ANALYSIS FACTORS INFLUENCING UTILIZATION OF INFORMATION TECHNOLOGY AND ITS IMPACT ON USER SATISFACTION AND MANAGERIAL PERFORMANCE
(Study of an Information Technology based University in Surabaya)

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ABSTRACT

Purpose — *This research was conducted to explore factors influencing the utilization of information technology and its impact on user satisfaction and managerial performance.*

Design/methodology/approach — *This research is quantitative explanatory research using primary data collected by questionnaire. The respondents were fully structural officers in the technology information-based university. Data analysis uses structure equal modeling with SmartPLS.*

Findings — *The results of this research indicate that the social, affection, complexity, and long-term consequences factors have a positive and significant impact on the utilization of information technology. Job fit and facilitating condition factors have no significance to the utilization of information technology. This study result also indicates that utilization of information technology has no impact on managerial performance.*

Practical implications — *To enhance managerial performance, the institution should find another approach to utilizing information technology. The increasing education business competition in the digital era requires institutions to utilize information technology appropriately to gain the top and only university.*

Originality/value — *This study can be used as a recommendation for the institution-related policies of utilization and investment of information technology in the future to gain managerial performance.*

Keywords — *Social, Affection, Complexity, Job fit, Long term consequences, Facilitating condition, utilization of information technology, User satisfaction, Managerial performance.*

Paper type — *Case study*

INTRODUCTION

The use of information technology in supporting all of the company's operational activities is increasing along with the increasing business competition in the current digital era. One of the drivers of digital transformation is the industrial revolution 4.0, so that Artificial Intelligence, Mixed Reality, and the Internet of Things (IoT) are adopted by the company. International Data Corporation predicts a 6.9% growth in information technology spending in 2021. The company hopes that significant investments in information technology can improve individual performance, improving company performance. The studies of Brynjolfsson and Hitt (1996) and Rai et al. (1997) proved that investment in the information technology sector positively contributed to productivity and company performance. However, emerging issues show many disappointments with user companies of information technology in Indonesia because significant investments still do not provide adequate economic benefits (Amir, 2009).

Information technology is utilized at information technology-based universities as a form of commitment from the founders to utilize information technology to improve managerial performance and create good governance institutions. Given the significant investment funds and the risks of using information technology, institutions need to understand the factors that can lead organizational members to use information technology effectively (Jurnali, 2001). Suhaili (2004) stated that one of the essential aspects of understanding the use of information technology is understanding the factors influencing the utilization. The results conducted by Thompson et al. (1991) used six factors influencing utilization of information technology, indicated a positive relationship between social factors, job fit, long term consequences toward utilization of information technology, and a negative relationship between affection, complexity, and facilitating conditions toward utilization of technical information. The research conducted by Suhaili (2004) and Darmini and Putra (2007) indicated a significant and positive effect between utilization of information technology on individual performance; nevertheless, Journali (2000) study demonstrated a negative effect of using information technology on individual performance. Since there were differences in the results of various existing studies, this research is still engaging in different situations and objects with previous studies.

This study aims to examine the research model conducted by Thompson et al. (1991) and research conducted by Suhaili (2004), Darmini and Putra (2007), and Rahmawati (2008), which support the Technology Acceptance Model (TAM) theory. The novelty of this research

is the development of Thompson's conceptual model by including user satisfaction as an intervening variable. The object of research is an information technology-based university as a differentiator from other research. This study specifically aimed to investigate social, affection, complexity, job fit, long-term consequences, and facilitating condition factors that influence the utilization of information technology and its impact on user satisfaction and managerial performance.

METHOD

This study using Total Population Sampling to collect primary data considering the number of respondents was less than 100 people (Etikan et al. 2016). The Complete Enumeration Survey Method was used since the population is not large so that the researcher can identify the population quickly (Schoen et al., 2009). Data collection in this study was carried out by surveys conducted by researchers by distributing questionnaires to respondents. All 35 structural officials at an information technology-based university were respondents in this study. The questionnaire was sent via email to the respondent and reconfirmed by the researcher so that 100% of questionnaires in the Structural Equation Model (SEM) were filled out and sent back correctly.

