

Measurement Model of Accounting Information System Design

ASYARI¹, MARIA SURYANINGSIH²

^{1,2} National University of Jakarta, STIE Muhammadiyah Jakarta

Abstract- *Rapid progress has occurred in the development of information technology that leads people to a new life in the digital era with the potential for widespread use. Access to information is a measure of the success of information systems, convenience and benefits for users are the achievements of information systems quickly and accurately. The purpose of the study was to examine the effect of the implementation of information technology and user competence on the design of accounting information systems. The survey was conducted at SMAN in East Jakarta. The research sample is 3 high schools in East Jakarta. The analytical method used is multiple linear regression and hypothesis testing. The results showed that the implementation of information technology had a significant positive effect on the design of information systems and user competence had an insignificant positive effect on the design of information systems. Simultaneously, the variables of information technology and user competence can contribute to the design of accounting information systems.*

Indexed Terms- *information technology, user competence, accounting information system design*

I. INTRODUCTION

Watts and Zimmerman in Scott (2015: 284) suggest that positive accounting theory (PAT) contributes to the prediction of actions taken related to the choice of accounting policies by management and how accountants respond to the needs of the new developing business environment. This theory emerged as a result of changes in the capital market environment which questioned the normative approach to accounting theory used in positive accounting theory research by Watts and Zimmerman in Deegan (2014: 206).

The use of information technology in the company's operational activities is a major need. The function of ICT is to encourage a new era of human civilization towards the information age (digitalization). Surjono and Ghofur, (2010) concluded in their research, The potential of human resources in the ICT field affects the potential of educational institutions in designing, operating, developing, utilizing, and evaluating information output. Skills in information technology are an individual's ability to use ICT appropriately to access, manage and evaluate information, develop new understandings, and communicate with others to participate effectively in society. (Fauziah, 2010).

Various models for assessing the use of information technology include the Technology Acceptance Model (TAM) introduced by Davis et al. (1989), the End User Computing Satisfaction (EUCS) model popularized by Doll and Torkzadeh (1988), the Unified Theory of Acceptance and Use of Technology (UTAUT) model developed by Venkatesh et al. (2003). The three models describe a change in information technology based on dynamic market demand in business based on the benefits of system users.

Problems in primary and secondary education It is said in the curriculum 2013 models learning principles that the use of ICT aims to increase the effectiveness and efficiency of learning (Abidin Yunus, 2016). ICT as a driving factor in making high-quality education. ICTs can improve the quality of teaching, learning and management in schools and thus help raise standards (Livingstone, 2012). Many teachers are afraid to use ICT in their teaching and become anxious when it comes to using their ICT knowledge. In addition, many teachers also lack knowledge about the benefits of ICT in education (Mirzajani et al., 2016).

- Research problem formulation
- Problems that occur in the digital era are very complex, limited human resources with competencies

that do not meet the needs, the speed of change in information technology that is developing in the global business environment and dynamic market demand based on international competency standards or known as ISO. Based on these thoughts, the problems are formulated, namely (a), how is the influence of information technology on the design of accounting information systems, (b), how is the influence of user competence on the design of accounting information systems (c), how information technology and user competence contribute to the design of accounting information systems.

- Research purposes

Based on the problems that have been formulated, the research objectives consist of:

- 1) To test the hypothesis of the influence of information technology on the design of accounting information systems.
- 2) To test the hypothesis of the effect of user competence on the design of accounting information systems.
- 3) To test the significance of information technology variables and user competence on the design of accounting information systems.

- Gap Research

Munir (2009) found that on the research results: Teacher Information and Communication Technology Skills have a positive effect on School Productivity in the Era of Education Globalization. In the successful application of accounting information systems refer to Straub, et.al. (1995) and Gelderman (1998), where the successful application of the system is the intensity of the use (intended use) of the system in various managerial tasks and user satisfaction (user satisfaction) on the information generated by the accounting information system.

Sounders and Jones (1992), say that staff competence has a significant influence on the successful implementation of accounting information systems, as well as other factors such as: integration of AIS with corporate planning, AIS output quality, AIS operating efficiency. Shaberwal et al. (2006), explaining the complexity of the accounting information system process requires the experience of a financial manager in SIA (experience with AIS) and SIA training (training in AIS), both of which are constructs (user

related constructs) that contribute significantly to the successful implementation of accounting information systems.

