

# The Implementation Effect of Accrual Based Accounting System to Organizational Performance with Two Moderating Variables (An Empirical Study in Indonesia)

**Dona Primasari**

Faculty of Economics and Business  
Universitas Jenderal Soedirman, Indonesia

**Manatap Berliana Lumban Gaol**

HKBP Nommensen University, Indonesia

**Susiana**

Faculty of Economics and Business  
Andalas University, Indonesia

**Fuad**

Faculty of Economics and Business  
Diponegoro University, Indonesia

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## Keywords

Accrual-based accounting system, adaptation, computer anxiety, employee performance.

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## Abstract

*This study examines the implementation effect of accrual based accounting system to employee performance with adaptation and computer anxiety as the moderating variables. The sample in this research is the government officials in central Java, Indonesia. This research uses Moderated Regression Analysis (MRA) for data analysis. The results show that the implementation of accrual based accounting system affect the performance. Adaptation is not proven as a moderating variable however computer anxiety is proven to be a moderating variable.*

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Corresponding author: Dona Primasari

Email addresses for corresponding author: dona\_primasari@yahoo.com

First submission received: 23<sup>rd</sup> August 2017

Revised submission received: 2<sup>nd</sup> January 2018

Accepted: 29<sup>th</sup> January 2018

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## I. Introduction

Implementation of accrual-based accounting is one form of reformation in financial records to the government sector. In Indonesia, the norm which makes the implementation of accrual-based accounting system is stipulated in Government Regulation No. 71 of 2010 concerning the Financial Accounting Standards (SAP). Here, the government is obliged to change direction from the cash basis to the full accrual basis. Implementation of a new system requires employees be able to adapt to the existing system. According Cavallozo and Ittner (2004) in Primasari (2013), an obstacle to the successful achievement of a new system implementation is the lack of focus on behavioral factors during the implementation. In addition, there has been little research done by observing behavioral factors during the implementation phase of the new system and the effect of such systems on satisfaction and performance (Cavallozo and Ittner, 2004).

The researches that was conducted Arbenethy and Jan Bouwens (2005) have examined the behavioral factors during the implementation phase of the new system. According to Arbenethy (2005) in Primasari (2013), adaptability of employees will help the acceptance of the new system implementation. Due to the adaptability, the employees will try to adapt to the changes in their work environment so that the implementation system process is acceptable.

The other factor that also influences a successful implementation of a system is definitely the factor of individual behavior in the systems. The research conducted by Yunita (2004) shows that one of

the obstacles of the successful implementation system is a factor of the individual behavior who feels anxious or worried about information of technology implementation. This behavior is referred to as computer anxiety. Anxiety is a perception of difficulty, the difficulty of thinking that is caused by fear of something that will happen (Macquire Dictionary, 2013). Meanwhile, according to May (1997) in Yunita (2004) anxiety is as a fear of something that will happen over the threat to some of the values that are important to the individual for its existence as a private person. Computer Anxiety is as a person's tendency to become difficult, worry, or fear regarding the use of information technology (computers) in the present or future (Igbarian, 1989). Their perception of Computer Anxiety will negatively affect the successful implementation of a system so that it directly affects performance.

This study examines the effect of the new system within the government. It is the implementation of accrual-based accounting system to the performance using adaptation and computer anxiety as moderating variables. This study uses the theory of action reaction. The results of this study are expected to strengthen the existing theory and can be generalized (Abernethy and Guthrie, 1994; Chong and Kar, 1997).

## II. Literature Review

### 2.1 Theory of Reasoned Action (TRA)

This study aimed to describe the relationship between attitudes and individual behavior with the implementation accrual-based accounting system. In the Theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen (1975) is a theory that relates to the attitude and behavior of individuals in carrying out the activities/actions are grounded (reasoned action). This theory is revealed in the context of the use of information technology, that someone will use information technology if he can see the positive benefits of the use of information technology.