FINDINGS AND DISCUSSION

The Results of Validity and Reliability Test

The validity test of the structural equation model was carried out using confirmatory factor analysis on each latent variable. The loading test of each indicator with a bootstrap sample shows that all indicators provide T statistical value > 1.96 so that all indicators of latent variables in this study are declared valid.

Goodness-of-Fit Test of Structural Equation Model

The results of the structural equation model testing using the SmartPLS program produce an R-Square value that describes the research model's goodness-of-fit. The recommended R-Square value is > 0. The results of the structural model goodness-of-fit test using SmartPLS can be seen in Table 1.

Table 1. Structural Model Goodness-of-Fit Test Results

Variable	R-Square

Social factors (X1), Affection (X2), Complexity (X3), Job fit (X4), Long term consequences (X5), Facilitating condition (X6) → The utilization of information technology (Y1)	0.4362
Utilization of information technology (Y1) → User satisfaction (Y2)	0.0284
User satisfaction (Y2) → Managerial performance (Y3)	0.5798

Path Coefficient Test of Structural Equation Model

The inner weights are shown through the result of coefficients for nine hypotheses, as follows: Social factor toward Utilization of Information Technology, Affection factor toward Utilization of Information Technology, Complexity toward Utilization of Information Technology, Job Fit toward Utilization of Information Technology, Long Term Consequences toward Utilization of Information Technology, Facilitating Condition toward Utilization of Information Technology, The Utilization of Information Technology toward User Satisfaction, User Satisfaction toward Managerial Performance, The Utilization of Information Technology toward Managerial Performance.

The results of the structural path coefficients and significance value can be seen in Figure 1. Based on the results of SEM analysis, causality between variables, hypothesis testing is shown in Table 2.

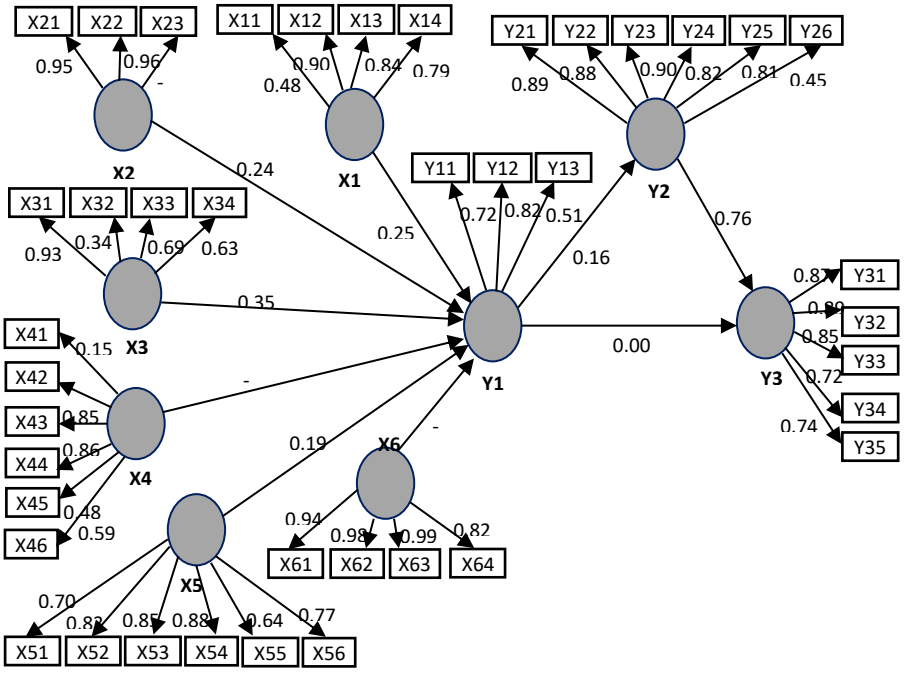

Figure 1: Path analysis diagram of the utilization of information technology, user satisfaction, and managerial performance.

