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Analysis of behavioral intention on ABC system adoption: Model of information systems technology and success acceptance

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A B S T R A C T

This study aims to examine the effect of individual behavioral change on the adoption of activity- based costing (ABC) system and its usage, using Unified Theory of Acceptance and Use of Technology (UTAUT) and Information System Success Model. The sample involves 78 respondents who have positions as financial manager, controller manager, accounting manager, and production manager in mid-sized manufacturing companies in East java. The data were collected by survey method. This study used a Partial Least Square (PLS) as the data analysis method. It was found that not all of the main UTAUT models were supported, because performance expectancy and effort expectancy have no effect on behavioral intention and use behavior to adopt ABC system. Whereas, social factors, information quality and facilitating conditions had a positive effect on behavioral intention and use behavior to adopt ABC system. The different results of this study with several previous studies are probably caused by the differences in the context of system, culture and characteristics of the sample. The implication of this study is not only to propose a theoretical framework for researches in future, but also useful for companies to optimize the use of ABC system that should be supported by top level and mid-level management and the readiness of the individuals to accept the adoption of the ABC system.

A B S T R A K

Penelitian ini bertujuan untuk menguji pengaruh perubahan perilaku individu pada adopsi activity-based costing system (ABC) dan penggunaannya, dengan Unified Theory of Acceptance and Use of Technology (UTAUT) dan Information System Success Model. Sampel terdiri dari 78 responden yang memiliki posisi sebagai manajer keuangan, manajer controller, manajer akuntansi, dan manajer produksi di perusahaan manufaktur menengah di Jawa Timur. Data dikumpulkan dengan metode survei. Penelitian ini menggunakan Partial Least Square (PLS) sebagai metode analisis data. Ditemukan bahwa tidak semua model UTAUT yang didukung, karena harapan kinerja dan effort expectancy tidak berpengaruh pada niat berperilaku dan perilaku yang digunakan untuk mengadopsi sistem ABC. Adapun faktor sosial, kualitas informasi dan kondisi yang memfasilitasi memiliki pengaruh positif pada niat berperilaku dan perilaku yang digunakan untuk mengadopsi sistem ABC. Hasil yang berbeda dari penelitian ini dengan beberapa penelitian sebelumnya mungkin disebabkan oleh perbedaan dalam konteks sistem, budaya, dan karakteristik sampel. Implikasi dari penelitian ini adalah tidak hanya untuk mengusulkan kerangka teoritis pada penelitian mendatang tetapi juga berguna bagi perusahaan untuk mengoptimalkan penggunaan sistem ABC yang harus didukung oleh manajemen tingkat atas dan menengah serta kesiapan individu untuk menerima adopsi dari sistem ABC.

1. INTRODUCTION

Activity-Based Costing (ABC) system is a costing system that tries to improve the traditional calculation system with the emphasis on the activity as a basis for costing (Hilton et al. (2003)). In addition, ABC system usage is due to the requirements of organizations for accounting information, where the information system could reflect the resources in various activities to generate products accurately. The implementation of ABC system is very

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beneficial because the information provided can significantly improve the effectiveness of the costing system and acts as a decision support system for strategic measures to increase market competition and to respond the market significantly (Nair 2002; Stevenson et al. 1993).

In reality, not all of the ABC system implementations are in accordance with the expectations of the management. Technology and human factor are also the factors that cause the failure of its implementation because technology and human are important components. The reason that technology can lead to the failure of the implementation is due to the technology getting more sophisticated, the implementation of ABC system is often performed imperfectly. Another factor that leads to the failure of ABC system implementation is human factor. The failure occurs due to the reluctance or refusal of the individuals in the company to implement the system, the lack of understanding on how the ABC system treats and be treated in the company's business processes, and the unpreparedness of the human to accept and work on new innovations provided in the implement of ABC system.

The emergence of these problems is the reason for the researchers to re-examine the adoption of ABC system. This study is important because through the implementation of ABC system, especially by businessmen who are engaged in manufacturing companies in East Java, it could help them face free market competition. The companies that already have a wide business market will certainly have quite high internal activities. The implementation of ABC system is expected to be able to provide timely and accurate information to every decision maker.

This study focuses on three aspects: First, the researchers use the companies that have been implementing ABC system. Second, the factors that generate intention and behavior of individuals to accept and adopt ABC system using the *Unified Theory of Acceptance and Use of Technology (UTAUT)* and the model of acceptance and success of information. UTAUT is a model developed by Venkatesh et al. (2003). The model was built based on eight models previously developed in the field of information system acceptance research. The eight models are: *Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), The Motivational Model (MM), The Theory of Planned Behavior (TPB), The Combined TAM and TPB (C-TAM-TPB), The Model of PC Utilization (MPCU), The Innovation Diffusion Theory (IDT) and the Social Cognitive Theory (SCT)*.

The development of the underlying factors of the eight models and the combination of the model is by taking the main constructs such as *performance expectancy, effort expectancy and social influence*. The constructs are the determinant factors of behavioral intention. And this behavioral intention will affect the use behavior. Facilitating condition is also the main construct that influences the use behavior.

In this study, the researchers conducted a freshness and development by adding a construct relating to technology, i.e. the quality of information developed through the success model as described by DeLone and McLean (2003). The researcher assumes that the quality of information is a construct that is suitable to explain technological dimension to use the ABC system because the information system is a system that has a full fairness in management decision making.

Based on the above explanation, the formulation of research problems is as follows: 1) do performance expectancy, effort expectancy, social factor, and quality of information have an effect on behavioral intention to adopt ABC system? 2) do facilitating conditions have an effect on use behavior to adopt ABC system ?. 3) does behavioral intention has an effect on use behavior to adopt ABC system? The motivation underlying this research is the issue of why organizations accept and adopt the ABC system. There is a phenomenon related to the rejection to adopt the ABC system by the company. It may include the failure of implementation and complaint against the adoption of ABC system after its implementation. The aim of this study is to determine whether the main model of UTAUT, consisting of performance expectancy, effort expectancy, social influence, facilitating conditions and model of success (information quality), has an influence on behavioral intention and use behavior to adopt ABC system.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Sistem Activity Based Costing (ABC System)

ABC system is a cost information system that provides complete information about the activities to allow the personnel of the company to manage the company's activities. The result obtained from the management of the activity is the improvement of the activity that is used by companies to generate products/services for the customers. Consequently, the benefit of the product/service for customers is increasing and the cost to generate the products/services is diminishing. According to Blocher et al. (2008: 222), Activity-Based Costing (ABC) is

defined as the cost approach where the charges on the resource to a cost object both products and services are based on activities performed for the cost object.

The implementation of ABC method is an innovation to reduce activities that do not add value, to increase the value added to the products/services that will be generated, and to eliminate activities that are not in accordance with the wishes of the customer or that do not create added value. The key assumption underlying the ABC method is the activities that cause the costs and auxiliary resources or resources that do not directly provide the ability to carry out activities, not just a cause of cost. The second assumption is that products or customers cause the request. Based on the activities to create products or services required, a variety of activities make the resources carry out such activities.