### 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).

The main problem in this research is related to the acceptance of the implementation of accrual-based accounting system in the government environment. In Indonesia, it can impact the result of accrual based financial report. The use of acceptance variables of accrual-based system implementation is in line with the Government Regulation No. 71 of 2010 about Government Accounting Standards and Minister of Home Affairs Regulation No. 64 of 2013 about Implementation of Accrual Government Accounting Standards toward Local Government.

### 2.3. Hypotheses

Implementation of a system result in a change in the condition of an organization. In this condition, the employees and managers are required to be able to respond to changes in local situations that occur. They must be able to adapt to these changes. Research Arbenethy (2005) examined the implementation of the innovation system of the performance, and the results prove that the implementation of the innovation system of proven effect on performance. Based on the above, the argument put forward:

- H1 : Implementation of accrual-based accounting system affects the employee performance.

Implementation of accrual-based accounting system will not be successful if it is not accompanied by the behavior of individuals (employees) who support the implementation of the system. Adaptation is a cognitive construct that refers to the intrinsic motivation of each individual (Thomas and Velthouse, 1990). Spreitzer (1995; 1996). According Arbenethy (2005) implementation of new system is mediated by

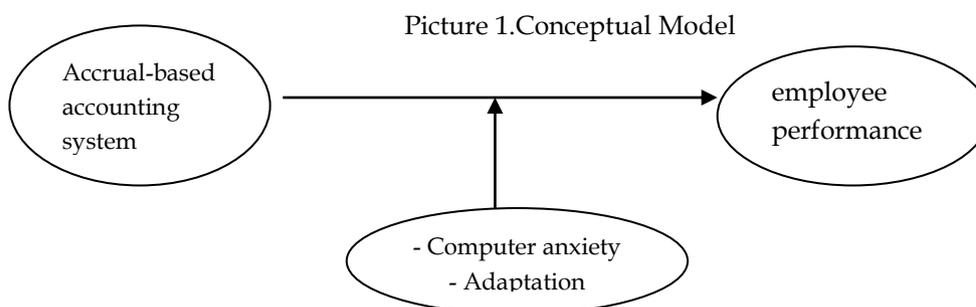
adaptation behavior of employees. Adaptability of employees will help the implementation of the new system. The employee will try to adapt to change in their working environment so that system implementation process is acceptable. Based on the above, the argument put forward the following hypothesis:

H2 : Adaptation positively moderates the implementation effect of accrual-based accounting system to the employee performance.

Howard and Smith in (Kira, 2009) define computer anxiety as a person's tendency to experience anxiety levels over future use of a computer. Syarifudin and Fadila (2008), Emmon (2003), these findings also provided a description that the feeling of anxiety, worries about computers in employees would give a negative perception of the use of computers in helping their work.

H3 : Computer anxiety negatively moderates the implementation effect of accrual based accounting system to the employee performance.

There are some reasons to show originality of the study as follows first, this research is a research using Theory of Reasoned Action (TRA) applications toward the implementation of accrual-based accounting systems that have never been studied by previous researchers. The second originality lies in the addition of adaptation variables as a moderating variable



Source : developed for this research

### III. Research Methodology

#### 3.1. Research Design

This type of research that used in this research is hypothesis testing research (hypotheses testing) research that explains the phenomenon in the form of the relationship between variables. The type of relationship between variables in this study is causality (cause and effect relationship). The type of data in this research is subject data. It is the research data that is in the form of opinions, attitudes, experiences or characteristics of a person or group of people who are the subject to investigation (respondent) (Indriantoro and Supomo, 1999). The sources of data that used in the research are the primary data in the form of the perception of respondents (subject) research and the instruments are questionnaires.

#### 3.2 Sample and Research Technique

The samples are the heads of departments, heads of agencies and the officials of Local Finance Business Administrator (PPKD) in the Central Java, Indonesia. The sampling technique in this research is done by purposive sampling. It is a sampling technique with a certain consideration. It was done to simplify and according to the research objectives that have been set.