Table 2. The Results of Path Coefficient Test Between Latent Variables

Variable	Coefficient	T Statistic	Note
X1 – Y1	0.2554	6.5291	Significant
X2 – Y1	0.2459	4.3970	Significant
X3 – Y1	0.3531	4.9714	Significant
X4 – Y1	-0.3288	1.6842	Insignificant
X5 – Y1	0.1941	3.7972	Significant
X6 – Y1	-0.0026	0.0653	Insignificant
Y1 – Y2	0.1684	2.9330	Significant
Y1 – Y3	0.0077	0.2736	Insignificant
Y2 – Y3	0.7601	57.0977	Significant

Source: Primary data processed using smartPLS, 2020.

Table 2 depicts the result of path analysis that the Social factor (X1), Affection factor (X2), Complexity (X3), Long term consequences (X4) directly has a significant effect on the Utilization of Information Technology (Y1). The Utilization of Information Technology (Y1) has a significant effect on User Satisfaction (Y2) but has no significant effect on Managerial Performance (Y3). User Satisfaction (Y2) has a significant effect on Managerial Performance (Y3).

The Effect of Social Factors toward Utilization of Information Technology

The results of the path coefficient prove that Social factors (X1) have a significant and positive influence on the level of Utilization of Information Technology (Y1). The coefficient of 0.2554 means that the effect of Social factors toward the Utilization of Information Technology has a positive direction with a count of 6.5291. Based on the results of these tests, it can be concluded that Hypothesis 1 is accepted, which states that the higher Social factors (X1) will increase the Utilization of Information Technology (Y1) and vice versa, the lower Social factors, the lower Utilization of Information Technology.

The finding of this study supports Reasoned Action theory, which states that individual performance will be determined by the intention of the action to be taken, which is determined by individual attitudes and subjective norms. This finding also supports the Technology Acceptance

Model theory, which states that individuals are willing to use information technology after knowing the benefits and ease to use from their colleagues or supervisors.

This finding is following the findings of Thompson et al. (1991) and Diana (2001), who found that Social factors had a positive and significant effect on the use of personal computers, but contradicted the findings of Sunarta (2005), which stated that Social factors did not affect the Utilization of Information Technology. This finding is reinforced by three indicators of Social factor (X1), which have the highest loading factor value of 0.9080 for an indicator of a colleague who help introduce the use of IT, 0.8459 for an indicator of superiors who encourage the use of IT, and 0.7917 for an indicator of institutions that assist the use of IT. This finding proves that support from the institution, supervisor, and colleague creates a conducive environment for increasing the utilization of information technology.

The Effect of Affection toward Utilization of Information Technology

The results of the path coefficient prove that Affection factors (X2) have a significant and positive influence on the level of Utilization of Information Technology (Y1). The coefficient of 0.2459 means that the effect of Affection toward Utilization of Information Technology has a positive direction with a count of 4.3970. Based on the results of these tests, it can be concluded that Hypothesis 2 states that the higher Affection factor (X2) will increase the Utilization of Information Technology (Y1) and vice versa, the lower affection, the lower the Utilization of Information Technology.

The findings of this study support the Technology Acceptance Model theory, which states that users develop an information technology based on the perceived use and ease of use of the information technology. This finding also supports the Task Technology Fit theory, which states that users find it easy to do their work.

This finding follows the findings of Thompson et al. (1991). They found that Affection factors had a positive effect but were weak on personal computer use, but contradicted Sunarta's (2005) findings, which stated that Affection factors did not affect the Utilization of Information Technology. These findings are reinforced by two Affection factors (X2) indicators, which have the highest loading factor value of 0.9699 for an indicator of feeling happy to complete work dan 0.9594 to become more attractive when using IT. This finding proves that support from the institution, superiors, and colleagues is needed by individuals who can create exciting feelings in using IT in completing work.