Individual Behavioral Theory

Individual behavioral theory comes from psychological theory. Psychology is generally defined as the science of behavior and mental processes that try to describe, explain, predict, and control aspects of the feelings, thoughts, perceptions, and behavior. Psychology is the scientific study of behavior, cognition (thinking), emotion (feelings), and unconscious neurological basis of behavior. Behavioral information systems theory rests on one of the branches of psychology that is behaviorism. Behaviorism is a branch of psychology that studies behavior that can be observed and measured. This branch states that behavior can be studied and explained scientifically. Behaviorism emphasizes on behavioral responses that can be observed and measured. Behaviorism suggests that behavior is a response to stimuli in the environment that can be learned.

The Basic Model of UTAUT Information System Success Model

Unified Theory of Acceptance and Use of Technology (UTAUT) is one of the behavioral theories in information systems firstly developed in the USA by Venkatesh et al. (2003). UTAUT model has been tested in several countries, such as Australia (Schaper and Pervan 2007), India (Bandyopadhyay and Fraccastoro 2007), Saudi Arabia (Al-Gahtani et al. 2007), Jordan (Shanab and Pearson 2009), Thailand (Kijsanayotin et al. 2009), China and USA (Venkatesh dan Zhang 2010), Uganda (Tibenderana et al. 2010), Korea and USA (Im et al. 2011). UTAUT is the unity of the eight theories that have been been developed previously. The eight theories are *Theory of Reasoned Action* (TRA), *Technology Acceptance Model* (TAM), *Theory of Planned Behavior* (TPB), *Combined TAM and TPB* (C-TAM-TPB), *Motivational Model* (MM), *Model of PC Utilization* (MPCU), *Innovation Diffusion Theory* (IDT), Social Cognitive Theory (SCT). Venkatesh et al. (2003) combined the eight theories to generate the main constructs in which, first, *performance expectancy*, *effort expectancy*, *social influence* which have direct effect on *behavioral intention*. *Second*, *facilitating conditions* and *behavioral intention* have direct effect on the *use behavior*.

Performance expectancy construct is a strong and significant predictor of behavioral intention (Venkatesh et al. 2003). According to Chen et al. (2008), performance expectancy is an important antecedent to get commitment and is defined as a determination to achieve the goal. The findings of Venkatesh et al. (2003) showed that performance expectancy affects the behavioral intention in using technology-based information systems. On the other hand, the study of Lee et al. (2010) showed that the intention of the individuals to promote the ABC system is based on how many systems that will help individuals to improve performance on their job. This shows that the higher the performance expectancy, the higher the interest of the individuals to use the accounting information system.

Effort expectancy construct is defined as the level of ease in using technology-based information system (Venkatesh et al. 2003). An empirical study conducted by Bandyopadhyay and Fraccastoro (2007) indicates that effort expectancy has direct effect on behavioral intention of individuals to use prepayment metering system and electricity account management (EAM). Similarly, a study conducted by Al-Gahtani et al. (2007) found that effort expectancy has an effect on behavioral intention to technology-based information systems. Further research by Baridwan (2012) provided empirical evidence that effort expectation has a positive effect on behavioral intention. It is contradictive with the findings of Lee et al. (2010) which showed that effort expectation has no effect on individual intention to promote the ABC system.

Social influence construct is defined as the level of understanding of an individual that other important people around him believe that he should use the new system (Venkatesh et al. 2003). Bandyopadhyay and Fraccastoro (2007) obtained evidence that social factor has an effect on behavioral intention of the consumers (users) in using the prepayment metering technology systems. Research by Shanab and Pearson (2009) showed that social in-

fluence is a factor that needs to be considered. The studies conducted by Lee et al. (2010) and Baridwan (2012) also showed empirical evidence that social factor positively affects behavioral intention. In contrast to the research conducted by Alshehri et al. (2012) showing that social factor has no effect on behavioral intention to use E-Government services.

Facilitating condition construct is defined as the level that indicates that an individual believes that an infrastructure, organizationally and technically, already exists to support the use of technology-based information system (Venkatesh et al. 2003). The findings of Venkatesh et al. (2003) showed that the facilitating condition has a significant effect on the use behavior of technology-based information systems. Lee et al. (2010) obtained the fact that facilitating condition is a decisive factor which has a significant influence to increase the use of the ABC system. While Alshehri et al. (2012) confirmed that facilitating condition has a direct and significant effect on the use behavior of E-Government services.

The effect of behavioral intention on the use behavior of technology-based information systems that appears in UTAUT model (Venkatesh et al. 2003) is also modeled in the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavioral (TPB) and the updated D and M Information systems success models. The research carried out by Al-Gahtani (2007) found that behavioral intention has an effect on the use of technology-based information systems. Shin (2010) in Baridwan (2012) obtained empirical evidence that behavioral intention has an effect on the use behavior of technology-based information systems. In line with the research conducted by Lee et al. (2010), performance expectancy and social influence have a significant positive effect on the changes of behavioral intention of the agent to promote the ABC system. The research by Lee at al. (2010) also found that changes in behavioral intention of the agent to promote the ABC system and the facilitating condition are two decisive factors that have a significant effect to increase the use of ABC system.

The most popular information system success model is the D and M Information System Success Model developed by DeLone and McLean (1992) consisting of six constructs: information quality, system quality, information use, user satisfaction, individual impact, and organizational impact. In this study, the researchers only use information quality as an additional construct, because information quality is the characteristic desired from the information product. According to the D and M Information System Success Model (1992), information quality, partially or simultaneously, affects the information use and user satisfaction. So, information use can affect user satisfaction. Meanwhile, information use and user satisfaction affect the individual and further affect the organization.

In conclusion, DeLone and McLean (2003) modeled the context of technology in which information quality affects the behavioral intention or use behavior. This model is a renewal of the D and M Information System Success Model of DeLone and McLean (1992). Second, the use behavior of the information technology is one of the appropriate measurements to measure the success of an information system. Third, the use behavior of information technology has an effect on organizational performance. Based on these explanations, the researchers enhance UTAUT model by critiquing D and M Information System Success Model (DeLone and McLean, 1992 and 2003), which later becomes the model of this study.

Behavioral intention is the desire of an individual to take a real action or certain real behavior. The desire of an Individual may change through time. Ajzen and Fishbein (1980) tried to understand human behavior that identifies the causes of the rise of the desire of the individual. Ajzen and Fishbein (1980) constructed a theory called the Theory of Reasoned Action (TRA).

The research model underlying this study can be described in Figure 1.

Based on the background and the formulation of the problems asserted, the research hypotheses can be stated as follows:

H_1: Performance expectancy has positive effect on behavioral intention to adopt ABC system

H_2: Effort expectancy has positive effect on behavioral intention to adopt ABC system

H_3: Social influence has positive effect on behavioral intention to adopt ABC system

H_4: Information quality has positive effect on behavioral intention to adopt ABC system

H_5: Facilitating condition has positive effect on use behavior to adopt ABC system

H_6: Behavioral intention has positive effect on use behavior to adopt ABC system.

