ANALYSIS OF USING ACCRUAL BASED ACCOUNTING SYSTEM BY THE THEORETICAL APPROACH OF TECHNOLOGY ACCEPTANCE MODEL 3: AN EMPIRICAL STUDY IN INDONESIA

Dona Primasari¹, Abdul Rohman², Fuad³

¹ The lecturer of Economics and Business Faculty of Diponegoro University Semarang, Indonesia
² The lecturer of Economics and Business Faculty of Diponegoro University Semarang, Indonesia
³ The lecturer of Economics and Business Faculty of Diponegoro University Semarang, Indonesia

I. BACKGROUND OF STUDY

The phenomenon in Indonesia shows that the Indonesian government has not fully implemented the accrual based accounting system. It can be seen based on the data obtained at the State Audit Board (BPK) 2015 through the website www.bpk.go.id. Currently the government has not been able to fully implement the accrual based accounting system and still use the accounting system based on the Government Regulation (PP) No. 24 of 2005 which is the cash toward accrual. This condition can be seen from the government budget report that still uses cash-based budget accounting.

Based on these data, they show that the government is not ready to implement accrual based accounting system. This concern raises lots of questions for the people about the challenge and the obstacles in the process of implementing the accrual based accounting system as mandated by the Government Regulation (PP) No. 71 of 2010. Faradila’s research results (2014) prove that the classic problem that arises in the implementation of Government Accounting Standards (SAP) is in the incompetent human resources and they tend to be resistant to change.

The initial survey conducted by Simanjuntak (2010) and Bastian (2006) found that there are some obstacles faced related to the application of accrual-based accounting in Indonesian government, such as the complexity of the accrual-based accounting implementation that requires more complex accounting systems and IT-based systems. The implementation of this new system tends to confuse the employees.

This condition deals with the statement of Compeau and Higgins (1995) states that critical stages in the application of an information technology are the condition in which the presence of the system is accepted or rejected by the users. This adaptation process is delayed because of the tendency of differences in perceptions about the benefits and the ease of new systems to operate. It looks from the tendency of some employees to adapt very hard to the new system. The different perceptions about the benefits and the
ease of the new system deal with the concept of theory acceptance model (TAM).

According to the concept of TAM, someone will use a system if he sees the benefits that will be generated if he uses the system, and sees the ease of operating the system. The initial perception of the difficulty of adaptation to the new system and the confusion arising in the environment of the employees deals with the theory of TAM and it is delivered by Venkatesh and Davis (2000).

According to Venkatesh and Davis (2000) recently TAM is the best concept in explaining the behavior of users of the new information system. Furthermore, TAM is empirically shown to explain 40% usage of intentions and behavior. Based on the above, there must be a comprehensive study using TAM concept. It is required to provide strong and empirical evidence for the various factors causing the difficult application of accrual-based accounting in the government environment in Indonesia. Anyway, this kind of research can contribute to the development of new system in the government environment, especially in the Indonesia government sector.

This research is a research using Theory Acceptance Model 3 that has not been widely used in research both at home and abroad. The originality lies in the application of TAM 3 on the implementation of accrual-based accounting systems as a form of development from researches conducted in the government sector using only the initial concept of TAM and TAM 2.

II. LITERATURE REVIEW

2.1. Technology Acceptance Model (TAM 3)

The TAM model is actually adopted from the TRA (Theory of Reasoned Action) model. It was first developed by Fishbein and Ajzen in 1980, the theory of action with the premise that one's reaction and perception of something will determine the person's attitude and behavior. TAM has two sides: the first is beliefs that consist of perceived usefulness and perceived ease-of-use and the second is attitude, behavior intention to use and usage behavior (Straub, Limayen, Evaristo, 1995 in Petra, 2005). TAM describes the relationship between beliefs (usefulness and ease of use) and attitude, user intentions, and real use of the system.