The Effect of Complexity toward Utilization of Information Technology

The results of the path coefficient prove that Complexity factors (X3) have a significant and positive influence on the level of Utilization of Information Technology (Y1). The coefficient of 0.3531 means that the effect of Complexity factors toward the Utilization of Information Technology has a positive direction with a count of 4.9714. Based on the results of these tests, it can be concluded that Hypothesis 3 is accepted, which states that the higher Complexity factors (X3) will increase the Utilization of Information Technology (Y1) and vice versa, the lower Complexity factors, the lower the Utilization of Information Technology.

The findings of this study support the Technology Acceptance Model theory, which states that users develop information technology based on perceived benefits and ease of use of information technology, and the Task Technology Fit theory, which states that users feel the ease in carrying out their task. This finding also supports the Theory of Reasoned Action, which states that positive feelings arise from using information technology in completing tasks and making decisions.

The findings of this study contradict the research of Thompson et al. (1991) and Diana (2001), who found that complexity had a significant and negative effect on the utilization of personal computers. This does not happen in an information technology-based university because everybody is accustomed to using information technology and feels the benefits of using it to complete their task. Therefore, the more complex the work to be completed, the higher the need for STI to assist structural officials in completing their work. The finding in this study is reinforced by three indicators of complexity factor (X3), which have the highest loading factor value of 0.9327 on the IT utilization indicator, which requires a lot of time to complete the work, 0.6950 on the indicator that takes a lot of time to complete the work entering data, and 0.6345 on indicators takes a long time to learn how to use IT. This finding explains that all structural officials do not find it difficult to use information technology in completing their tasks; instead, the more complex their task, the more they need information technology.

The Effect of Job Fit Factors toward Utilization of Information Technology

The results of the path coefficient prove that Job Fit factors (X4) have not significant and negative influence on the level of Utilization of Information Technology (Y1). The coefficient of -0.3288 means that the

effect of Job Fit factors toward Utilization of Information Technology has a negative direction with a count of 1.6942. Based on the results of these tests, it can be concluded that Hypothesis 4 was rejected, which means that Job Fit factors (X3) have a negative and not significant toward the Utilization of Information Technology (Y1).

The finding of this study does not support the Task Technology Fit theory, which states that tasks and information needs are interdependent of divisions within the organization, thus requiring certain technology functions to obtain optimal results. This result happens because information technology has been implemented at all levels of management in the institution so that all work is completed with the use of IT. The Job fit of tasks with technology is not an obstacle, so that the Job Fit does not impact the level of Utilization of Information Technology in this institution.

This research's finding follows research conducted by Diana (2001) and Sunarta (2005), which stated that task-technology suitability did not affect the use of information technology. This finding also supports the research of Goodhue and Thompson (1995), who found that task-technology fit had a positive but weak effect on the use of information technology. However, this finding contradicts the research of Thompson et al. (1991) and Darwin (1999), who found that task suitability with technology had a strong positive effect on the use of personal computers. The findings of this study indicate that in utilizing IT, the incompatibility of work with technology is not an obstacle for management staff. The Job Fit does not impact the utilization of Infomation Technology in this institution.

The Effect of Long Term Consequences toward Utilization of Information Technology

The results of the path coefficient prove that Long Term Consequences factors (X5) have a significant and positive influence on the level of Utilization of Information Technology (Y1). The coefficient of 0.1941 means that the effect of the Long Terma Consequences factor toward Utilization of Information Technology has a positive direction with a count of 3.7972. Based on the results of these tests, it can be concluded that Hypothesis 5 states that the higher Long Terma Consequences factors (X5) will increase the Utilization of Information Technology (Y1) and vice versa, the lower Long Terma Consequences factors, the lower the Utilization of Information Technology.

The findings of this study support the theory of Reasoned Action, which states that the purpose of an individual behavior becomes the power to take the specified action. This finding also supports the

Technology Acceptance Model theory, which states that users develop information technology based on perceived benefits and ease of use of information technology, and supports the Technology to Performance Chain theory which shows the critical role of technology in influencing performance.

The findings of this study contradict the research of Sunarta (2005), which found that long-term consequences have no significant effect on the use of information technology, but support the research conducted by Thompson et al. (1991) and Diana (2001), which state that long-term consequences have a positive and significant effect on the use of personal computers or information technology. This finding shows that structural officials in this institution hope to achieve higher careers through improving managerial performance by utilizing information technology.

