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# The effect of computer-assisted audit techniques and professional ethics on audit performance

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#### Abstract

In today's competitive business environment, it's mandatory for companies to provide financial information that has been audited by a public accounting firm. The audit process is carried out by auditors in accordance with accounting professional ethics and with the use of CAATs. Professional ethics and CAATs will help the auditors perform better during the process, resulting in high-quality and unbiased audit results for the company's financial statements. This research was conducted using the hypothetico-deductive method, and samples were taken from the public accounting firms in Bandung and Jakarta, which were selected by the purposive sampling method. The data was processed using the SPSS Statistics version 26 application, and the successive interval method was used to analyze it. The validity and reliability of the data were also verified, and the hypothesis was tested with partial tests and simultaneous tests after being assessed using multiple regression and coefficient of determination. According to the findings of this study, CAATs have no effect on auditor performance; however, professional ethics have an effect on auditor performance. Furthermore, when examined simultaneously, the usage of CAATs and professional ethics had a significant effect on auditor performance. Despite the fact that the results of this study indicate no influence, the recommendation is that auditors be encouraged to pay attention to CAATs. Then, public accounting firms are urged to continue providing auditors with technical capabilities. Furthermore, future researchers should create a research unit with a balanced respondent population from each location in order to describe more precise results.

Keywords: Computer Assisted Audit Techniques, Professional Ethics, Auditor Performance, Public Accounting Firm. DOI: 10.20885/InCAF.vol1.art2

# **INTRODUCTION**

In today's competitive business environment, companies are required to publish financial statements that have been audited by public accountants. With the increasingly fierce competition that occurs among many companies, this audited financial statement can be one of the keys to gaining public trust so that the company can gain a good reputation to advance the situation. In auditing the company's financial statements, the public accountant auditor carries out these procedures in accordance with the professional ethics of accountants that have been regulated in the Indonesian Accountant Code of Ethics. This professional ethics is the basis for a professional to carry out his duties (Akbar, 2018). Auditors who follow existing professional ethics will gain more public trust because they are considered more professional in carrying out their audit duties. If the audit process is carried out in accordance with relevant professional ethics, the level of public trust in the audit results can continue to increase.

With the development of the times, especially in the field of technology, the audit process has also changed a lot from time to time to be perfected with existing technological developments. If in the past the audit process was still carried out manually, now auditors have involved a lot of the latest technological innovations as a tool in their audit process. One such tool is the Computer Assisted Audit Techniques (CAATs). CAATs is a tool that can help auditors to achieve inspection goals that refer to inspection procedures, especially for testing data and software (Fitrianingsih et al., 2021). According to Setyawan (2019), the use of Computer-assisted Audit Techniques (CAATs) itself in its implementation can utilize several software such as Generalized Audit Software (ACL, IDEA, SAS, SESAM, Arbutus Analyzer), Spreadsheet Application (Microsoft Excel, Lotus-123, Quatro-Pro, OpenOffice), Database Management System (Microsoft Access, Visual FoxPro, Lotus Approach, SQL, Oracle), or using Query and Reporting Application (Microsoft Query, Crystal Report).

#### LITERATUR REVIEW

According to Arens (2017:4), the audit is "the accumulation and evaluation of evidence about information to determine and report on the degree of correspondence between the information and established criteria. Auditing should be done by a competent, independent person." In the world of auditing itself, the audit process is carried out by an auditor defined by Hayes (2014:661). as "the person or persons conducting the audit, usually the engagement partner or other members of the engagement team, or, as applicable, the firm." In this study, the auditor in question was an external or independent auditor outside the company who worked for a public accounting firm.

When an auditor conducts an audit process, they use CAATs a lot, which is the use of computers in inspection activities and is a tool that helps auditors in achieving inspection objectives that refer to inspection procedures (audits) that specialize in testing data and software (Setyawan, 2019). The audit procedure is also carried out following the rules of professional ethics stated in the code of ethics which is the handle in determining what certain professional practices can and cannot do (Sihotang, 2019). Accountant professional ethics itself is regulated in the Indonesian Accountant Code of Ethics, which is a series of competency standardization rules issued by government agencies useful for regulating the relationship between the accountant profession and the existing community (Ersyafdi et al., 2022).