3. RESEARCH METHOD

The population of this study is manufacturing companies in East Java. The manufacturing companies that will be used as the population must have middle-up scale with the number of employees over 50 employees. The unit of analysis intended is

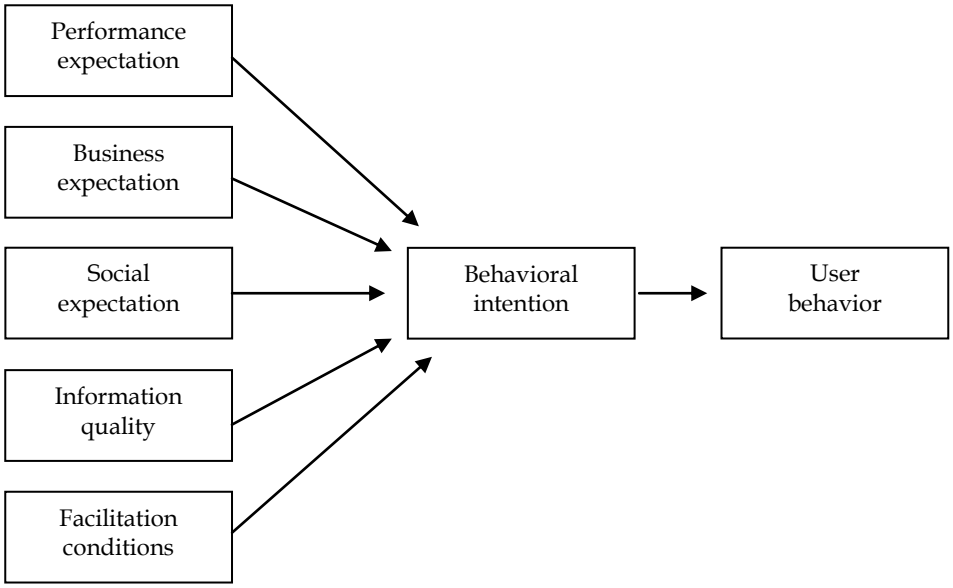

Figure 1
Research Model

the individuals who work in middle-management position such as financial manager, controlling manager, accounting manager and production manager who work in manufacturing companies in East Java. The samples used are 32 manufacturing companies in which each company is represented by four individuals, so that the sample size in this study is 128 samples.

The sampling method of this study is convenience sampling method. The researchers collected the samples from the members of the population. They are the employees of manufacturing companies in East Java who are willing to become the respondents, with the aim to increase the response rate of the respondent. This is because not all companies are willing to provide information relating to the costing system used. The data collection method in this research is a survey method using questionnaires. The surveys used in this study are, first, computer delivered survey, where the questionnaires are sent to respondents via computer (internet), second, mail survey, where the questionnaires are sent to respondents via mail, and third, pick up survey, where the questionnaires to respondents by the researcher and the results are also taken from the respondents by the researcher (Hartono 2013: 10-11).

This study uses three types of variables, namely exogenous variable, endogenous variable and control variable. The exogenous variable in this study consists of performance expectancy, effort expectancy, social influence and facilitating condition. The endogenous variable in this study consists of behavioral intention and use behavior. The control variable in this study consists of job position, gender, latest education, educational background and work experience. The instrument used to measure the construct is the instrument that has ever been used by Al-Gahtani et al. (2007), DeLone and McLean (2003), Venkatesh et al. (2003), Lee et al. (2010). This makes it possible to improve the validity and reliability of the measurement. The measurement for each variable is using a Likert scale.

The analytical tool used in this study is the *Partial Least Square* (PLS). PLS is a multivariate statistical technique that performs comparison between the multiple dependent variables and multiple independent variables (Hartono and Abdillah 2009: 13). Several hypothesis tests are used to analyze this study by employing PLS, namely outer model evaluation (measurement model) consisting of validity test (convergent validity and discriminant validity), reliability test using Cronbach alpha and composite reliability methods, inner model evaluation (structural model) using R^2 and path coefficient values or t-values for each path to test the significance of the variables of the structural model.

The value of the path coefficient is described by the value of t-statistics. The value of t-statistic is compared with the value of the t-table in hypothesis testing. The value of t-table for a two-tailed hypothesis is 1.96, while for a one-tailed hypothesis is 1.645. The t-statistic value that is greater than the t-table value indicates that the hypothesis is accepted. The hypothesis test in this study is done by comparing the t-statistic value, on the output display of bootstrapping program smartPLS, with t-

Table 1
Degree of Questionnaire Returned

Description	Total	Percentage
Questionnaires sent	128	100%
Questionnaires not returned	37	28.9%
Questionnaires returned	91	71.1%
Questionnaires cannot be processed	13	10.1%
Questionnaires which can be processed	78	60.9%

Source: Processed data.

table value. If the t-statistic is higher (> 1.645) than t-table value, this means that the hypothesis is accepted. This is because the hypothesis built in this study is using one-tailed hypothesis test. The value of T-table of one-tailed hypothesis for the significance level is > 1.645.

4. DATA ANALYSIS AND DISCUSSION

Before spreading the questionnaires, the researchers conducted pre-test and pilot test to determine the validity and reliability of the research instruments. After getting valid and reliable instruments, the researchers spread 128 questionnaires to all respondents who work in manufacturing companies in East Java. The researchers then conducted direct contact and by phone before spreading the questionnaires to ensure the delivery time of the questionnaires and make contact again to tell regarding the receipt and return of the questionnaires. Table 1 is a summary of the distribution of the questionnaire returns.

Based on Table 1, it is known that of the 128 questionnaires distributed, as many as 91 questionnaires were returned, or 71.1%. The questionnaires which are not returned are 37, or 28.9%. The questionnaires which can be processed are 78, or 60.9%, while the questionnaires which cannot be processed are 13, or 10.1%.

Model Evaluation

Model evaluation was done by testing the outer model and the inner model. Outer model is a stage to evaluate the value of validity and reliability. Reliability test can be done by using two methods: first, the Cronbach's Alpha, whose value must be> 0.6, and second, the composite reliability, whose value must be> 0.7. Yet, validity test is divided into 2: convergent validity, which is shown through the value of AVE, and communality, whose each construct value is > 0.5). The discriminant validity is seen from the cross loading value that must be 0.7. In this study, the value of validity and reliability have been met, or in accordance with the value of thumb on the parameter of validity and reliability test (see Table 2 and Figure 2).

Inner model is a stage to evaluate the relationships among constructs. Inner model is evaluated using the parameter of R2 value. In this study, the R2 value for behavioral intention (MK) is 0.424, and 0.383 for the user behavior (PP). The R2 value for behavioral intention shows that the changes of endogenous variable of behavioral intention can be explained by the exogenous variable of performance expectancy, effort expectancy, social factors, and information quality, that is 42.4 percent. Meanwhile, the value of 38.3 percent is for the user behavior which means that the endogenous variable of user behavior is explained by the exogenous variable of facilitating conditions, the endogenous variable of behavioral intention and control variable.