The Effect of Facilitating Condition toward Utilization of Information Technology

The results of the path coefficient prove that Facilitating Condition factors (X6) do not have a significant and negative influence on the level of Utilization of Information Technology (Y1). The coefficient of -0.0026 means that the effect of Facilitating Condition factors toward Utilization of Information Technology has a negative direction with a count of 0.0653. Based on the results of these tests, it can be concluded that Hypothesis 6 was rejected, which means that Facilitating Condition factors (X6) have a negative and not significant toward the Utilization of Information Technology (Y1).

The findings in this study contradict the Theory of Reasoned Action, which states that the goal of behavior that has been set is the individual's power to take the specified action. The findings also contradict the Task Technology Fit theory, which states that technology supports individuals in completing their tasks. However, the institutional commitment to providing all IT facilities causes the facilitating conditions to no longer to have a significant effect on increasing IT utilization in this IT-based university. The findings in this study support the model of DeLone and McLean (1992), which states that the impact of the use of information technology toward individual performance and the level of user satisfaction has a reciprocal relationship. This finding also supports the Technology Acceptance Model theory, which states that computer acceptance behavior is caused by computers' usefulness and ease of use. The findings of this study support the research of Istianingsih and Utami (2009). They found that the quality of systems and information has a

significant and positive effect on user satisfaction with information technology. Thompson et al. (1991) found that facilitating conditions were weakly and negatively related to personal computer utilization. The result of this study proves that the institution's commitment to providing information technology facilities is appropriate since it can provide system quality assurance that increases trust in the information produced by information technology.

The Effect of Utilization of Information Technology toward User Satisfaction

The results of the path coefficient prove that the Utilization of Information Technology (Y1) has a significant and positive influence on User Satisfaction (Y2). The coefficient of 0.1684 means that the effect of Utilization of Information Technology toward User Satisfaction has a positive direction with a count of 2.9330. Based on the results of these tests, it can be concluded that Hypothesis 7 is accepted, which means that the Utilization of Information Technology (Y1) has a significant and positive influence on User Satisfaction (Y2).

The findings in this study support the model of DeLone and McLean (1992), which states that the impact of the use of information systems on individual performance and the level of user satisfaction has a reciprocal relationship. This finding also strengthens the Technology Acceptance Model theory and the Task Technology Fit theory. When managerial tasks can be adequately completed through the use of information technology, users feel satisfied with the use of information technology so that they are happy to use it and ultimately impact their managerial performance.

The findings of this study support the research of Istianingsih and Utami (2009). They found that the quality of systems and information has a significant and positive effect on user satisfaction with information technology. The institutional commitment to provide information technology is beneficial for structural officers to overcome difficulties in using information technology in completing their managerial tasks. This increases the satisfaction of structural officials to utilize information technology in completing their tasks.

The Effect of Utilization of Information Technology toward Managerial Performance

The results of the path coefficient prove that Utilization of Information Technology (Y1) has positive but not significant toward the level of Managerial Performance (Y3). The coefficient of 0.0077 means that the effect of the Utilization of Information Technology toward

Managerial Performance has a positive direction with a count of 0.2736. Based on the results of these tests, it can be concluded that Hypothesis 8 was rejected, which means that Utilization of Information Technology (Y1) has a positive but not significant toward the Managerial Performance (Y3).

The findings in this study contradict the theory of Task Technology Fit, which states that technology is beneficial for individuals in completing work and achieving performance. The findings of this study do not support the Technology to Performance Chain theory which states that the critical role of technology in influencing individual performance. Although the role of information technology is considered essential and has been used in the completion of managerial tasks, it does not mean that it can directly improve managerial performance due to the posibility of difficulties in using information technology or the type of technology that is not suitable for the task to be completed.

