are easier to understand than using a manual system.

The results of this research reinforce previous research conducted by Kademaunga and Phiri (2019) showing that perceived usefulness has a significant influence on e-procurement implementation. Research also supports the results of research conducted by Karim and Lasena (2017) which states that ease has a positive effect on e-procurement user satisfaction.

Effect of System Quality and Perceived Ease of Use on the Successful Use of E-Procurement Systems

The results of the study through the Simultaneous F test show that the quality of the system and perceived ease of use affect the successful use of the e-procurement system. These results are shown by measuring the F-Count which is greater than the F-Table.

The intensity of use and interaction between the user and the system can also show ease of use. A system that is frequently used shows that the system is better known, easier to operate and easier to use by its users. Ease of use will reduce the effort (time, effort, cost) to learn the e-procurement system. Ease of use also indicates that users of information systems (e-procurement suppliers) work more easily than those who work without using information systems.

Ease of use gives an indication that a system will make it easier for users to operate and complete their work and the system is not designed to make it difficult for users. The perceived ease of use in using e-procurement indicates that the system is easy to understand and operate. As a result, users will have an intention to use the system regularly (Daud et al., 2018).

CONCLUSION AND SUGGESTIONS

The conclusions from the results of the research that has been done are:

1. The quality of the system has a positive and significant effect on the successful use of the e-procurement system at the Open University. The better the quality of the system provided by the Open University according to the quality characteristics desired by the user, the more successful the use of the e-procurement system will be. These characteristics include: ease of access, accuracy and reliability.
2. Perceived ease of use has a positive and significant effect on the successful use of the e-procurement system at the Open University. Ease of e-procurement is the ease of auctioning goods and services online and using the e-procurement system. The better the Open University provides services and is easy to understand, the more successful the use of the e-procurement system will be. The characteristics of ease of use include: the system is very easy to learn, the system can work easily, and the system is very easy to operate.
3. System quality and perceived ease of use have a positive and significant effect on the successful use of the e-procurement system at the Open University. The better the quality of the system and the ease of use, the more successful the use of the e-procurement system will be.

Suggestions

The suggestions given from the results of the research that has been done are:

1. Suggestions for the Open University, including similar institutions, in increasing the success of using e-procurement through information system variables are: an easily accessible system that saves time and effort, a good internet connection to run the system, and the provision of accurate data in the procurement process. Suggestions through the ease of use variable are: The Open University provides a system that is easy to understand, easy to learn, flexible, makes work easier, increases skills, and doesn't require much effort.
2. Subsequent research can develop research by adding other factors that can influence the successful use of the system, including: technological sophistication and technical capabilities of information system users.