The use of CAATs and the application of professional ethics previously described are said to help auditors to improve their performance. The auditor's performance itself is the result of work achieved by the auditor in carrying out his duties in accordance with the responsibilities given to him and is one of the benchmarks used to determine whether a job done will be good or vice versa (Wibawa & Astika, 2018).

Some of the previously written theories are related to each other. Computer-assisted Audit Technique is a tool that can facilitate the audit process carried out by auditors so that it will support the implementation of auditor tasks in detecting fraud and errors. Then an auditor must also pay attention to the ethics of the accountant profession so that it can be a basis and guide for auditors to carry out their work properly. By conducting the audit process by utilizing Computer-assisted Audit Techniques (CAATs) and professional ethics, it is hoped that the performance of auditors can later improve for the better.

According to Manurung (2022), it is necessary to carry out supervision and control so that a sustainable goal can be successfully achieved. Therefore, it is also necessary to carry out supervision from the OJK as the authorized party so that the entire audit process carried out by the public accounting firm can run well.

From this relationship, below are the explanation of two hypotheses in this study:

#### 1. H1: Computer-assisted Audit Techniques affect the performance of auditors.

Auditors widely use CAATs as a technology to help their audit activities. If auditors use Computer-assisted Audit Techniques (CAATs), the audit process carried out will be helped a lot considering that CAATs has the ability to detect fraud and errors automatically (Fitrianingsih et al., 2021). Another explanation also states that when conducting audit activities, an auditor is required to be able to improve their performance in conducting financial statement audits faster and better. Then to assess the performance of an auditor himself, there are several components that must be considered to be able to determine the good and bad of the performance. The two components are the auditor's ability to submit audit reports, and also the quality of audit findings produced by auditors (Kristian, 2020).

By using Computer-assisted Audit Techniques (CAATs), the quality of the audit findings produced can produce better results because CAATs can automatically detect fraud and errors from a financial report. With the results of automatic fraud and error detection, an auditor can be helped to process audits better. That way, the delivery of the results of the financial statement audit will also be better because it is supported by CAATs which has previously helped detect fraud, errors, or other components.

#### 2. H2: Professional ethics affects the performance of auditors.

Professional ethics is a high moral commitment and is then expressed in the form of special rules that become a handle for everyone who carries out the profession concerned. Each profession must have its own code of ethics so that a professional can have moral principles and can be regulated by his behavior. An auditor is essentially required to maintain their standards of ethical conduct in accordance with applicable regulations. When an auditor is able to carry out his professional ethics well in accordance with ethical values and applicable codes of ethics, the auditor can carry out his work more professionally. That way, auditors who maintain their professional ethics well, the auditor's performance will also increase (Akbar, 2018).

#### **RESEARCH METHODS**

#### **Research Methods**

This research uses a quantitative approach to determine the formulation of the problem by analyzing the cause-and-effect relationship between the dependent variable and its independent variable. In addition, the research method used is a *hypothetico-deductive method* to solve basic and managerial problems with a useful and systematic approach.

# **Research Variables**

In this study, the dependent variable studied was audit performance. Audit performance itself is the result of work achieved by the auditor in carrying out his duties in accordance with the responsibilities given to him and is one of the benchmarks used to determine whether a job done will be good or vice versa (Wibawa & Astika, 2018).

Meanwhile, the independent variables studied here are Computer-assisted Audit Techniques and professional ethics. CAATs is the use of computers in inspection activities and is a tool that assists auditors in achieving inspection objectives that refer to inspection procedures (audits) that specialize in testing data and software (Setyawan, 2019). Meanwhile, professional ethics is a code of ethics that is a handle in determining what certain professions can and cannot do (Sihotang, 2019).

## **Research Population and Sample**

This study took the Public Accounting Firm as a population to be further studied. Meanwhile, the sample taken in this study was Public Accounting Firms in Jakarta and Bandung which had criteria in the form of using Computer-assisted Audit Techniques as a tool in the audit process.