#### 3.3. Analysis Technique

##### a. Data Quality Test

According to Hair et al (1998), the quality of the data resulting from the use of research instruments can be evaluated through the test of reliability and validity. The test is for determining the consistency and accuracy of the collected data from the use of instruments. There are two procedures performed to measure the reliability and validity of the data. They are the internal consistency test toward the respondents' answers on the research instrument and test of construct validity by correlating between the scores of each item and the total score. The second test description of the data quality is as follows:

1. The internal consistency test (reliability) is determined by Cronbach alpha coefficient. A construct or instrument is reliable if it gives Cronbach alpha values above 0.60 (Nunnally, 1967 with the Imam, 2005).
2. The data homogeneity test (validity) with a Pearson correlation test. If the result is significant, then the data is valid.

#### b. Normality Test

Normality test aims to test whether the regression model or residual confounding variables have a normal distribution. The t and F test assume that the value of the residual follows normal distribution. If this assumption is violated, the statistical test will be invalid to the small sample size. One of the statistical tests that can be used to test the residual normality is a non-parametric statistical test of Kolmogorov-Smirnov (K-S).

#### c. Classic Assumption Test

Due to the use of multiple regression analysis, it is necessary to do classic assumptions test in multiple regression as follows:

##### a. Multicollinearity Test

Multicollinearity test aims to test whether there is a correlation among the independent variables in the regression model (Priest, 2002). The test can see the amount of VIF and tolerance. The guideline used for a regression model that is free of multicollinearity is all VIF independent variable values below 10 and tolerance value is above 0.1 (Hair, 1998).

##### b. Autocorrelation Test

Autocorrelation test aims whether in a linear regression model there is a correlation between bullies error in period t with an error in period t-1 (previous) (Priest, 2002). This test is done by looking at the Durbin Watson:

- 1) if  $d < d_L$  or  $d > (4 - d_L)$  then there is an autocorrelation.
- 2) if d lies between  $d_U$  and  $(4 - d_U)$  then there is no autocorrelation.
- 3) if d lies between  $d_L$  and  $d_U$  or between  $(4 - d_U)$  and  $(4 - d_L)$  it does not produce any definitive conclusions.

##### c. Heteroskidadity Test

Heterokidastity test is conducted to test whether there occurs an inequality variant from one residual observation to another observation in the regression model. If a variant of the other residual observations remains, it is called homokidastity. A good regression model is homokidastity or no heterokidastity (Imam, 2002). The detection of the presence or absence heterokidastity can be done by the presence or absence of certain patterns (wavy, widened and then narrowed) on the plot graph (scatterplot) between the predictive value variables that are associated with the residual.

### 3.4. Hypothesis Testing

The used statistical analysis is simple and multiple regression analysis as a model to predict the causal relationship between the dependent variable and several independent variables. Simple linear regression is to examine the relationship between accounting information and managerial performance and examine the relationship of the three variables moderating (environmental uncertainty, the uncertainty of the task, and business strategy) and managerial performance. Moderated regression analysis (MRA) is used to determine the interaction between the three variables by one variable as moderating variable (Nunnally, 1994). The statistical equations are as follows:

$$\begin{aligned} KP &= a + b_1 SIA + e & (1) & \dots\dots\dots \\ KP &= a + b_1 SIA + b_2 ADT + b_3 SIA * ADT + e & (2) & \dots\dots\dots \\ KP &= a + b_1 SIA + b_2 ANX + b_3 SIA * ANX + e & (3) & \dots\dots\dots \end{aligned}$$

#### Note:

KP = Employee Performance  
 SIA = Accrual based Accounting System  
 ADT = Employee Adaptation  
 ANX = Computer Anxiety

a = intercept

e = error

If ADT and ANX are moderating variables, the coefficient b3 should be significant at 0.05 or 0.10.