Based on Table 3, there is one variable in the information quality variable that has value of AVE and communality below 0.5, because from the 7 constructs possessed by the information quality, there is one construct that is not qualified and is considered invalid. Therefore, the researcher performs retesting by removing 1 construct of the information quality variable. The retesting results can be seen on algorithm in Table 4.

Based on the research model, in this study, there are six hypotheses, from H1 to H6. Here is the t-statistics diagram and the results of path coefficient test (mean, STDEV, and t-value) for the structural model based on the output with smartPLS.

Hypothesis 1 (H_1) states that performance expectancy has positive effect on behavioral intention to adopt ABC system. The results of data processing in algorithm table show that performance expectancy has positive effect on behavioral intention as indicated by the original sample estimate value of 0.225, with t-statistic value of 0.811 and t-table value of 1.645. So, hypothesis 1 (H1) is rejected, because t-statistic value is smaller than t-table value (0.811 < 1.645). This result is not consistent with the results of the study by Lee et al. (2010), Schaper and Pervan (2007), Alshehri et al. (2012) and McLeoad et al. (2009).

The difference between this finding and the previous ones is probably caused by the system

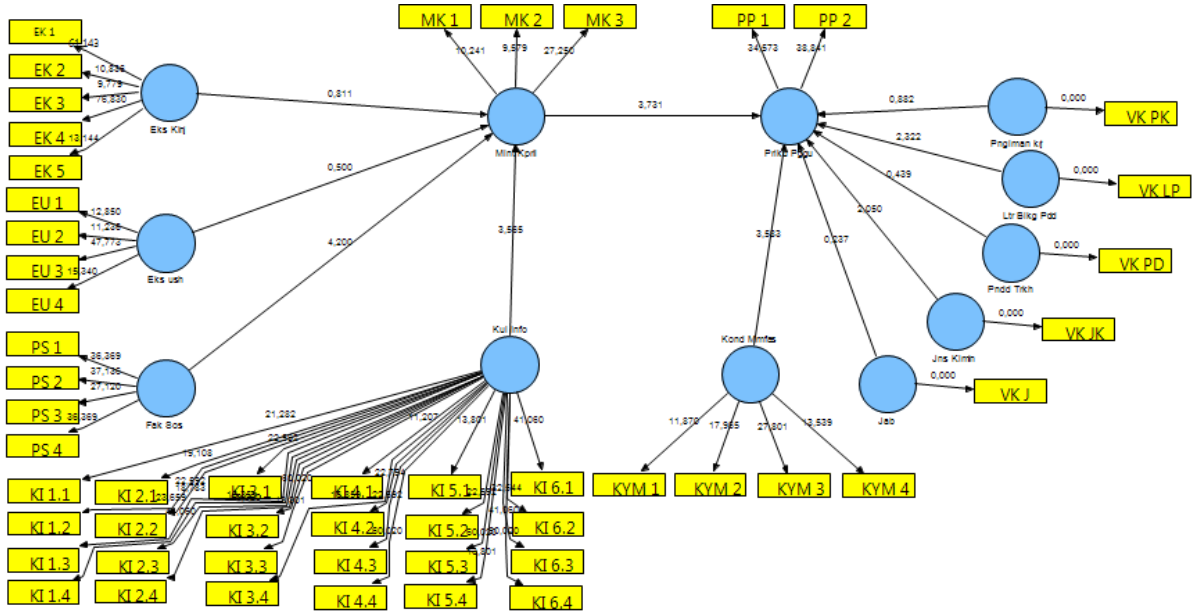

Figure 2
Output of Bootstrapping (T-Statistics Diagram)

Source: Processed data.

Table 2
Algorithm

	Original Sample (O)	Sample Mean (M)	Std. Deviation (STDEV)	Std. Error (STERR)	T-Statistics (|O/STERR|)	T-Tabel
H1 = EK -> MK	0.225	0.254	0.389	0.389	0.811	1.645
H2 = EU -> MK	-0.197	-0.133	0.394	0.394	0.500	1.645
H3 = PS -> MK	0.381	0.384	0.090	0.090	4.200	1.645
H4 = KI -> MK	0.301	0.300	0.084	0.084	3.564	1.645
H5 = KYM -> PP	0.373	0.387	0.107	0.107	3.582	1.645
H6 = MK -> PP	0.367	0.369	0.098	0.098	3.730	1.645
VK J -> PP	0.025	0.026	0.107	0.107	0.236	1.645
VK JK -> PP	0.371	0.389	0.283	0.283	2.049	1.645
VK LBP -> PP	-0.669	-0.677	0.288	0.288	2.322	1.645
VK PDT -> PP	-0.105	-0.091	0.241	0.241	0.439	1.645
VK PK -> PP	0.154	0.155	0.174	0.174	0.881	1.645

Source: Processed data.
Description: EK: Performance Expectation, EU: Business Expectation PS: Social Expectation; KI: Information Quality; KYM: facilitation Condition; MK: Behavioral Intention; PP: User behavior; VK: Control variables (J: Position; JK: Sex; PDT: Latest Education Level; LBP: Education background; PK: Work experience.

that will help individual to improve performance on his job is not appropriate to be applied and not yet fully capable of being operated by the company comprehensively in improving and creating individual performance. Therefore, the individual has not felt the benefits of the system. The researcher states that the manager intention to use the ABC system is not influenced by the individual performance expectancy. So, performance expectancy is not a major influence on the manager intention to adopt ABC system.

Hypothesis 2 (H_2) states that effort expectancy has positive effect on behavioral intention to adopt ABC system. The results of data processing in algorithm table show that effort expectancy has negative effect on behavioral intention as indicated by the original sample estimate value of (-0.197), with t-statistic value of 0.500, and t-table value of 1.645. So, hypothesis 2 (H_2) is rejected, because t-statistic value is smaller than t-table value. This result is consistent with the result of the study by Lee et al. (2010), but in a different context it is not consistent with the studies by Al-Gahtani et al. (2007), Alshehri et al. (2012) and Baridwan (2012).

Table 3
Results of Validity and Reliability Test (I)

	AVE	Communality	Cronbachs Alpha	Composite Reliability	R Square
EK	0.676	0.676	0.877	0.911	
EU	0.645	0.645	0.817	0.878	
PS	0.603	0.603	0.788	0.858	
KI	0.466	0.466	0.969	0.972	
KYM	0.640	0.640	0.817	0.876	
MK	0.636	0.636	0.717	0.839	0.390
PP	0.688	0.688	0.750	0.815	0.162
CV J	1.000	1.000	1.000	1.000	
CV JK	1.000	1.000	1.000	1.000	
CV PDT	1.000	1.000	1.000	1.000	
CV LBP	1.000	1.100	1.000	1.000	
CV PK	1.000	1.100	1.000	1.000	

Source: Processed data.
Description: EK: Performance Expectation, EU: Business Expectation PS: Social Expectation; KI: Information Quality; KYM: facilitation Condition; MK: Behavioral Intention; PP: User behavior; VK: Control variables (J: Position; JK: Sex; PDT: Latest Education Level; LBP: Education background; PK: Work experience.