After the first version of TAM and TAM 2, Venkatesh and Bala form TAM 3 by adding variables that include the adjustment and anchor groups that are associated with the variables of perceived ease of use.

2.2. Implementation of accrual based accounting system in Indonesia

Implementation of accrual based accounting system in Indonesia has begun to be implemented in stages. Government Accounting is begun to apply for the preparation of accountability report implementation of APBN / APBD Fiscal Year 2005. Based on the data from bpk.go.id, it is known that so far, local government has not used the accrual based accounting standards yet, even some areas are still in the socialization stage of the Government Regulation (PP) No.71 of 2010. Generally, the reason for the obstacles in implementing the accrual based accounting system is the lack of local government environment in facing the accrual based system, both from human resources and technology system in local government (Amelia, 2015).
Theoretical Model

The population of this study was the Regional Team Work Unit (SKPD). The unit of analysis referred to the local government apparatus involved in the use of an accrual based accounting system in accordance with the Government Regulation (PP) No.8 in 2006 Article 10. It explains that the Head of the Regional Team Work Unit is involved in the use of the implementation of the accrual based accounting system. Determination technique of sample in this research used random sampling technique. Random sampling/ sampling probability sampling technique is a sampling method that gives the same opportunity to every element of the population.

Hypothesis testing was done by SEM (Structural Equation Modeling) with AMOS (Analysis of
Moment Structure) software. The use of SEM in this research was based on the structure of relationship between variables in the complex TAM, so that the use of other analytical tools such as regression would complicate the analysis process.

IV. RESULTS AND DISCUSSIONS

4.1. Details of Questionnaires Return

Questionnaires were distributed by the way of postal services and delivered directly to the respondents. The questionnaire was then taken back as the deal with the promise agreed to the respondent. It needed three months for the data collection, starting from September 1st, 2016 to December 1st, 2016. There were 511 questionnaires distributed and 358 questionnaires returned, with a rate response rate 70.0%. 13 questionnaires could not be included in the analysis because of incomplete fillings. Therefore the amount of data that could be processed for analysis was 345 questionnaires. The data would be presented completely in the table 4.2:

4.2. Hypothesis Testing Results

Picture 1. Full model structural
Table 1
Summary of the estimation of Path Coefficient and Statistical Test (Standardized)

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>C.R</th>
<th>P</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Subjective norm is related to perceived usefulness</td>
<td>1.816</td>
<td>0.069</td>
<td>Not significant</td>
</tr>
<tr>
<td>H2: Image is positively related to perceived usefulness</td>
<td>1.449</td>
<td>0.147</td>
<td>Not significant</td>
</tr>
<tr>
<td>H3: Job relevance is positively related to perceived usefulness</td>
<td>0.286</td>
<td>0.775</td>
<td>Not significant</td>
</tr>
<tr>
<td>H4: Output quality is positively related to perceived usefulness</td>
<td>0.462</td>
<td>0.144</td>
<td>Not significant</td>
</tr>
<tr>
<td>H5: Result demonstrability is positively related to perceived usefulness</td>
<td>3.610</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>H6: Computer self efficacy is positively related to perceived ease of use</td>
<td>2.387</td>
<td>0.017</td>
<td>Significant</td>
</tr>
<tr>
<td>H7: Perception of external control is related to perceived ease of use</td>
<td>3.824</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>H8: Computer anxiety is negatively related to perceived ease of use</td>
<td>1.988</td>
<td>0.047</td>
<td>Significant</td>
</tr>
<tr>
<td>H9: Computer playfulness is positively related to perceived ease of use</td>
<td>1.061</td>
<td>0.289</td>
<td>Not significant</td>
</tr>
<tr>
<td>Perceived enjoyment is positively related to perceived ease of use</td>
<td>0.171</td>
<td>0.864</td>
<td>Not significant</td>
</tr>
<tr>
<td>H11: Objective usability is related to perceived ease of use</td>
<td>3.201</td>
<td>0.001</td>
<td>Significant</td>
</tr>
<tr>
<td>H12: Perceived ease of use is positively related to perceived usefulness</td>
<td>5.205</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Perceived usefulness is positively related to behavioral intention to use</td>
<td>3.397</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>C.R</td>
<td>P</td>
<td>Note</td>
</tr>
<tr>
<td>Perceived ease of use is positively related to behavioral intention to use</td>
<td>0.442</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>H15: Behavioral intention to use is positively related to use behavior</td>
<td>7.690</td>
<td>0.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Primary Data processed, 2017
4.3. Discussion of Hypothesis Test Results