#### **Data Collection Techniques**

The data collection technique used in this study was a questionnaire to collect primary data. The questionnaire was made with reference to the *Central Limit Theorem* which states that the minimum sample presented in the study is 30 (LaMorte, 2016). In this study, questionnaires will be distributed to several Public Accounting Firms by asking several topics regarding the use of Computer-assisted Audit Techniques (CAATs) and professional ethics and their relationship with auditor performance.

#### Data Analysis and Processing Techniques

This research was conducted by first processing the data that had been obtained from the results of the questionnaire distribution. The answers from the respondents that have been obtained will be scored first according to the likert scale answer range. Then because the value is still in the ordinal scale type, the *Method of Successive Interval* (MSI) will be carried out first to change the ordinal scale to a nominal scale (Ningsih & Dukalang, 2019).

After being converted into a nominal scale, a data quality test will be carried out consisting of a validity test and a reliability test. Validity test is a test of how the data used can really measure a concept that you want to measure. A validity test is needed in a study to measure whether or not a questionnaire is valid or valid. The data is said to be valid if the resulting  $r_{count}$  is greater than the  $r_{table}$  and also the significance level is 5% (Djajadisastra, 2018). While the reliability test is a test carried out to prove the consistency and stability of the measurement instruments used in the study. The reliability of each variable is acceptable when it has a value greater than 0.60. (Sekaran & Bougie, 2016).

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$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Information:

Y = Auditor Performance (Dependent Variables)

- X<sub>1</sub> = Computer-assisted auditing techniques (independent variables)
- $X_2$  = Professional Ethics
- $\alpha$  = Constant
- $\beta_1$  = Regression Coefficient for  $X_1$
- $\beta_2$  = Regression Coefficient for  $X_2$
- $\varepsilon$  = Standard Error

This study also uses the coefficient of determination in the analysis process. In addition, hypothesis tests are also carried out with partial test types and simultaneous tests which can be seen as follows:

# 1. Partial Test

The first hypothesis is said to be the following.

- a)  $H_{01}: \beta_1 = 0$ : The use of Computer-assisted Audit Techniques has no effect on auditor performance.
- b)  $H_{a1}: \beta_1 \neq 0$ : The use of Computer-assisted Audit Techniques affects the performance of auditors.

Then, the second hypothesis is also described as follows.

- a)  $H_{02}: \beta_2 = 0$ : Professional ethics has no effect on the performance of auditors.
- b)  $H_{a2}: \beta_2 \neq 0$ : Professional ethics affects the performance of auditors.

# 2. Simultaneous Test (Goodness of Fit Test)

Goodness of fit test is a statistical measure of how well the regression line approximates the real data points (Sekaran & Bougie, 2016). The regression model is declared fit for use in research if the significance value is < 0.05 (H<sub>a</sub> is accepted). However, if the significance value is  $\ge 0.05$ , then the regression model is declared unfit for use in research (H<sub>0</sub> is rejected).

# **Object of Study**

The research objects used in this study are Computer-assisted Audit Techniques (CAATs), professional ethics, and audit performance. Meanwhile, the research unit studied was a Public Accounting Firm located in the City of Jakarta and the City of Bandung.

# **RESULTS AND DISCUSSION**

## Description of the Object of Study

This research was conducted by providing questionnaires to people who work as auditors at Public Accounting Firms located in Bandung and Jakarta. This research questionnaire was distributed from October 20, 2022 and ended on May 30, 2022. When distributing the questionnaire, there were obstacles found due to the large number of requests for filling out the questionnaire that did not get a response by the auditor. Referring to the previous explanation, based on the 42 questionnaires that have been distributed to several auditors, the questionnaires that were returned or actually filled out by respondents were 32 questionnaires.

## Descriptive Analysis of Data

The results of this study are described through descriptive analysis of the data. This data is interpreted based on a picture of the data from the respondent's answers to each of the variables studied.

## 1. CAATs Variable

The results of the questionnaire answers showed that respondents mostly answered "4" or "Agree" to all four questions regarding the use of Computer-assisted Audit Techniques (CAATs). Here is the category score range and the continuum line of the CAATs variable.



Figure 1. CAATs Variable Score Continuum Line Source: Researcher Process (2022)

Based on the continuum line made based on the calculation of the previous score range, it can be concluded that the majority of respondents' answers regarding the use of Computer-assisted Audit Techniques fall into the category of "Strongly Agree" with a score of 546.