Table 4
Algorithm (II)

	AVE	Communality	Cronbachs Alpha	Composite Reliability	R Square
EK	0.673	0.673	0.875	0.910	
EU	0.646	0.643	0.816	0.879	
PS	0.793	0.793	0.912	0.938	
KI	0.732	0.732	0.983	0.984	
KYM	0.646	0.646	0.816	0.879	
MK	0.614	0.614	0.691	0.826	0.424
PP	0.817	0.817	0.776	0.899	0.383
CV J	1.000	1.000	1.000	1.000	
CV JK	1.000	1.000	1.000	1.000	
CV PDT	1.000	1.000	1.000	1.000	
CV LBP	1.000	1.000	1.100	1.000	
CV PK	1.000	1.000	1.100	1.000	

Source: Processed data.
Description: EK: Performance Expectation, EU: Business Expectation PS: Social Expectation; KI: Information Quality; KYM: facilitation Condition; MK: Behavioral Intention; PP: User behavior; VK: Control variables (J: Position; JK: Sex; PDT: Latest Education Level; LBP: Education background; PK: Work experience.

The rejection of hypothesis 2 (H_2) indicates that the effort expectancy does not provide relevant support to the adoption of the ABC system in a company, because the effort expectancy is not an important construct in determining the changes in individual intention to promote the ABC system (Lee et al. 2010). However, in contrast to the studies conducted by Al-Gahtani et al. (2007), Alshehri et al. (2012) and Baridwan (2012) which stated that the effort expectancy has positive effect on behavioral intention.

Hypothesis 3 (H_3) states that social influence has positive effect on behavioral intention to adopt ABC system. The results of data processing in algorithm table show that social factor has positive effect on behavioral intention as indicated by the original sample estimate value of 0.381, with t-statistic value of 4.200, and t-table value of 1.645. So, hypothesis 3 (H_3) is accepted because t-statistic value is greater than t-table value. This study is consistent with the studies conducted by Bandyopadhyay and Fraccastoro (2007), Shanab and Pearson (2009), and Lee et al. (2010), but it is not consistent with the study by Alshehri et al. (2012).

This study proved that an individual has the belief that the presence of others will affect him to adopt ABC system. The individual will tend to use the ABC system if the other individuals he considers important also use the system. Thus, the top level management, as the decision makers, can take advantage of the influence of social factors in order to implement the ABC systems in the company.

When individuals (workers) know and are familiar with the ABC system, they will tend to invite other individuals to use the system. Thus, the implementation of ABC system is potentially increasing.

Hypothesis 4 (H_4) states that information quality has positive effect on behavioral intention to adopt ABC system. The results of data processing in algorithms table show that information quality has positive effect on behavioral intention as indicated by the original sample estimate valued of 0.301, with t-statistic value of 3.564 and t-table value of 1.645. So, Hypothesis 4 (H_4) is accepted because t-statistic value is higher than t-table value. This empirical evidence is not consistent with the results of the study conducted by Petter and McLean (2009).

This study proves that ABC system, which is designed by analysts and system developers, makes every effort to provide information to individuals related to complete, precise, accurate, consistent, up to date, and beautiful information. The information quality provides support to the implementation of ABC system in the company. The information quality provided by the ABC system has the advantage of both short-term and long-term and gives a positive reaction to the market. The benefits received can be used to make improvements continually. As a result, in the long term the company's operations are relatively more secure.

Hypothesis 5 (H_5) states that facilitating condition has positive effect on use behavior to adopt ABC system. The results of data processing in algorithm table show that facilitating condition has positive effect on use behavior as indicated by the original sample estimate value of 0.373, with t-statistic value of 3.582 and t-table value of 1.645. So, hypothesis 5 (H5) is accepted because t-statistic value is greater than t-table value. This study is consistent with the studies conducted by Venkatesh et al. (2003), Lee et al. (2010), and Alshehri et al. (2012).

The results showed that in the use of ABC information, an individual requires support facilities, which emphasizes more on the individual's knowledge of ABC system implemented. Then it emphasizes on the assistance when the individual is experiencing difficulties in using the ABC system. Therefore, the company management should provide resources or all supporting facilities to use technology-based accounting information system (Wang and Shih 2009). First, the hardware used is an adequate hardware and follow the latest technological developments. The company should have integrated technology between departments because the activities of each department in the company are interrelated, rather than a separate activity. Second, the individual, as the user of the technology-based accounting information systems, should be equipped with enough knowledge by the company's management by conducting training. Third, the need for individuals who are experts in the technology and all the time ready to help those who uses the technology-based systems when they are experiencing difficulties or errors (Venkatesh et al. 2003).

Hypothesis 6 (H_6) states that behavioral intention has positive effect on use behavior to adopt ABC system. The results of data processing in algorithm table show that behavioral intention has positive effect on use behavior as indicated by the original sample estimate value of 0.367, with t-statistic value of 3.730 and t-table value of 1.645. So, hypothesis 6 (H_6) is accepted because t-statistic value is greater than t-table value (3.730> 1.645). This study is consistent with the studies conducted by Venkatesh et al. (2003), Al-Gahtani (2007) and Lee et al. (2010).

This study found the evidence that behavioral intention is a determinant factor of the user behavior. And the intention affects the real action because intention has a strong correlation with the real action. The intention to use the ABC system has been recommended also by mid-level management to other parties in order to use ABC system. The results of this study also show that due to the motivation and intention, the mid-level management often uses the ABC system in daily working hours. It means that the ABC system really supports the manual activities of the mid-level management, so that the mid-level management can run with the company's operational activities well.

Testing Using Control Variable

Testing using control variable of job position shows that job position has positive effect on use behavior as indicated by the original sample estimate value of 0.025, with t-statistic value of 0.236 and t-table value of 1.645. So, it can be concluded that job position does not affect use behavior to adopt ABC system because the t-statistic value is smaller than t-table value (0.236 < 1.645). Job position has no effect on use behavior because not all positions know and understand how to apply the ABC system. Difficulty in use may be a major factor for individual failure to operate and understand this system. So, training for every individual is badly required before applying the system in the company.

The testing using control variable of gender

shows that gender has positive effect on use behavior as indicated by the original sample estimate value of 0.371, with t-statistic value of 2.049, and t-table value of 1.645. So, it can be concluded that gender (male/female) affects the use behavior to adopt ABC system because the t-statistic value is smaller than t-table value (2.049> 1.645). It means that gender (male/female) can increase the desire of use behavior to adopt ABC system. So it is assumed that there is no difference in orientation between man and woman. Man and woman have the same role to succeed the adoption of ABC system in the company.