Elly Halimatusadiah et al., (2017) which proves that the quality of accounting information systems will increase if the users are competent. Meanwhile, the results of Monika Turnip's (2015) research show that the lack of knowledge and skills possessed by users when implementing accounting information systems will have a negative impact on the quality of accounting information systems. Furthermore, Duggan & Reichgelt (2006:11) explain that there are information systems specialists who have the competence, skills and experience to managing the technical and behavioral aspects of information systems is a control for the success of high-quality information systems. For high school education institutions, Information Technology has become a necessity to support the teaching and learning process as well as for student data collection (Agustiani 2010).

II. LITERATURE REVIEW

A. Accounting Information Systems.

Information systems have a strategic role in decision making in institutions and companies, namely accelerating administrative services, communication facilities and the use of information technology to assist decision making. (Susanto, 2013). Accounting, as a financial recording system (which is a collection of procedures, methods, techniques, legal regulations, rules and expertise), includes identifying, tracking, measuring, recording, processing, storing, systemizing, appraising, controlling and publishing phenomena that affect property, the financial status and profits of the company, ensure the condition of continuous, uninterrupted activities.

The purpose of an accounting information system is to record economic events that affect the company, and process data in accordance with accounting demands and submit reports to people or units responsible for decision making. (Susanto, 2013) The theory of budget transparency states that transparency is a very important tool to bridge the public's need for public curiosity about the running of government in their own area. The principle of transparency creates mutual

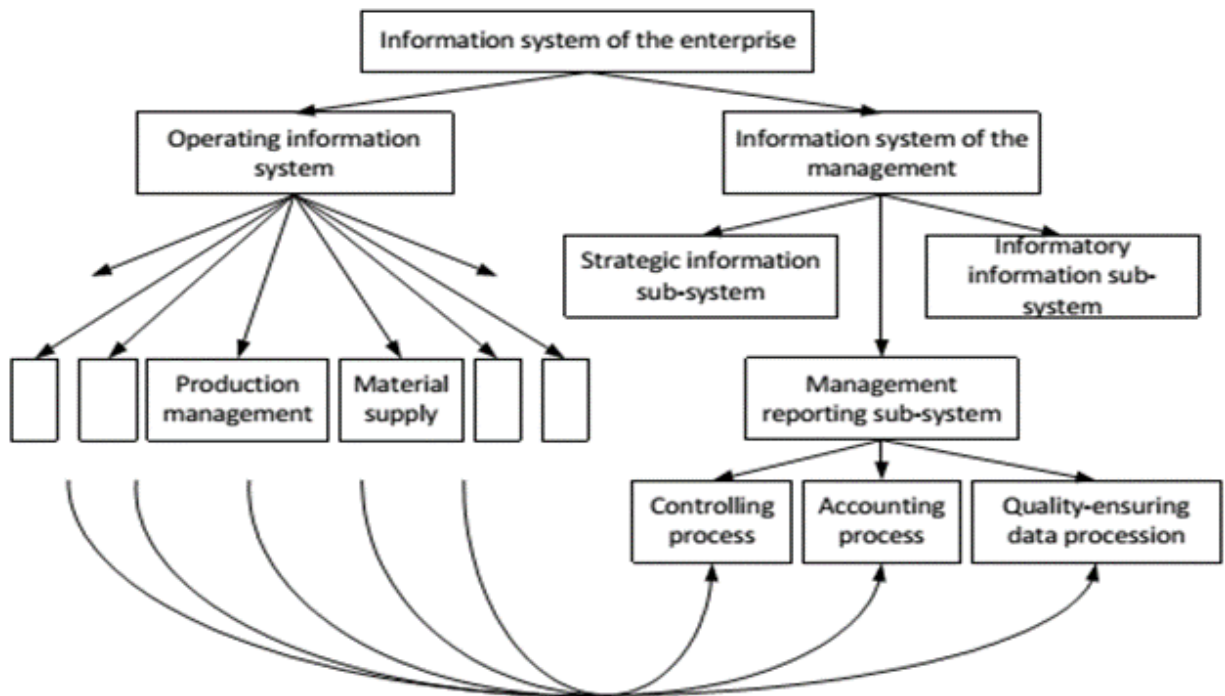
trust between the public and the government through the provision of accurate and adequate information.

Transparency will reduce the level of uncertainty in the decision-making process regarding the management of the education budget, because the dissemination of various information that so far has only been accessed by the government can provide opportunities for the public to participate in making decisions.

B. Information Technology

Activities in institutions and offices are activities of recording everything or activities that occur in

educational institutions and offices, especially in high school environments. Utilization of ICT in general is to manage incoming and outgoing letters, inventory procurement of school assets using special application software from the government to process asset inventory data. The use of ICT is intended to improve activities in providing quality education and professional human resources. Information and Communication Technology is a supporting tool to assist employees in completing routine work and school operations.