The findings of this study contradict the research of Goodhue and Thompson (1995), Darwin (1999), and Sunarta (2005), which state that the use of information technology affects an individual or employee performance. On the other hand, this finding supports Jurnali's (2000) research, which states that information technology does not affect individual performance. Thus, another variable is needed as an intervening to make the use of IT affect managerial performance.

The Effect of User Satisfaction toward Managerial Performance

The results of the path coefficient prove that User Satisfaction (Y2) has a significant and positive influence on Managerial Performance (Y3). The coefficient of 0.7601 means that the effect of User Satisfaction toward Managerial Performance has a positive direction with a count of 57.0977. Based on the results of these tests, it can be concluded that Hypothesis 9 is accepted, which means that User Satisfaction (Y2) has a significant and positive influence on Managerial Performance (Y3).

The findings in this study support Doll and Torkzadeh's (1988) information system success model, which states that the end-user satisfaction of information technology is used as a measurement of the success of information technology. This finding also supports the model of DeLone and McLean (1992), which states that user satisfaction with information technology has a vital role in determining the use of application systems.

The findings of this study support the research findings of Istianingsih and Utami (2009), which states that information system satisfaction has a significant and positive effect on individual

performance. The findings are consistent with the study of McGill et al. (2003), which states that the end-user satisfaction of information systems has a significant role in determining the use of the application system. The findings of this study indicate that structural officials who are satisfied with the use of information technology tend to use it more optimally, which impacts increasing managerial performance. This finding also supports hypothesis 8 which the level of utilization of information technology is proven to have no significant effect on managerial performance.

CONCLUSION

Based on the results of the research and discussion of social factors, affection, complexity, task suitability with technology, long-term consequences, facilitating conditions, level of utilization of information technology, user satisfaction, and managerial performance, the conclusions at information technology-based university, the conclusions are as follows:

1. The results of testing hypothesis 1 indicate that the Social variable (X1) has a positive and significant influence on the Utilization of Information Technology (Y1). The coefficient of 0.2554 means that the effect of Social factors (X1) toward the Utilization of Information Technology (Y1) has a positive direction, indicating that increasing Social factors can increase the Utilization of Information Technology in this institution.
2. The results of testing hypothesis 2 indicate that the Affection variable (X2) has a positive and significant influence on the Utilization of Information Technology (Y1). The coefficient of 0.2459 means that the effect of Affection factors (X2) toward the Utilization of Information Technology (Y1) has a positive direction, indicating that increasing Affection factors can increase the Utilization of Information Technology in this institution.
3. The results of testing hypothesis 3 indicate that the Complexity variable (X3) has a positive and significant influence on the Utilization of Information Technology (Y1). The coefficient of 0.3531 means that the effect of the Complexity factor (X3) toward the Utilization of Information Technology (Y1) has a positive direction, indicating that increasing Complexity factors can increase the Utilization of Information Technology in this institution.
4. The results of testing hypothesis 4 indicate that the Job Fit variable (X4) has no significant and negative influence on the Utilization of Information Technology (Y1). The coefficient of
5. 0.3288 means that the effect of the Job Fit factor (X4) toward the Utilization of Information Technology (Y1) has a negative direction,

indicating that there is no impact of the Jot Fit toward the level of Utilization of Information Technology in this institution.