Testing using control variable of the latest education shows that the latest education has negative effect on use behavior as indicated by the original sample estimate value of -0.105, with t-statistic value of 0.439, and t-table value of 1.645. So, it can be concluded that the latest education does not affect the use behavior to adopt ABC system because the t-statistic value is smaller than t-table value (0.439 < 1.645). Latest education has no effect on use behavior because in applying ABC system requires not only theory, but also ability to operate it. So, even though the individual has enough education, if he does not have the ability (not trained), he will get difficulty in applying the ABC system.

Testing using control variable of educational background shows that educational background has negative effect on use behavior as indicated by the original sample estimate value of -0.669, with t-statistic values of 2.322, and t-table value of 1.645. It means that educational background may increase the desire of use behavior to adopt ABC system. It is assumed that the individuals who have different educational background will provide important resources to the company even though the educational background of each individual is different. It is possible that they have the knowledge needed by the company related to the application of ABC system. It can be indicated that the individual has the ability to assess or understand the use of the ABC system. It greatly helps individuals make the decision to adopt this system in the company.

Testing using control variable of work experience shows that wok experience has positive effect on use behavior as indicated by the original sample estimate value of 0.154, with t-statistic value of 0.881, and t-table value of 1.645. So it can be concluded that work experience does not affect the use behavior to adopt ABC system because the t-statistic value is smaller than t-table value (0.881 < 1.645). Work experience has no effect on use behavior because the higher the work experience does not mean the better the experience of the individual to operate a system. The level of difficulty on the use of the ABC system affects the individual in the application of this system.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

It can be generally concluded that the adoption of ABC system is influenced by two factors: human and technology. Technology serves as the support in the operation of the system, while human serves as the designers and users of the system, so there must be a balance between technology and the ability of the individuals. The success of the adoption of the ABC system indicates that the individuals will accept this system well and have a positive influence on the performance of the organization if the ABC system adopted can improve the performance of individuals, is clear and easy to operate, has strong social influences, and has adequate support facilities.

In detail, the results show that; first, the behavioral intention of individual to adopt ABC system is determined by the influence of social factors and information quality. In this study, the influence of social factors has more dominant influence on behavioral intention than the construct of information quality. The influence of social factors affects behavioral intention due to the individual's belief that the presence of other people affects them to adopt ABC system and the individual will tend to use the ABC system if the other individuals he considered important also use the system; second, the use behavior to adopt ABC system is determined by the facilitating conditions and behavioral intention. So, facilitating conditions and behavioral intention are determinant for the use behavior of mid-level management to use the ABC system in manufacturing companies in East Java. This means that the construct is able to predict and explain the use behavior of mid-level management to adopt ABC system; third, this study does not manage to prove that behavioral intention is influenced by performance expectancy and effort expectancy.

The empirical evidences of this study have implications that the results of the study propose a theoretical framework for future researches concerning management accounting innovations in which the perspective of acceptance of information technology plays a very important role in adopting ABC systems in manufacturing companies in East Java. In addition, this study also gives an input to the companies that top level management and mid-level management have an interest in using the

ABC system. Therefore, before deciding to adopt the ABC system, the companies should emphasize more on the readiness of the employees, improve the employee performance, and provide supporting environment and facilities needed by the employees. Then, the employees will be better prepared to accept such system, and thus improving the efficiency and effectiveness of individuals in operating system ABC.

The researchers suggest that further researchers should do as follows: First, further researches can be focused on the exploration of constructs that affect the application ABC system from the perspective of acceptance and the use of information technology. Second, further researches can expand the research objects and not only focus on manufacturing companies in East Java, which is expected to increase the number of companies who are willing to be the object of research. Third, further researchers should ensure that the questionnaire is by the respondents concerned, and the respondents understand the meaning of the instrument as a whole. Through these actions, it is expected to reduce bias that possibly occurs in the answers of the questionnaires distributed.

This study has several limitations, among others are: First, inadequate number of companies that are willing to be the object of this study, so that there are only 32 manufacturing companies in East Java. Second, this study uses convenience sampling method, even though this method is known to have limitations in generalization and inference of all samples. Third, the questionnaires returned by the respondents sometimes have the answers that do not show the real situation, so that it could cause bias.

REFERENCES

Ajzen, I and Fishbein, M 1980, *Understanding Attitude and Predicting social behavior*, Prentice-hall, Englewood, Cliffs, NJ.

Al-Gahtani, S, S, Hubona, G and Wang, J 2007, 'Information Technology (IT) in Saudi Arabia: Culture and The Acceptance and Use of IT', *Information & Management*, 44, 681-691.

Alshehri, Mohammed, Steve Drew, Thamer Alhussain and Rayed Al-Ghamdi, 2012, 'The Effects of Website Quality on Adoption of E-Government Service: An Empirical Study Applying UTAUT Model Using SEM', *23rd Australasian Conference On Information Systems 3-5 Dec 2012*, Geelong.

Bandyopadhyay, K and Fraccastoro, KA 2007, 'The Effect of Culture on User Acceptance of Information Technology', *Communications of the Association for Information Systems,* Vol. 19, 522-543.

Baridwan, Zaki, 2012, 'Analisis Keperilakuan Individu Terhadap Implementasi sistem Informasi Akuntansi: Model Penerimaan dan Kesuksesan Sistem Informasi Berbasis Teknologi', PhD Thesis, Program Doktor Ilmu Akuntansi, Program Pascasarjana Fakultas Ekonomi dan Bisnis Universitas Brawijaya.

Blocher, S and Cokins, Chen 2008, *Cost Management, A Strategic Emphasis 4th edition*, McGraw Hill, USA, p. 120.

Chen, C, Wu, J and Yang, SC 2008, 'Accelerating the Use of Weblogs as an Alternative Method to Deliver Case-Based Learning', *International JI, On E-Learning,* Vol. 7 no. 2, pp. 331-349.

DeLone, WH and McLean, ER 1992', Information Systems Success: The Quest for Dependent Variable', *Information Systems Research*, 60-95.

DeLone, WH and McLean, ER 2003, 'The DeLone and McLean Model of Information Systems Success: A Ten-Year Update', *Journal of Management Information Systems* (19:4), 9-30.

Hartono, J and Abdillah, W 2009, *Konsep & aplikasi PLS (Partial Least square) untuk Penelitian Empiris*, Yogyakarta: BPFE.

Hartono, J 2013, *Pedoman Survei Kuisioner: Mengembangkan Kuisioner, Mengatasi Bias, dan Meningkatkan Respon*, Second Edition, Yogyakarta: BPFE.

Hilton, RW, Michael, MW, and Frank, SH 2003, *Cost Management: Strategies for Business Decisions,* New York: The McGraw Hill Companies Inc.

Im, I, Hong, S and Kang, MS 2011, 'An International Comparison of Technology Adoption Testing The UTAUT Model', *Information & Management* 48, 1–8.