Source: Pál 2006

Figure 1: Management information system.

Theoretically, the implementation of accounting information systems is influenced by individual and system factors (hardware, software, networks, procedures, tasks, and others). Individual factors are related to humans who use accounting information systems which in themselves contain aspects of humanity that have the desire, willingness, motivation, likes and dislikes, satisfied and dissatisfied, which in

practice affects behavior in the use of accounting information systems.

According to Thompson et.al. (1990), that the problems that arise in the use of computer-based accounting information systems are related to economic problems, technology, system concepts, and aspects of individual behavior. Of these factors, problems related to aspects of individual behavior using accounting information systems are the

dominant problems that occur, this is because accounting information systems in practice require accuracy, perseverance, and even patience in carrying out the clerical process starting from the beginning of the transaction until generated of financial report.

According to Choe (1996), training and education development, users of accounting information systems (training and education developers, owners and users) are critical factors in the success of implementing accounting information systems in companies, because of the complexity of AIS and the variety of financial transactions that occur in all parts of the company. requires careful and continuous management, in order to produce valid financial reports.

DeLone and McLean are well-known figures among researchers in the field of information systems. The model has been widely used as a theoretical reference in many countries. However, the DeLone and McLean model is not the only model that can be used as a theoretical reference in conducting research in the field of information systems.

C. Users Competence

According to Mondy (2016:122) competence can be defined as an individual's ability to compose and apply a combination of knowledge, skills and abilities consistently over time to carry out work successfully according to the needs of the work situation. Competencies are skills, knowledge, manners and other personal characteristics that can result in superior performance (McShane & Glinow, 2010:36). Another opinion according to Stewart & Brown (2011:22), competence is a representation of the knowledge, skills and abilities needed to achieve the desired performance. According to Shaun Tyson (2006:136) competence can be measured from knowledge (knowledge) and skills (skills).

According to Weygandt et al., (2011:102) an accounting information system is a system which collects and processes transaction data and communicates financial information to decision makers. Meanwhile, according to Azhar Susanto (2013: 72) Accounting information system can be defined as a collection of integration of sub-systems/components both physical and non-physical

that are interconnected and work together in harmony with each other to process transaction data related to financial problems into financial information. According to Heidmann (2008:86-90) the characteristics of a quality accounting information system can be seen from the integration, flexibility, accessibility, formalization and media richness.

III. RESEARCH HYPOTHESIS

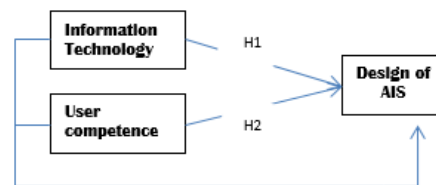
1. H1 The information technology have a positive effect on the design of information systems.

According to Munir (2009) Information and Communication Technology have a positive effect on the successful application of accounting information systems. Straub, et.al. (1995) and Gelderman (1998), where the successful application of the system is the intensity of the use (intended use) of the system in various managerial tasks and user satisfaction (user satisfaction) on the information generated by the accounting information system. According to Elly Halimatusadiah et al., (2017) that the quality of accounting information systems will increase if the users are competent. Duggan & Reichgelt (2006:11) that there are information systems specialists who have the competence, skills and experience to managing the technical and behavioral aspects of information systems is a control for the success of high-quality information systems.

2. H2 user competence have a positive effect on the design of information systems.

According to Mondy (2016:122) User's competence have a positive effect on accounting information systems. According to Stewart & Brown (2011:22), users' competence has a positive effect on accounting information systems. According to Shaun Tyson (2006:136) User's competence have a positive effect on implementation of accounting information systems.

The research model that will be built in this research is as follows:



IV. RESEARCH METHODE

This type of research is causality, the unit of analysis is the teachers and employees at high school organization. The population of this study the high school at the east Jakarta. The sampling method by purposive sampling so were selected school. After being selected, 3 schools were found to be the object of study.

V. RESULT

- Descriptive data of research results
Data on the number of high school teachers in East Jakarta for 3 schools.
The number of teachers and employees of 3 private schools in East Jakarta with the status of private employees is 36 people, namely 6 teachers and 6 employees respectively, so that the sample is 36. The sample is 36 respondents.

Normality test results and linear regression test.

One-Sample Kolmogorov-Smirnov Test

	Teknologi	Kompetens	perancangan
N	36	36	36
Normal Paramete# ^b			
Mean	4.2100	4.3056	4.7800
Std. Deviation	.75593	.70991	.75593
Most Extreme Differences			
Absolute	.202	.210	.202
Positive	.177	.162	.162
Negative	-.222	-.280	-.222
Kolmogorov-Smirnov Z	1.333	1.683	1.333
Asymp. Sig. (2-tailed)	.002	.001	.007

a. Test distribution is Normal.
b. Calculated from data.