Analysis of Subjective Norm effect toward Perceived Usefulness

The result of hypothesis testing indicated that subjective norm had no effect toward perceived usefulness. The results of this study did not support the results of the previous research conducted by Venkatesh and Bala (2008), Paramita (2012) which proved that subjective norms and images were positive with perceived usefulness. However, the results of this study supported the research conducted by George (2004) and Llin (2008) which showed no effect between subjective norms toward the interest of system usage. 

The difference in this study appears because subjective norm is not a major factor in determining an interest to use accrual based accounting system. Based on the field research, it is found that the dominant supporting factor in the acceptance of system implementation is environmental factor in the government institution. The development of system and technology by over the time demands the mindset and work processes of individual users of the system. Environmental conditions in the government sector tend to be less concerned about the rules and the norms to try and use the new system.

Analysis of Image effect toward Perceived Usefulness

The results showed that image had no effect toward perceived usefulness. The results of this study did not support the findings of the research conducted by Venkanteesh and Bala (2008), Paramita (2014), Putra (2014). However it dealt with the opinion by Setiadji (2014) that image variable was not able to explain the perception of the benefits of system acceptance. Image variable was the degree that the use of an information technology was perceived to improve one’s status in society (Venkantesh, 2008).

However, it has no deal with the conditions in government agencies regarding the implementation of accrual based accounting system. The implementation of accrual based accounting system is regulated in legislation. The implementation is mandated and must be implemented in the government operational activities, especially in the process of recording and financial reporting. The explanation of image variables shows that the use of information technology only to improve one’s status in society certainly doesn’t deal with the concept of the use of accrual-based accounting system that aims to create accurate and transparent financial statements in order to be accountable to the parties in need.

Analysis of Job Relevance effect toward Perceived Usefulness

Hypothesis testing showed that job relevance was not related to perceived usefulness. The results of this study did not support the results of the research conducted by Ramazani (2012). The results of this study appeared because of the differences of the respondents perceptions.

The respondents who have knowledge of accrual based accounting system but they have not come into direct contact with the system, tend to be pessimistic. They cannot think that implementation of accrual based accounting system will give positive effect to their work process. It can also be seen from the respondent's answers to the influence of job relevance. They are in the level of "enough" or at the limit of the average threshold.
Analysis of Output Quality effect toward Perceived Usefulness

The fourth hypothesis was tested to determine the effect of output quality toward perceived usefulness, was rejected. These findings were different to the previous research from Venkatesh (2008), Paramita (2012) and Lee (2012) who suggested that output quality had a significant relationship to perceived usefulness. Output quality was defined to measure how an individual believed that a system would help their work and produced good quality.

The answers of employee perceptions are high to the implementation of accrual-based accounting system, however it doesn’t support the improvement of perception of the system benefits because employees of government agencies don’t tend to stand for the end result of the work assisted by the system. In fact, accrual based accounting system will produce transparent and accountable financial reports. It occurs because employees have not seen significantly the benefits resulting from the use of an accrual based accounting system. Even though their initial stages have used the accrual based accounting system but the result of financial reports are still included in the fair criteria with the exception or unfair.