Kijsanayotin, B, Pannarunothai, S and Speedie, SM 2009, 'Factors Influencing Health Information Technology Adoption in Thailand's Community Health Centers: Applying The UTAUT Model', *International Journal of Medical Informatics*, 78, 404-416.

Lee, Chia Ling, David C Yen, Kai Chun Peng and Hsu Che Wu, (2010), 'The influence of change agents behavioral intention on the usage of the activity based costing/management system and firm performance: The perspective of unified theory of acceptance and use of technology', *International Journal of Accounting,* 26 (10), 314–324.

McLeoad, A, Pippin, S and Mason, R 2009, 'Indi-

vidual Taxpayer Intention to Use Tax Preparation Software: Examining Experience, Trust, and Perceived Risk', *Journal of Information Science and Technology*, 6, 213-232.

Nair, Mohan, 2002, *Sistem Informasi Berbasis Aktivitas*, Salemba Empat, Jakarta.

Petter, S and McLean, ER 2009, 'A Meta-Analytic Assesment of The Delone and McLean IS Success Model: An Examination of IS Success at the Individual Level', *Information and Management,* 46, 159-166.

Schaper, LK and Pervan, GP 2007, 'ICT and OTs: A Model of Information and Communication Technology Acceptance and utilization by Occupational Therapist', *International Journal of Medical Information*, 76S, 212-221.

Shanab, EA and Pearson, M 2009, 'Internet Banking in Jordan: An Arabic Instrument Validation Process', *The International Arab Journal of Information Technology*, Vol. 6 No. 3, 231-253.

Shin, DH 2010, 'MVNO Services: Policy Implications for Promoting MVNO Diffusion', *Telecommunications Policy*, 423-451.

Stevenson, TH, Barnes, FC and Stevenson, SA 1993, 'Activity based costing: An emerging tool for industrial marketing decision maker', *The Journal of Business and Industrial Marketing*, Vol. 8 no 2, pp. 40−52.

Tibenderana, P 2010, 'Measuring level of End Users' and Use of Hybrid Library Services', *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, Vol. 6,issue 2, pp. 91-125.

Venkatesh, V, Moris, MG, Davis, GB and Davis, FD 2003, 'User Acceptance of Information Technology: Toward a Unified View', *MIS Quarterly*, Vol.27, No.3, September, 425-478.

Venkatesh, V and Zhang, X 2010, 'Unified Theory of Acceptance and Use of Technology: US vs. China', *Journal of Global Information Technology Management*, 5-27.

Wang, YS and Shih, YW 2009, 'Why do People Use Information Kiosks? A Validation of The Unified Theory of Acceptance and Use of Technology', *Government Information Quarterly*, 26, 158-165.

APPENDICES

Table 5
Results of Cross Loading

	EK	EU	PS	KI	KYM	MK	PP	J	JK	PDT	LBP	PK
EK 1	0.932	0.898	0.652	0.354	0.867	0.474	0.408	-0.080	0.229	0.213	0.247	0.186
EK 2	0.700	0.746	0.403	0.245	0.755	0.347	0.368	0.022	0.095	0.139	0.152	0.022
EK 3	0.712	0.721	0.472	0.154	0.767	0.267	0.400	0.159	0.114	0.103	0.165	0.035
EK 4	0.943	0.877	0.644	0.324	0.852	0.482	0.414	-0.049	0.193	0.181	0.213	0.129
EK 5	0.782	0.777	0.444	0.278	0.759	0.309	0.356	-0.113	0.170	0.157	0.208	0.064
EU 1	0.701	0.746	0.403	0.245	0.755	0.347	0.368	0.022	0.095	0.139	0.152	0.022
EU 2	0.721	0.761	0.481	0.162	0.812	0.297	0.450	0.149	0.127	0.115	0.177	0.055
EU 3	0.932	0.897	0.652	0.354	0.867	0.474	0.408	-0.080	0.229	0.213	0.247	0.186
EU 4	0.765	0.800	0.471	0.354	0.776	0.333	0.349	-0.149	0.211	0.194	0.247	0.129
PS 1	0.577	0.572	0.900	0.328	0.567	0.512	0.395	-0.006	0.279	0.285	0.320	0.199
PS 2	0.597	0.581	0.893	0.332	0.569	0.507	0.265	-0.111	0.195	0.209	0.222	0.106
PS 3	0.565	0.541	0.867	0.360	0.529	0.521	0.259	-0.073	0.209	0.221	0.234	0.126
PS 4	0.577	0.572	0.901	0.328	0.567	0.512	0.395	-0.006	0.279	0.285	0.320	0.199
KI 1.1	0.178	0.196	0.232	0.857	0.191	0.394	0.309	-0.020	0.154	0.216	0.198	0.126
KI 1.2	0.232	0.267	0.217	0.872	0.266	0.369	0.307	0.012	0.128	0.181	0.184	0.083
KI 1.3	0.232	0.250	0.315	0.840	0.246	0.378	0.318	0.024	0.167	0.220	0.209	0.147
KI 1.4	0.234	0.267	0.270	0.916	0.262	0.396	0.309	-0.020	0.154	0.213	0.198	0.098
KI 2.1	0.303	0.292	0.401	0.788	0.269	0.456	0.094	-0.004	0.263	0.317	0.326	0.178
KI 2.2	0.328	0.322	0.448	0.814	0.299	0.497	0.136	-0.041	0.251	0.305	0.314	0.159
KI 2.3	0.340	0.335	0.437	0.775	0.313	0.467	0.076	-0.148	0.214	0.271	0.278	0.105
KI 2.4	0.286	0.312	0.260	0.946	0.300	0.369	0.265	0.045	0.205	0.253	0.244	0.181
KI 3.1	0.328	0.322	0.448	0.824	0.291	0.497	0.136	-0.041	0.251	0.305	0.314	0.159
KI 3.2	0.286	0.312	0.260	0.944	0.300	0.369	0.265	0.045	0.205	0.253	0.244	0.181
KI 3.3	0.332	0.342	0.333	0.766	0.323	0.329	0.264	-0.030	0.310	0.256	0.317	0.155
KI 3.4	0.225	0.244	0.218	0.813	0.232	0.358	0.183	0.022	0.128	0.176	0.158	0.111
KI 4.1	0.388	0.394	0.272	0.712	0.383	0.443	0.184	0.029	0.157	0.143	0.159	0.030
KI 4.2	0.197	0.215	0.239	0.869	0.210	0.378	0.318	0.024	0.167	0.220	0.209	0.147
KI 4.3	0.328	0.322	0.448	0.824	0.299	0.497	0.136	-0.041	0.251	0.305	0.314	0.159
KI 4.4	0.286	0.312	0.260	0.942	0.300	0.369	0.265	0.045	0.205	0.253	0.244	0.181
KI 5.1	0.332	0.342	0.333	0.776	0.323	0.329	0.264	-0.030	0.316	0.256	0.317	0.155
KI 5.2	0.328	0.322	0.448	0.834	0.299	0.497	0.136	-0.041	0.251	0.305	0.314	0.159
KI 5.3	0.286	0.312	0.260	0.952	0.300	0.369	0.265	0.045	0.205	0.253	0.244	0.181
KI 5.4	0.332	0.342	0.333	0.766	0.323	0.329	0.264	-0.030	0.312	0.256	0.317	0.155
KI 6.1	0.234	0.267	0.270	0.926	0.262	0.396	0.309	-0.020	0.154	0.212	0.198	0.098
KI 6.2	0.353	0.365	0.319	0.890	0.346	0.445	0.194	-0.085	0.024	0.121	0.117	-0.119
KI 6.3	0.234	0.260	0.270	0.906	0.262	0.396	0.309	-0.020	0.154	0.210	0.198	0.098
KI 6.4	0.286	0.312	0.260	0.942	0.301	0.369	0.265	0.045	0.205	0.253	0.244	0.181
KYM 1	0.701	0.746	0.403	0.245	0.755	0.347	0.368	0.022	0.095	0.139	0.152	0.022
KYM 2	0.721	0.762	0.481	0.162	0.812	0.297	0.450	0.149	0.127	0.115	0.177	0.055
KYM 3	0.932	0.898	0.652	0.354	0.867	0.474	0.408	-0.080	0.229	0.213	0.247	0.186
KYM 4	0.765	0.801	0.471	0.354	0.776	0.333	0.349	-0.149	0.211	0.194	0.247	0.129
MK 1	0.279	0.261	0.395	0.324	0.244	0.761	0.245	-0.045	0.181	0.288	0.276	0.098
MK 2	0.363	0.349	0.440	0.487	0.330	0.727	0.144	0.027	0.147	0.221	0.237	0.093
MK 3	0.446	0.446	0.508	0.349	0.447	0.858	0.578	0.125	0.185	0.239	0.235	0.178
PP 1	0.394	0.412	0.268	0.200	0.421	0.360	0.902	0.069	0.095	0.063	0.023	0.106
PP 2	0.455	0.465	0.399	0.277	0.471	0.455	0.905	0.075	0.266	0.174	0.185	0.159
VK J	-0.030	-0.030	-0.060	-0.020	-0.007	0.062	0.080	1.000	0.298	0.260	0.276	0.478
VK JK	0.202	0.212	0.270	0.233	0.204	0.218	0.163	0.298	1.000	0.871	0.925	0.836
VK PD	0.199	0.211	0.281	0.284	0.203	0.312	0.132	0.260	0.872	1.000	0.881	0.792
VK LP	0.243	0.260	0.308	0.289	0.255	0.312	0.116	0.276	0.926	0.881	1.000	0.789
VK PK	0.119	0.132	0.177	0.157	0.121	0.165	0.146	0.478	0.836	0.792	0.789	1.000