REFERENCES

- Atmaja, R. A., & Sfenrianto. (2021). An Evaluation The Implementation of E- Procurement Application At Contractor Company. *Journal of Theoretical and Applied Information Technology*, 99(8), 1902–1914.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(5), 319–339.
- Daud, N. M., Thurasamy, R., Isaac, O., & Abdulsalam. (2018). The mediating of perceived usefulness and perceived ease of use: the case of mobile banking in Yemen. *International Journal of Technology Diffusion*, 9(2), 21–40.
- Ghozali, Imam. 2011. “Aplikasi Analisis Multivariate Dengan Program SPSS”. Semarang: Badan Penerbit Universitas Diponegoro.
- Harjito, Y., Achyani, F., & Payamta, P. (2015). Implementasi E-Procurement Ditinjau Dari Kesuksesan Sistem Teknologi Informasi Dengan Menggunakan Model Delone dan Mclean. *Jurnal Ekonomi Dan Bisnis*, 18(1), 61–82.
- Hardjowijono Budiharjo dan Hayie Muhammad. (2008). Daftar Simak Monitoring Proses Pengadaan Barang dan Jasa Pemerintah. Indonesia Procurement Watch Jakarta.
- Harjito, Y. (2016). E-procurement: Peluang Dan Tantangan Bagi Pemerintah Daerah. *Iqtishadia*, 8(1), 73–92.
- Haryati, N., Burhany, D. I., & Suhartanto, D. (2019). Assessing the profitability of Islamic banks: The role of bank age and bank performance. In *IOP Conference Series: Materials Science and Engineering*, 662(6), 1–6.
- Khairunnisa, U., & Yunanto, M. (2017). Pengaruh kualitas sistem terhadap kepuasan pengguna dan manfaat bersih pada implementasi e-faktur: Validasi model kesuksesan sistem informasi Delone Dan Mclean. *Jurnal Ilmiah Ekonomi Bisnis*, 22(3).
- Krisdiantoro, Y., Subekti, I., & Prihatiningtias, Y. W. (2019). Pengaruh Kualitas Sistem dan Kualitas Informasi terhadap Manfaat Bersih dengan Intensitas Penggunaan sebagai Variabel Mediasi. *Jurnal Akuntansi Aktual*, 5(3), 261–279.
- Kademaunga, C. K., & Phiri, J. (2019). Factors affecting successful implementation of electronic procurement in government institutions based on the technology acceptance model. *Open Journal of Business and Management*, 7(4), 1705–1714.
- Karim, J., & Lasena, M. (2017). Analisis Kebijakan E-procurement Di Pemerintah Provinsi Gorontalo Menggunakan Metode Technology Acceptance Model Dan End User Computing Satisfaction. *ILKOM Jurnal Ilmiah*, 9(3), 338–347.
- Layongan, C., Nangoi, G. N., & Kalalo, M. K. (2022). Pengaruh Kualitas Sistem dan Kualitas Informasi Software SAP terhadap Kepuasan Pengguna pada PT PLN (Persero) Unit Pelaksana Pelayanan Pelanggan (UP3) Kotamobagu. *Jurnal LPPM Bidang EkoSosBudKum*, 5(2), 309–322.
- Masudin, I., Aprilia, G. D., Nugraha, A., & Restuputri, D. P. (2021). Impact of E - procurement adoption on company performance: Evidence from Indonesian manufacturing industry. *Logistics*, 5(1), 1–16.
- Purwanto, S. K., & Pawirosumarto, S. (2017). Pengaruh Kualitas Sistem, Kualitas Informasi, Dan Kualitas Layanan Terhadap Penggunaan sisteme-Learning Di Program Pascasarjana Universitas Mercu Buana. *Jurnal Manajemen*, 21(2), 282–305.
- Prasetyo, M. A. (2019). Pengaruh E-Procurement, Kualitas Produk Terhadap Keputusan Pembelian Dimoderasi Oleh Pelayanan Purna Jual Studi Pada Produk Smartkey & Smartlock Di Pt Netwawe Maju Abadi. *Journal For Business And Entrepreneurship*, 3(2), 1–15.
- Ramadhani, K. Y., Adawiyah, W. R., & Novandari, W. (2021). Successful E- Procurement Implementation: A Case Study in a Construction Industry Company. *Sustainable Competitive Advantage*, 11(1), 938–946.

- Sari, I. P., & Arifin, J. (2016). Analysis of Factors Influencing the Successful E- Procurement Implementation. *Analysis of Factors Influencing the Successful E-Procurement Implementation*, 1–30.
- Sugiyono. 2010. *Metode Penelitian Pendidikan Pendekatan Kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta
- Turban, E., King, D., Lee, J., Liang, T., & Turban, D. (2018). *Electronic Commerce: A Managerial Perspective*. New Jersey: Pearson prentice Hall, Inc.
- Wahyudi, R., Astuti, E. S., & Riyadi. (2017). Pengaruh Kualitas S istem, Informasi dan Pelayanan SIAKAD Terhadap Kepuasan Mahasiswa. *Jurnal Administrasi Bisnis*, 23(2), 28–39.
- Wanniarachchige, M. K. (2014). Determinants of Information System Success in Public Sector Organizations : With Special Reference to Organizations Located in the Matara District of Sri Lanka. *International Conference on Management and Economics*, 3(5), 143–150
- Weele, A. V. (2010). *Purchasing and Supply Chain Management*. London: Cengage Learning EMEA.