Analysis of Result Demonstrability effect toward Perceived Usefulness

The fifth hypothesis tested was the effect of Result Demonstrability (RD) toward Perceived Usefulness (PU). The result of hypothesis test showed that Result Demonstrability had significant influence to Perceived Usefulness. The results of this study supported the previous research Venkatesh (2008), Winarko (2003) and Marini (2003). This finding supported TAM's theory of the aspect of result demonstrability which assumed that the result demonstrability was the tangibility of the result using innovation that influenced the perception of the use of the system.

The results of this study also show that employees have a positive assumption toward the implementation of accrual based accounting system, where the results of using accrual-based accounting system can be felt directly, observed and disseminated to other parties.

Analysis of Computer Self Efficacy effect toward Perceived Ease of Use

Based on the hypothesis test results, it was obtained that the magnitude of the effect of computer self-efficacy toward perceived ease of use had a positive path coefficient 0.148. It meant that if the computer self efficacy increased, perceived ease of use would also increase. These findings supported the previous studies of Shrgill (2005), Princess (2003) and Berlilance (2015). These findings provided a support to TAM theory that proved that computer self-efficacy was intrinsic motivation. Self efficacy was proven to motivate positively to the employees in the stage of acceptance of the use of the accrual-based system implementation. According Agarwal et.al (2000) the concept of self-efficacy computer was one variable that was very important in assessing the behavior of individuals in the field of information technology. Computer self efficacy was defined as the judgment of a person’s ability to perform their tasks related to information technology (Compeau and Higgins, 1995).

The results of this study also support the theory by Bandura (1995) that he has the ability to perform certain behaviors because of the confidence. They will have a positive impact toward the perceptions of acceptance of the new system implementation. Furthermore, Compeau and Higgins (1995) in Rustina (2004) explains that computer self efficacy consists of 3 (three) determinants are: (1)
encouragement from other party (2) other party as user and (3) support. These theories deal with the results of research that describe the real conditions in the government environment. The emotional motivation in the form of employee confidence in their ability to use the implementation of accrual-based accounting system, as well as other determinants such as superiors support, facility support will have a positive impact for perceived ease of use toward accrual-based accounting system.

**Analysis of Perception of External Control effect toward Perceived Ease of Use**

Based on the hypothesis testing, it showed that the relationship of perception of external control to perceived ease of use had coefficient value path 0.402. The path coefficient had a positive sign. It meant that if the perception of external control increased, perceived ease of use would increase. It showed that perception of external control had a positive effect toward perceived ease of use. This finding supported the results of the previous research by Venkanteesh (2008), Schillwat (2000). This finding also supported TAM's theory that perception of external control was a control to measure an individual believed that the existing organizational and technical resources would support for system usage.

Based on the field situation it is found that most of the employees in government agencies have been facilitated with adequate hardware. Another thing that also supports the employees, they receive accrual-based accounting training and socialization from the experienced experts so that the employees have confidence in their ability. These factors are the decisive factors that affect employee perceptions about the ease of a system.

**Analysis of Computer Anxiety effect toward Perceived Ease of Use**

Based on the statistical test, the results of hypothesis testing showed that the computer anxiety relationship to perceived ease of use had a coefficient value 0.121 with p value 0.047. The path coefficient had a positive sign that if computer anxiety increased, perceived ease of use would increase. This proved that computer anxiety was positively associated with perceived ease of use.

The results of this study support the results of the previous studies Saade and Kira (2009) Teguh (2008), Emmons (2003), Syaiful Ali and Fadila (2008). The empirical evidence supports that computer anxiety negatively affects perceived ease of use. The descriptive data of respondents show that the higher level of anxiety of respondents will give a negative influence toward the perception of ease of use of the new system. The results of this study deal with the research conducted by Syarifudin and Fadila (2008), Emmon (2003). These findings also provide an explanation that feeling of anxiety, worries about computers for employees will give a negative perception of the use of computers in helping their work.