Based on the results of research and data processing with SPSS 23, it shows that the data significance is <0.5, then the data is normally distributed. (see normality test table).

1. Simultaneous F Test.

Simultaneous F-test to determine the effect of independent variables on the dependent variable, namely information technology and user competence on the design of accounting information systems.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.495	2	5.747	15.219	.000 ^a
	Residual	8.505	33	.258		
	Total	20.000	35			

a. Predictors: (Constant), kompetensi, teknologi_informasi
b. Dependent Variable: perancangan_sistem

Based on the results of the research, the F test value is 15.219 > F table, which means that information technology and user competence simultaneously affect the design of accounting information systems.

- Hypothesis Test.

Partial test with t test.

The t-test was conducted to show how far the influence of one independent variable individually in explaining the variation of the dependent variable (Ghozali, 2012:85).

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.255	.531		2.364	.024
	teknologi	.612	.189	.617	3.621	.000
	kompetensi	.196	.201	.184	3.974	.001

a. Dependent Variable : perancangan_sistem

VI. DISCUSSION

The results of the tcount hypothesis test show 3,621 or > from t table 1,890, which means that information technology partially influences the design of accounting information systems. This means that if information technology is improved for the better, it will affect the usefulness of accounting information systems in the business environment of educational institutions. The results of the second hypothesis test show that user competence has an effect on the design of accounting information systems. This is evidenced by the results of hypothesis testing tcount shows 3.974 or > from t table 1.890 which means user competence has a significant effect on the design of accounting information systems. This shows that the accounting information system can be influenced by the size of the user's competence. The company's management emphasizes the responsibility for managing financial data from the finance department which has implications for the quality of accurate and reliable financial data.

• Coefficient of Determination Test (R2)

The coefficient of multiple determination (R Square or R2) is used to measure the contribution of the independent variables studied to the dependent variable. The magnitude of the coefficient of multiple determination (R2) is between 0 and 1 or $0 < R2 < 1$. The greater R2 from the calculation results (close to one), it can be said that the contribution of the independent variable to the dependent variable is getting bigger. Conversely, if R2 is getting smaller and closer to zero, it can be said that the contribution of the independent variable (to the dependent variable is getting smaller).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658 ^a	.532	.507	.21328

a. Predictors: (Constant), kompetensi, teknologi_informasi

b. Dependent Variable: perancangan_sistem

The results of the R2 determination test can be seen in the table above showing the Adjusted R2 value shown in the table above is 0.532, meaning that the design of accounting information systems is influenced by information technology variables and user competencies, able to explain 53.2% of the variations that exist in the accounting information system design variables, the remaining 46.8% are other variables that are not examined. It is possible that other variables are not examined.

Correlations

	perancangan	teknologi	kompetensi
Pearson Correlation			
perancanga	1.000	.750	.532
teknologi	.750	1.000	.799
kompetensi	.532	.799	1.000
Sig. (1-tailed)			
perancangan	.	.000	.000
teknologi	.000	.	.000
kompetensi	.000	.000	.
N			
perancangan	36	36	36
teknologi	36	36	36
kompetensi	36	36	36

CONCLUSION

Based on the results of the research above, it can be concluded as follows:

1. Based on research results Partially information technology have a positive affects the design of accounting information systems as well as user competence have a positive affects the design of accounting information systems.
2. Simultaneously with the F test shows that information technology and user competence affect the design of accounting information systems.
3. Based on the R square test, it shows that the two variables of information technology and user competence are jointly able to contribute to the design of accounting information systems.

REFERENCES

- [1] Azhar Susanto. 2013. Accounting Information Systems. Bandung: Linga Jaya. Committee Of Sponsoring Organizations of The Teadway Commission. 2013.
- [2] Brigham, Eugene F. & Houston, F. Joel. 2001. Financial Management. Book II. Eighth Edition. Jakarta: Erlangga.
- [3] Bodnar, H. George and William S. Hopwood, Accounting Information Systems, Book I, 6th Edition, Translators Amir Abadi Jusuf and Rudi M. Tambunan, Salemba Empat, Jakarta, 2000.
- [4] Duggan, Evan W dan Reichgelt, Han. (2006). Measuring Information System Delivery
- [5] Quality. Idea Group Publishing.
- [6] Halimatussadiyah, Elly., Astria, Isti., Nurhayati, Nunung. 2017. The Effect of User Competence and Peak Internal Control on the Quality of Accounting Information Systems: A Survey on Islamic Commercial Banks in Bandung City.
- [7] Heidmann, Marcus. 2008. Exploring the Role of Management Accounting Systems in Strategic Sensemaking. Elsevier.
- [8] Herlinda, Dilla. 2016. The Effect of Top Management Support and Organizational Structure on the Quality of Accounting Information Systems and Its Impact on the