#### IV. Discussion and Conclusion

##### 4.1. Descriptive Statistics

##### 4.1.1. Questionnaires Distribution and Return

Here are the final results from the questionnaires distribution and return, which can be seen in Table 4.1

**Table 4.1-Details of questionnaires distribution and return**

Questionnaires Descriptions	Number of Questionnaires
- Distributed questionnaires	143 questionnaires
- Returned questionnaires	113 questionnaires
- Unreturned questionnaires	30 questionnaires
- Disqualified questionnaires (Due to the incomplete data filling)	10 questionnaires
- Completed questionnaires	73 questionnaires
- Questionnaires response rate	$(113 / 143) * 100\% = 79\%$
- Questionnaires response rate that can be used for research	$(73 / 143) * 100\% = 51\%$

Source: Data processed, 2017

##### 4.1.2. Data Quality Test

Data quality test included the reliability and validity test. Reliability test was conducted by Cronbach alpha test using SPSS. A construct could be said to be reliable if it gave Cronbach alpha values > 0.60 (Nunnally, 1967 with the Imam, 2005). Here is a recapitulation of the reliability and validity testing presented in Table 4.2. dan table 4.3.

**Table 4.2-Results of Reliability Test**

No	Variables	Cronbach Alpha Value	Notes
1	Accrual based accounting system	0,77	Reliable
2	Adaptation	0,661	Reliable
3	Computer anxiety	0,75	Reliable
4	Employee performance	0,78	Reliable

Source: primary data processed 2017

**Table 4.3-Results of Validity Test**

No	Variables	Range Correlations	Significance	Notes
1	Accrual based accounting system	0,770**-0,801**	0,001	Valid
2	Adaptation	0,745**-0,888**	0,001	Valid
3	Computer anxiety	0,677**-0,777**	0,001	Valid
4	Employee performance	0,807**-0,887**		

Source: primary data processed 2017

##### 4.2. Normality Test

The result of normality test indicated that Kolmogorov-Smirnov value was significant at 1.101 and 0.177, which meant that H0 was accepted and the residual data were normally distributed.

##### 1. Classic Assumption Test

As the research used multiple regression analysis, it is necessary to test classic assumptions that contained in multiple regression as follows:

##### a. Multicollinearity Test

The result of Variance Inflation Factor (VIF) also showed the same thing that no one independent variable which had VIF > 10. So, it could be said that there was no multicollinearity between independent variables in the regression model.

**Table 3.4-Results of Multicollinearity Test**

Variables	t Value	Sig	Collinearity Statistics	
			Tolerance	VIF
SIA	5.466	.000	.879	1.137
ADT	.118	.048	.879	1.137
ANX	.101	.036	.879	1.137

Dependent Variable: KINERJA

**b. Autocorrelation Test**

The calculation results showed that the value of Durbin Watson (DW) was 1.150. This value was compared to the value table using a significance value 0.01. There were 101 samples (sample total was 73 for less than 150 and closer to 100) and the number of independent variables was 2 ( $k = 2$ ) the obtained dL value was 1.503 and dU was 1.583. So, we could say that DW 1,150 less than the upper limit (dU) 1,583 and less than  $4-1.503$  ( $4- dU$ ), so it could be interpreted that there was a positive autocorrelation. Autocorrelation aroused because of the successive observation all the times.

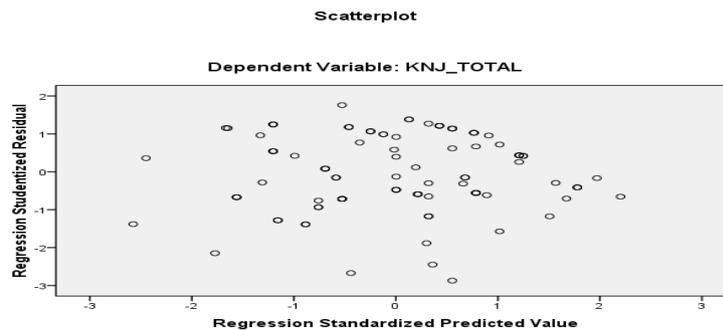
**Table 3.5-Results of Autocorrelation Test**