**Analysis of Computer Playfulness effect toward Perceived Ease of Use**

Based on hypothesis testing showed that the relationship between computer playfulness and perceived ease of use had coefficient value 0.080 and p value 0.289. This evidence showed that computer playfulness had no significant effect toward perceived ease of use. These findings did not support the previous studies by Heckbart et al. (2000), Zanaria (2013) and Venkantesh (2008). The findings of this study indicated that computer playfulness had no effect on perceived ease of use. In the other hand, the research conducted by Heckbart et.al. (2000), Zanaria (2013) and Venkantesh (2008) gave the result that computer playfulness had a positive effect toward perceived ease of use.

The differences in the results of this study with the previous studies are likely due to other factors
such as organizational culture. The previous research uses a unit of banking analysis, private companies and banking, where the work ethic and employee spontaneity are relatively high for trying the new system. In the other hand, this study uses the analysis unit of government agencies employees that have different organizational culture with private sector employees and banking.

Besides, the results of the descriptive analysis and the calculation of the index value are known that the respondents' answers provide an overview of intrinsic motivation that exists in their life. It does not encourage the perceptions ease of use for accrual-based accounting system. The perception ease of use of the system is driven more by the availability of facilities and infrastructure to the organization, the skills possessed by the employees as well as the assistance training to the use of accrual basis accounting system.

**Analysis of Perceived Enjoyment effect toward Perceived Ease of Use**

The tenth hypothesis was the influence of Perceived Enjoyment (PE) toward Perceived Ease of Use (PEU). Based on the results of hypothesis testing showed that the relationship of PE to PEU had a coefficient value 0.010 with p value 0.864, because the value of P (0.864)> 0.05, then the hypothesis that mention perceived enjoyment had a positive relationship to perceived ease of use, was rejected.

The results of this study are different to the results of the research conducted by Qureshi et.al. (2008) Sun (2006) Lee et.al. (2005 and Park et.al. (2009) the results of the previous research indicate that the existence of individual comfortable attitude in the implementation of the system will lead to the perception that the system is easy to use. The differences in the results of this study are caused by the dominant thing that occurs in the environment government agencies to use a system to the control and compliance supervision system to apply the accrual based accounting system. It indirectly affects the comfortable feelings of employees because they feel controlled by the concept of compliance supervision, thereby reducing their perception of the ease of use toward accrual based accounting system.

**Analysis of Objective Usability deals with Perceived Ease of Use**

The result of hypothesis testing about objective usability related to perceived ease of use indicated that objective usability relationship to perceived ease of use had a coefficient value 0.169 with p value 0.0001. It meant that objective usability was related to perceived ease of use. The findings in the objective usability relationship to perceived ease of use supported the research conducted by Heijden (2004), Venkateesh (2000) and Park (2008) that proved objective usability related to perceived ease of use.

The perception of willingness and effort of employees in utilizing accrual based accounting system accompanied by software application will give a positive response. It indicates that the implementation of accrual-based accounting system is able to assist the employees in carrying out their work.

**Analysis of Perceived Ease of Use effect toward Perceived Usefulness**

The result of hypothesis test of perceived ease of use to perceived usefulness indicated that perceived ease of use had significant effect toward perceived usefulness. The results of this study supported the previous research conducted by Chau (1996), Opia (2008) which proved that perceived ease of use had an impact either directly or indirectly on perceived usefulness, through attitude.

The results of this study also support research conducted by Heijden (2004), Sun and Zhang (2006) which states that perceived usefulness is significantly influenced by perceived ease of use. The findings also support TAM's theory that perceptions of the ease of use for information technology systems are able
to convince the users that the information technology is easy and does not create a burden to them, and increases the user's belief. Furthermore, the systems will benefit in their performance.

**Analysis of Perceived Usefulness effect toward Behavioral Intention to Use**

The result of hypothesis test about perceived usefulness was positively related to behavioral intention, was accepted. The result of this research supported the previous research of Sun (2003), Wiyono (2008), Maharsi (2006) Rigopoulos et.al. (2007), Lestari (2013) proving that perceived ease of use and perceived usefulness had a direct effect toward behavioral intention.