In addition to some of the questions presented in the previous table, there is also one open-ended question regarding the Computer-assisted Audit Technique (CAATs) variable, namely "What applications or software have you used in the audit process?" Based on the questions asked, the answers from the respondents can be summarized as follows:

- 1. Spreadsheet Application (Microsoft Excel, ATLAS)
- 2. Generalized Audit Software (IDEA)
- 3. Special applications for auditors in certain public accountants (PwC Aura, PwC Smart Audit Platform, KPMG Clara Workflow)
- 4. Microsoft Word
- 5. Alteryx

Based on the *previous* answer, it can be concluded that auditors use a lot of software or Computerassisted Audit *Techniques* (CAATs) as a tool in carrying out their audit process. Auditors typically use more than one application to help with their audit process.

#### 2. Professional Ethics Variable

Based on the distribution of questionnaires that have been carried out, the results of the questionnaire answers show that respondents answered the most "5" or "Strongly Agree" to all seven questions regarding the application of professional ethics. Here is a detailed score calculation of the overall answer to the question regarding the variables of professional ethics.





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Based on the continuum line made based on the calculation of the previous score range, it can be concluded that the majority of respondents' answers regarding the application of professional ethics fall into the category of "Strongly Agree" with a score of 962.

## 3. Auditor Performance Variable

Based on the distribution of questionnaires that have been carried out, the results of the questionnaire answers show that respondents answered the most "5" or "Strongly Agree" to all 7 questions regarding the application of auditor performance. Here is a detailed score calculation of the overall answer to the question regarding the auditor's performance variables





Based on the continuum line made based on the calculation of the previous score range, it can be concluded that the majority of respondents' answers regarding the auditor's performance fall into the category of "Strongly Agree" with a score of 980.

## **Data Quality Test**

In this study, it is necessary to test the quality of data on the primary data that has been collected through questionnaires. The first data quality test is the validity test. The result of the validity test in this study was that a total of 18 questions were declared valid because the calculated r result was greater than the  $r_{table}$  used in this study ( $r_{table} = 0.349$ ), and also a significance value smaller than 5%. Meanwhile, the reliability test in this study resulted in a statement that the three variables of CAATs, professional ethics, and auditor performance were all reliable because Cronbach's Alpha value exceeded 0.60.

## **Multiple Regression Analysis**

							Coefficients <sup>a</sup>						
		Sum of	ANOVA <sup>a</sup>						Unstandardized Coefficients		Standardized Coefficients		
Model		Squares	df	Mean Square	F	Sig.	Model		В	Std. Error	Beta	t	Sig.
1	Regression	295.367	2	147.684	22.118	.000 <sup>b</sup>	1	(Constant)	1.694	2.860		.592	.558
	Residual	193.632	29	6.677				Teknik Audit	.191	.253	.114	.753	.458
	Total	488.999	31					(TABK)					
a. Dependent Variable: Kinerja Auditor						Etika Profesi	.776	.169	.699	4.598	.000		
<li>b. Predictors: (Constant), Etika Profesi, Teknik Audit Berbantuan Komputer (TABK)</li>					a. Dependent Variable: Kinerja Auditor								

Figure 4. Multiple Linear Regression SPSS Calculation Results Source: Researcher Process (2022)

Based on figure 4.10 above, the multiple linear regression equation in this study can be expressed as follows:

## Auditor Performance = $1,694 + 0,191 + 0,776 + \varepsilon$

The constant value of 1.694 means that there is a unidirectional influence between the variables and if all variables, namely Computer-assisted Audit Techniques (X1) and professional ethics (X2) are constant or zero, then the auditor's performance variable (Y) will have a value of 1.694. Then the regression coefficient X1 of 0.191 means that if the Computer-assisted Audit Technique (CAATs) has an increase of 1%, then the auditor's performance will also increase by 0.191. Meanwhile, the X2 regression coefficient of 0.776 means that if professional ethics increases by 1%, then the auditor's performance will also increase by 0.776.