Model	R	R Square	Adjusted R Square	Std. Error of	Durbin Watson
1		.234	.218	5.776	1.150

Source: primary data processed 2017

**c. Heteroskedastity Test**

Based on the results plot graph (scatterplot), it indicated that there was no particular pattern (wavy, widened and then narrowed). Anyway, it meant that there was no heteroskedastity in regression models.

**4.3. Hypothesis Testing**

Hypothesis testing was done to address the problems that previously were formulated.

**a. Implementation of accrual-based accounting system affects the employee performance (H1)**

Testing the hypothesis 1 was done by looking at the interaction between the variables of accrual accounting system with employee performance (equation 1). The test results indicated the magnitude of adjusted R<sup>2</sup> was 0.194. It meant 19.4% of the employee performance variation could be explained by the variation of the variable accrual-based accounting system. On the other hand, the remaining 80.6% was explained by other causes beyond the model. From the regression model seemed accounting information variables significant at 0.05. It meant that the employee performance variable was affected by the accrual accounting system.

**b. Adaptation moderates positively the implementation effect of accrual-based accounting system to employee performance.**

Hypothesis 2 (H2) was done by interaction testing or it is often called the Moderated Regression Analysis (MRA). It is a specific application of multiple regressions linear where the regression equation contains elements of interaction (multiplication of two or more independent variables). Results of testing the hypothesis 2 could be seen in the interaction variables. It was an insignificant interaction between

accrual-based accounting system and adaptation. SPSS output results seemed that the variable interaction gave a significant coefficient at 0.735 and 0.464 which meant that adaptation variable was not proven as a moderating variable.

- c. Computer anxiety negatively influences the implementation effect of accrual-based accounting system to employee performance (H3).

The testing of hypothesis 3 was done by interaction testing. It was often called Moderated Regression Analysis (MRA). It was a specific application of multiple linear regressions where the regression equation contained elements of interaction (multiplication of two or more independent variables). The results of the hypothesis 2 testing could be seen in the interaction variable. It was a significant interaction between the accrual-based accounting system and computer anxiety. SPSS output result reported it clearly that the variable interactions gave a coefficient -0.037 and it was in 0.022. It meant that the dysfunctional behavior variable was pure moderators or moderating variables. Summary results of hypothesis testing could be seen in table 3.6, 3.7 and 3.8

**Table 3.6-Summary of Hypothesis 1 Testing**

Hypothesis	Adjusted R Square	Significance Test		Significance test		Notes
		Simultaneous		Individual Parameter		
		F	Sig	t	Sig	
H1 SIA - KP	0,194	-	-	8,782	0,000	Influenced

Source: primary data processed 2017

**Table 3.7-Summary of Hypothesis 2 Testing**

Hypothesis	Adjusted R Square	Unstandardized Coefficients		Significance Test		Notes
		B	Std. Error	Individual Parameter		
				t	Sig	
H2 SIA INTERAKSI	0,558	0,549 0,896	49,346 0,372	0,000 0,735	0,549 0,464	Not Influenced Not Influenced

Source: primary data processed 2017

**Table 3.8-Summary of Hypothesis 3 Testing**

Hypothesis	Adjusted R Square	Unstandardized Coefficients		Significance Test		Notes
		B	Std. Error	Individual Parameter		
				t	Sig	
H2 SIA INTERACTION	0,229	2.105 -.037	.447 .016	4.710 -2.336	.000 .022	Influenced Influenced