6. The results of testing hypothesis 5 indicate that the Long Term Consequences variable (X5) has a positive and significant influence on the Utilization of Information Technology (Y1). The coefficient of 0.1941 means that the effect of the Long Term Consequences factor (X5) toward the Utilization of Information Technology (Y1) has a positive direction, indicating that increasing Long Term Consequences can increase the Utilization of Information Technology in this institution.
7. The results of testing hypothesis 6 indicate that the Facilitating Condition variable (X6) has no significant and negative influence on the Utilization of Information Technology (Y1). The coefficient of -0.0026 means that the effect of Facilitating Condition factor (X6) toward the Utilization of Information Technology (Y1) has a negative direction which indicates that there is no impact of the Facilitating Condition toward the level of Utilization of Information Technology in this institution.
8. The results of testing hypothesis 7 indicate that the Utilization of Information Technology (Y1) has a positive and significant influence on User Satisfaction (Y2). The coefficient of 0.1684 means that the effect of Utilization of Information Technology (Y1) toward the User Satisfaction (Y2) has a positive direction, indicating that increasing the Utilization of Information Technology can increase User Satisfaction in this institution.
9. The results of testing hypothesis 8 indicate that the Utilization of Information Technology (Y1) positive but not significant influence on Managerial Performance (Y3). The coefficient of 0.0077 means that the effect of Utilization of Information Technology (Y1) toward Managerial Performance (Y3) has a positive direction, indicating that there is no impact of the level of Utilization of Information Technology toward the User Satisfaction in this institution.
10. The results of testing hypothesis 9 indicate that User Satisfaction (Y2) has a positive and significant influence on Managerial Performance (Y3). The coefficient of 0.7601 means that the effect of User Satisfaction (Y2) toward Managerial Performance (Y3) has a positive direction which indicates that the more satisfied users are, the higher performance of the managerial in this institution.
11. The results of this study indicate the indirect effect of the Utilization of Information Technology (Y1) toward Managerial Performance (Y3) through User Satisfaction (Y2) as an intervening variable. Based on the conclusions of the nine proven hypotheses, it can be generally concluded that managerial performance in information technology-based universities is influenced by social factors, affection,

complexity, and long-term consequences through the level of utilization of information technology systems and the level of user satisfaction as intervening variables in this study.

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REFERENCE

Agus, S.I.K. 2006. Analisis Faktor-Faktor yang Berpengaruh Penggunaan Teknologi Teknologi Sistem Informasi serta Pengaruh Penggunaan Teknologi Sistem Informasi terhadap Kinerja Chief Accounting pada Perusahaan Cargo di Denpasar. *Fakultas Ekonomi, Universitas Udayana, Denpasar*.

Amoroso, D. L., and Cheney, P. H. 1991. Testing a Causal Model of End-user Application Effectiveness. *Journal of Management Information Systems.* Vol 8. No 1:63-89.

Brynjolfsson, G. H. and *Hitt*, W. S. 1996. *Accounting Information Systems*. 6th. Edition. New-Jersey: Prentice-Hall International.

Callon, J. D. 1996. *Competitive Advantage through Information Technology*. New York: McGraw Hill, USA.

Cooper, D.R. and Schindler, P.S. 2003. *Business Research Methods*. 8th Edition. New York: Mc Graw-Hill Irwin.

Darmini, AA.S.R., and I N.W.A Putra. 2007. Pemanfaatan Teknologi Informasi dan Pengaruhnya pada Kinerja Individual Pada Bank Perkreditasn Rakyat di Kabupaten Tabanan. *Jurusan Akuntansi, Fakultas Ekonomi. Universitas Udayana*.

DeLone, W.H. and McLean, E.R. 1992. Information System Success: The Quest for the Dependent Variable. *Information System Research* (March): 60-95.

Doll, W.J. and Torkzadeh, G. 1998. The Measurement of End-User Computing Satisfaction. *MIS Quarterly* (June): 259-273.

Etikan, Ilker. 2016. Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics).* Vol 5. No 1:1-4.

Ferdinand, A. 2000. Structural Equation Modelling Dalam Penelitian Manajemen;Aplikasi Model-Model Rumit Dalam Penelitian Untuk Tesis S-2 dan Disertasi S-3. Semarang: BP Universitas Diponegoro.

Ghozali, Imam. 2011. *Aplikasi Analisis Multivariat dengan Program SPSS*. Semarang: Badan penerbit Universitas Diponegoro.

Goodhue, D.L. and Thompson, R.L. 1995. Task-Technology Fit and Individual Performance. *MIS Quarterly* (June).

Guimaraes, T., D. S. Staples, and J. D. McKeen. 2003. Empirically Testing Some Main User-Related Factor for Systems Development Quality. *Quality Management Journal*. Vol 10. No 4:39-54.