Source: Processed data.
Description: EK: Performance Expectation, EU: Business Expectation PS: Social Expectation; KI: Information Quality; KYM: facilitation Condition; MK: Behavioral Intention; PP: User behavior; VK: Control variables (J: Position; JK: Sex; PDT: Latest Education Level; LBP: Education background; PK: Work experience.

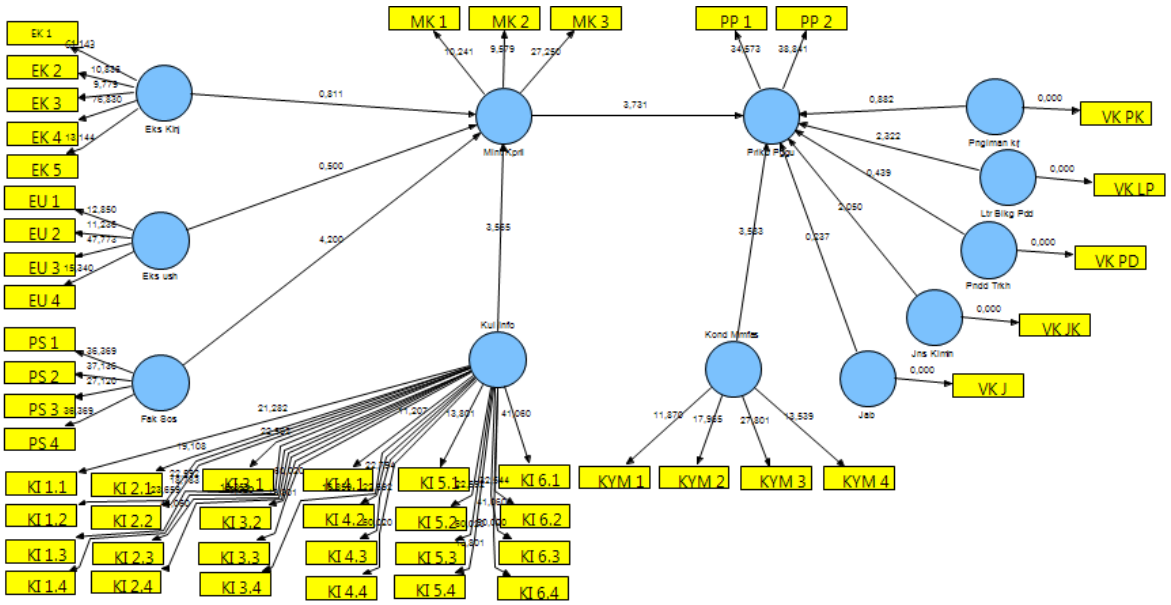

Figure 3
Results of Bootstrapping Output (Diagram of T-Statistics)

Table 6
Result Output Quality Criteria Overview Algorithm and Bootstrapping

	Original Sample (O)	Sample Mean (M)	Std. Deviation (STDEV)	Std. Error (STERR)	T-Statistics (|O/STERR|)	T-Tabel
H1 = EK -> MK	0.315	0.254	0.389	0.389	0.811	1.645
H2 = EU -> MK	-0.197	-0.133	0.394	0.394	0.500	1.645
H3 = PS -> MK	0.381	0.384	0.090	0.090	4.200	1.645
H4 = KI -> MK	0.301	0.300	0.084	0.084	3.564	1.645
H5 = KYM -> PP	0.373	0.387	0.107	0.107	3.582	1.645
H6 = MK -> PP	0.367	0.369	0.098	0.098	3.730	1.645
VK J -> PP	0.025	0.026	0.107	0.107	0.236	1.645
VK JK -> PP	0.371	0.389	0.283	0.283	2.049	1.645
VK LBP -> PP	-0.669	-0.677	0.288	0.288	2.322	1.645
VK PDT -> PP	-0.105	-0.091	0.241	0.241	0.439	1.645
VK PK -> PP	0.154	0.155	0.174	0.174	0.881	1.645

Source: Processed data.
Description: EK: Performance Expectation, EU: Business Expectation PS: Social Expectation; KI: Information Quality; KYM: facilitation Condition; MK: Behavioral Intention; PP: User behavior; VK: Control variables (J: Position; JK: Sex; PDT: Latest Education Level; LBP: Education background; PK: Work experience.