Source: primary data processed 2017

## 2. Discussion

### a. Implementation of accrual-based accounting system affects the employee performance.

Based on the results of hypothesis testing, it was known that accrual-based accounting system affected the performance. The results of this study supported the other research that was done by Arbenethy (2005). It also supported Igbaria's and Tan's research (1997) who found that user satisfaction about information technology had a direct effect on performance. These results were also consistent with the studies of Arbenethy and Jan Bouwens (2005). Implementation of accrual-based accounting system was declared to produce transparent and accountable financial reports. The real form of implementation of accrual-based accounting system was a fair financial statement in accordance with government

accounting standards. In Central Java, the year 2016 had obtained a fair audit results and already carried out the implementation of accrual-based accounting. It indicated that the implementation phase of accrual-based system had an impact on performance, as well as the employees could see the positive benefits of the use of information technology.

The results of this study also supported the research conducted Hunton (1997). According to Hunton (1997) the use of information systems would enhance managerial performance. The acceptance of the implementation system would assist employees in carrying out the operational activities of their work, the employees tended to empower the implementation of the system as much as possible so that it would automatically improve their performance.

**b. Adaptation negatively moderates the implementation effect of accrual based accounting system to the employee performance.**

The second hypothesis test results showed that adaptation negatively moderated the implementation effect of accrual-based accounting system to the employee performance. The results of this study did not support the research conducted by Arbenethy and Jan Bouwens (2005) which indicated that decentralization had a positive influence on adaptation and it got the sub unit manager to accept the implementation of MAS (Management Accounting System) effectively and efficiently.

The difference of the research was due to the phenomena occurring within the government that in the implementation phase of a new system, employees were generally more dependent on the resources available in the organization and the support from the superiors. The employees tended to respond positively if there were adequate facilities and infrastructures as well as the socialization of the new system. On the governance environment, the concept of adaptation was not considered very important because the accrual-based accounting system was a mandate which required employees to conform to the existing guidelines system.

**c. Computer anxiety positively moderates the implementation effect of accrual based accounting system to the employee performance**

The results of the third hypothesis proved that computer anxiety as moderating variable negatively moderated the implementation effect of accrual-based accounting system to employee performance. The results of this study supported the research that had been done by Yunita (2004), Amy (2010), Ursavas and Karal (2009). The anxiety in the implementation of a new technology system would have an impact to employee psychological. Employees, who were fearful and anxious about the implementation of technology, felt unconfident with their ability to use the new system, would block the implementation of the new system. Therefore, it would have a bad impact to the performance.

**5. Conclusion**

The results of this study demonstrate that the implementation of accrual-based accounting system stipulated in Government Regulation No. 71 of 2010 are proved to have an impact to the employee performance in Central Java, Indonesia. It indicates that use of the system implementation will assist employees in carrying out the operational activities of their work. The employees tend to empower the implementation of the system as much as possible so that it will automatically improve their performance. Adaptation is not proven as moderating variable that moderates the effect of accrual-based accounting system to employee performance. The results of this study are different to the previous studies of Arbenethy (2005), Primasari (2013). The difference of this study is caused by a phenomenon that occurs within the government. In the implementation phase of a new system, employees are generally more dependent on the resources available in the organization and supports from the superiors. Employees tend to respond positively if there are adequate facilities and infrastructures and the socialization of the new system.

Computer anxiety is proven as a moderating variable. It negatively moderates the implementation effect of accrual based accounting system to employee performance. The results of the research supports the research done by Yunita (2004), Woszsynsky (2010), Ursavas and Karal (2009).

**6. Research Limitation**

This study has limitations, such as: some previous researches used samples of private sector and banking. This research results that were conducted at government organizations were not significant. It

was likely due to the different characteristics researches. Validity and reliability of the instrument used in this research are not tested well because there are some indicators that are eliminated (validation) although a pilot study has been done. Researchers predict the possibility of other factors, such as poor translation, especially the language setting in accordance with the conditions of respondents in Indonesia. The use of self-rating on the measurement of employee performance can lead to the tendency of respondents to measure their performance higher than the real one, so that the performance rating tends to be higher.

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