Istianingsih, and Utami, W. 2009. Pengaruh Kepuasan Pengguna Sistem Informasi Terhadap Kinerja Individu (Studi Empiris Pada Pengguna Paket Program Aplikasi Sistem Informasi Akuntansi Di Indonesia). *Seminar Nasional Akuntansi XII Palembang 2009*.

Ives, B., M.H. Olson, and J.J. Baroudi. 1983. The Measurement of User Information Satisfaction. *Communications of the ACM* c 785-793.

Latan, Hengky, and Ghozali, Imam. 2012. *Partial Least Squares: Konsep, Teknik dan Aplikasi SmartPLS 2.0*. Semarang: Badan penerbit Universitas Diponegoro.

Kim, C., Suh, K. and Lee, J. 1998. Utilization and User Satisfaction in End-User Computing: A Task Contingent Model. *Information Research Management Journal*. Vol 11. No 4:11-24.

Kurniawan, R, 2008. *Analisis Pengaruh Teknologi Informasi Pada Kinerja Organisasi Study Empiris PT. Bank Rakyat Indonesia (PERSERO) Tbk Unit Kantor Cabang Tegal, Kantor Wilayah Semarang*. Tesis S-2, Magister Sains Akuntansi Universitas Diponegoro.

McGill, Tanya, Hobbs, Valerie, and Klobas, Jane. 2003. User-Developed Applications and Information Systems Success: a Test of DeLone and McLean's Model. *Information Resource Management Journal*. Vol 16. No 1:24-45.

Melone N.P. 1990. A Theoretical Assessment of The User Satisfaction Constructs in Information System Research. *Management Science*. Vol 36. No 1:76-91.

Myers, Barry L, Kappelman, Leon A. and Prybutok, Victor. R. 2007. A Comprehensive Model for Assessing the Quality of the Information System Function: Toward a Theory for Information System Assessment. *Information Resource Management Journal* (Winter). Vol 10. No 1:6-25.

Noerlina, dkk. 2005. Analisis Tingkat Kepuasan Pengguna Terhadap Aplikasi Oracle 9i: Studi Kasus PT Sport Forecast Asia. *Jurnal Compact*. Vol 2. No 1:60-74.

Rahmawati, D. 2008. Analisis Faktor-Faktor Yang Berpengaruh Terhadap Pemanfaatan Teknologi Informasi. *Jurnal Ekonomi & Pendidikan*. Vol 5. No 1:107-118.

Rai, A., Patnayakuni, R, and Patnayakuni, N. 1997. Technology Investment and Business Performance. *Communication of the ACM*: 89-9.

Rai, A., Lang, S.S. and Welker, R.B. 2002. Assessing the Validity of IS Success Models: An Empirical Test and Theoretical Analysis. *Information System Research*. Vol 13. No 1:29-34.

Schiffman, S., Meile, L., and Igbaria, M. 1992. An Examination of End-user Types. *Information & Management*. Vol 22. No 4:207-215.

Schoen, E.D., Eendebak, P.T., and Nguyen, M.V.M. 2009. Complete Enumeration of Pure-Level and Mixed Orthogonal Arryas. *Journal of Combinatorial Designs* (March): 1-28.

Seyal, A.H., Rahim, M.M, and Rahman, M.N.A. 2000. Computer Attitudes of Non-Computing Academics: A Study of Technical Colleges in Brunei Darussalam. *Information & Management* 37 (2000):169-180.

Sommers, T. M., Nelson, K., and Karimi, J. 2003. Confirmatory Factor Analysis of the End-User Computing Satisfaction Instrument. *Decision Sciences*. Vol 34. No 3:595-621.

Thompson, R.L., Higgins, C.A, and Howell, Jane M. 1991. Personal Computing: Toward a Conceptual Model of Utilization. *MIS Quarterly* (March): 125-143.

Tjhai, Fung Jin. 2003. Analisis Faktor-Faktor Yang Mempengaruhi Pemanfaatan Teknologi Informasi dan Pengaruh Pemanfaatan Teknologi Informasi terhadap Kinerja Akuntan Publik. *Jurnal Bisnis dan Akuntansi*. Vol 5. No 1:1-26.