#### **Coefficient Determination Analysis**

usted R Std. Error of
quare the Estimate
.577 2.583982
f



The results of the analysis from the table above show that the Adjusted R Square column has a value of 0.577. This means that the variables of Computer-assisted Audit Techniques (CAATs) and professional ethics have an influence on auditor performance by 57.7%. In other words, this auditor performance variable was influenced by other factors that were not tested in this study with a value of 42.3%.

## Hypothesis Test

## 1. Partial Test





Based on the table above, the results show that the significance value of the Computer-assisted Audit Technique (CAATs) variable shows 0.458, which is greater than 0.05. Through this explanation, it is known that this partial test of  $H_{a\,1}$  was rejected and  $H_{0\,1}$  was accepted. So the conclusion of H1 is that the use of CAATs has no effect on auditor performance.

Meanwhile, it can be seen that the significance value of the professional ethics variable shows 0.000, which is less than 0.05. The explanation means that a partial test of  $H_{a\,2}$  is accepted and  $H_{0\,2}$  is rejected. Therefore, the conclusion of H2 is that professional ethics has an influence on the performance of auditors.

#### 2. Simultaneous Test

ANOVA <sup>a</sup>									
	Model		Sum of Squares	df	Mean Square	F	Sig.		
	1	Regression	295.367	2	147.684	22.118	.000 <sup>b</sup>		
		Residual	193.632	29	6.677				
		Total	488.999	31					
a. Dependent Variable: Kineria Auditor									

 b. Predictors: (Constant), Etika Profesi, Teknik Audit Berbantuan Komputer (TABK)



Based on the table above, it can be seen that the significance value is 0.000 which is less than 0.05. Thus, it can be obtained that H<sub>a</sub> is accepted. Therefore, it can be stated that the previously generated regression model is fit to use in this study.

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#### Discussion

CAATs is divided into several types, some of which are Generalized Audit Software, Spreadsheet Application, Database Management System, Query and Reporting Application, and applications made specifically for auditors in certain public accountants. Of the entire type of CAATS, auditors use more than one *software* in the audit process. *The majority* of software used are *spreadsheet* applications (Microsoft Excel) and applications created specifically in their respective public accountants.

There are several analysis results contained in this study. First, the results of the coefficient of determination analysis show that Computer-assisted Audit Techniques (CAATs) and professional ethics have an influence on auditor performance by 57.7%. Secondly, the results of the analysis of multiple linear regression produce a multiple linear regression equation that can be expressed in the following formula: Audit Quality =  $1.694 + 0.191 + 0.776 + \varepsilon$ . Third, the results of testing the research hypothesis on the three variables of Computer-assisted Audit Techniques (CAATs), professional ethics, and auditor performance can be found. Based on partial tests, it was concluded that the use of Computer-assisted Audit Techniques (CAATs) has no effect on auditor performance, while professional ethics has an influence on auditor performance. Then the results of the simultaneous test showed that the use of Computer-assisted Audit Techniques (CAATs) and the application of professional ethics had an influence on the performance of auditors.

Although the majority of respondents, namely auditors, replied that Computer-assisted Audit Techniques (CAATs) can facilitate audit activities carried out by auditors and will realize better audit results, in fact the statement of the Computer-assisted Audit Technique (CAATs) variables tested in the Partial Test (T Test) cannot be statistically proven to be correct.

## CONCLUSION

This research shows the results that Computer-assisted Audit Techniques (CAATs) do not affect the performance of auditors, while the application of professional ethics actually has an influence on auditor performance. However, if the two variables are tested simultaneously, the result is CAATs and professional ethics turns out to have an influence on the auditor's performance.

When working on this study, there were some perceived limitations. One of them is the statistical results of H1 regarding CAAT's which is different from the results in previous research journals. In addition, the research units specified in this study did not have a balanced number between the two areas of the Public Accounting Firm studied.

So, based on the conclusions and limitations that have been previously presented, there are several recommendations that can be submitted. First, auditors are encouraged to keep an eye on CAATs even though the results of this study show no effect on auditor performance because technology remains important, especially in audit activities that have kept up with the times. Then the second, Public Accounting Firms are also urged to continue to equip auditors with emerging technological capabilities. Finally, the next researcher should also determine the research unit with respondents who are balanced between their respective regions so that they can describe the results more precisely.

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