- Quality of Accounting Information Systems. Survey at PT Pos Indonesia Bandung City.
- [9] Fauziah and Hedwig, R. (2010). Introduction to Information Technology. Bandung: Maura Indah.
- [10] Hasibuan, Malay S.P. 2005. Human Resources Management Revised Edition. Jakarta: Earth Literacy
- [11] Hansen, Don R., and Mowen, Maryanne M. (2006). Management Accounting; Management Accounting, book 1, seventh edition. Salemba Four.
- [12] Hongren, Charles T., Datar, Srikant M., and Foster, George. (2008). Cost accounting; Managerial Emphasis, vol. 1, eleventh ed. Index.
- [13] Kieso, D. E., Weygandt, J. J., dan Warfield, T. D. 2011. Intermediate Accounting Volume 1 IFRS Edition. United States of America: Wiley.
- [14] Laudon, Keneth C., & Jane., P Laudon. 2007. Management Information System. Jakarta: Salemba Empat.
- [15] Turban, E., Volonino, L. 2011. Information Technology for Management: Improving Strategic and Operational Performance. 8th edition. Danvers: John Wiley & Sons.
- [16] Lantip, D., P., & Riyanto (2010). Teknologi Informasi Pendidikan. Yogyakarta:/ Gava Media
- [17] OTLEY, D. & WILKINSON, C. (1988). Organizational Behavior: Strategy, Structure, Environment, and Technology. In: Ferris, K.R. (Ed.): Behavioral Accounting Research: A Critical Analysis. Century VII Publishing, Columbus; pp. 147-170.
- [18] Munir. (2009). Contribution of Information and Communication Technology (ICT) in Education in the Era of Globalization of Indonesian Education. Journal of Information and Communication Technology Education, Vol. 2, No. 2, p.1-4.
- [19] Pearlson, K. E., Saunders, C. S. 2013. Managing and Using Information System: A Strategic Approach. Danvers: John Wiley & Sons.
- [20] Romney, Marshall B & Paul John Steinbart. (2011). Accounting Information System. (2011). New York: McGraw-Hill.
- [21] Sacer, Ivana Mamic et al. (2006). "Accounting Information System's Quality as The
- [22] Ground For Quality Business Reporting". IAIDIS International Conference e-commerce pp. 6.
- [23] Santoso, Setyarini. Sistem Akuntansi Informasi I. Surabaya: Percetakan Petra. 1998.
- [24] Sugiyono. 2009. Metode Penelitian Administrasi Dilengkapi dengan Metode R dan B. Bandung: Alfabet
- [25] Sujianto. 2007. Aplikasi Statistik dengan SPSS untuk Pemula, Jakarta: Prestasi Pustaka.
- [26] Sekaran, Uma dan Coral R. Snodgrass, 1986. A Model For Examining Organizational Effectiveness Cross Culturally, Advances in International Comparative Management, Vol 211-232.
- [27] Surjono, Herman Dwi, dan Abdul Gafur. (2010). Potensi Pemanfaatan ICT untuk Peningkatan Mutu Pembelajaran SMA di Kota Yogyakarta. Cakrawala Pendidikan, Juni 2010, Th. XXIX, No. 2, hal.161-175.
- [28] Stewart, D. L., Brown, K. G. 2011. Human Resource Management. 2nd edition. Danvers: John Wiley & Sons.
- [29] Turnip, Monika. 2015. Pengaruh Teknologi Informasi dan Kemampuan Pengguna Terhadap Kualitas Sistem Informasi Akuntansi.
- [30] Tyson, S. 2006. Essential of Human Resource Management. Burlington: Elsevier.
- [31] Watne, Donald A., Turney, Peter B. B. Auditing EDP Systems (2nd ed.). New Jersey: Prentice Hall. 1990.
- [32] Weygandt, Jerry J., Donald E. Kieso, dan Walter G. Kell. 1996 Accounting Principle (4th ed.). United States of America: John Wiley & Sons, Inc.
- [33] Wilkinson, Joseph W., (2011), Accounting and Information Systems (3rd ed.). Singapore: John Wiley & Sons, Inc.