This result also deals with the theory of TAM which states the acceptance of the technology use or certain information systems will affect the interest of human behavior to use the system. In the implementation of the accrual based accounting system, the perception of ease and benefits of use will have a positive impact on employee behavior intentions to use the system.

**Analysis of Perceived Ease of Use effect toward Behavioral Intention to Use**

From the hypothesis test, the effect of perceived ease of use toward behavioral intention to use showed that perceived ease of use had significant effect toward behavioral intention to use. The results of this study supported the previous research conducted by Lestari (2013) and Princess (2013) who found that the acceptance of the use of technology or information systems would affect the interest of human behavior to use the system. The results of this study also supported the concept of TAM theory, which stated that there was a positive and significant relationship between perceived ease of use to behavioral intention to use.

Based on the descriptive statistics of the respondents' responses, it can note that the perception of ease and benefits of use will have a positive impact on the intentions of employee behavior to use the system in the implementation of accrual based accounting system.

**Analysis of Behavioral Intention to Use effect toward Use Behaviour**

The result of hypothesis test of behavioral intention to use influence toward use behavior indicated that there was an influence between behavioral intention to use towards use behavior. The results of this study supported the research that had been done by Wang et.al. (2003), Chan and Lu (2004), Kamel and Hassan (2003), Kleinen et al. (2004), Bobek et.al. (2003), Mustikasari (2007), Everard et al (2006) and Lum (2007) indicated that the intention to behave, had a positive and significant effect toward actual behavior. The results of this study also agreed with TAM theory that behavioral intention was a determining factor of actual behavior, a real attitude of individual actions in the implementation of a system. An intention to use a system would have an effect encourage employees to use the system in the government agencies.

5. **Research Implications**

5.1. **Theoretical Implications**

This study has broad implications in the future, especially for research relating to the relationship of behavioral factors in the implementation of new system. Based on the findings of research results and the conclusions on the hypotheses and research problems, it can be explained that applying a system must pay attention to the socialization of cost and benefits to employees if they use the new system. In addition, the new system should also be designed in a friendly way to be easily applied by employees, so that the
application of the system should only be considered on the ease of factual rather than perception, because the perception of difficult or easy system can be overcome by training and socializing new system.

The results of this study support that intrinsic motivation in TAM theory is an important component that must be considered in the implementation phase of the new system. It can be seen that there is a positive and significant correlation between intrinsic motivation variable to perception of benefit and system usage. This study is also expected to provide an overview to the government agencies that the success of the system implementation is not only determined by technical factors and funds, but the behavioral factors of the users also need to be considered. The results of this study also indicate that the external variables in the TAM theory have no significant effect on the perception of the use and the benefit of the system.

5.2. Research Limitation

This study has several limitations to consider in evaluating the research results. They are as follows:
1. The measurement instrument of research variables is used by translating the previous research instruments conducted abroad and in the private sector, so there may be differences in cultural background, and the characteristics of respondents that lead to differences in understanding. It is also possible that the respondent misinterpreted the true intention so that future research needs more in-depth study.
2. This research uses data in the form of respondent answers to the questions posed in the research questionnaire. Collecting data using mail surveys can implicate meticulous answers or they may not be serious in answering to the question of the questionnaire.
3. Some indicators forming research variables are elaborated in few questions only, and it affects the accuracy of indicators in forming of variables that result in the degree of perception index to respondents. Therefore, it may not deal with the expected goal from this study.
4. This research is only done at one time (cross sectional) so that there is possibility of individual behavior change by over the time.

Reference


Berliance, Leria., 2015, Analisis pemanfaatan web OPAC menggunakan technology acceptance model. Jurnal STIMIK AMIKOM.


Bontos, Himawan Suseno., 2009, Evaluasi Perilaku Penerimaan Karyawan


Fishbein, M. dan Ajzen. I., 1975, Belief, Attitude, Intentions and Behavior: AnIntroduction to Theory and Research, Addison-Wesely, Boston, MA.


