http://ejournal.seaninstitute.or.id/index.php/Ekonomi
Jurnal Ekonomi, Volume 12, No 01, 2023
ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

EDUCATIONAL BACKGROUND AND CAPABILITIES REQUIRED TO IMPROVE THE PERFORMANCE OF AUDITORS IN ACCOUNTING INFORMATION SYSTEMS: A CASE STUDY OF KAP AIS

Imelda Hotmaria
University of Indonesia, Depok

ARTICLEINFO

Keywords:
Accounting information systems auditor,
Performance of accounting information systems auditor,
Audit,
Education.

E-mail:
imelda.hotmaria91@ui.ac.id

ABSTRACT

Automation of the accounting recording process makes an auditor of an accounting information system needed. Information systems auditors generally come from three different educational backgrounds, namely information systems, information technology, or accounting. This study aims to analyze the competencies required to become an information systems auditor. The study begins by testing whether there is an effect of differences in educational background on auditor performance by using linear regression. The study used a sample of 71 accounting information system auditors who worked at AIS audit firms and interviewed partners from AIS audit firms. From the results of the study, there was no influence of educational background on auditor performance. Further, this study found that the need for knowledge or skills regarding auditing,

Copyright © 2023 Economic Journal.All rights reserved.
is Licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0)

1. INTRODUCTION

The dependence of accountants on information technology to present financial reports makes financial statement auditors unable to ignore the risks that may arise from accounting information systems. Financial reports are a form of communication to various interested parties and as material for consideration in making decisions.

Financial statement auditors may be able to examine irregularities that occur in simple systems, but this becomes a new problem when the system that produces financial reports is very sophisticated and complex. The demand for the services of an accounting information system auditor is increasing in line with the need for organizations to mitigate risks in the system. The work of the information system auditor has the same audit objective as the financial statement auditor, namely to ensure that there are no misstatements in the financial statements issued by the organization.

Accounting information system auditors must have additional capabilities that are not owned by financial statement auditors. The most basic additional capability is the ability to understand the use of various operational systems in technology software. Similar to the auditor of financial statements, an information systems auditor must also study the organization's business processes. Different business processes will use business applications in different technologies, so the risks will be different.

Information systems auditors need training and education to do their job. According to Hunton, Bryant, and Bagranoff (2004) in their book entitled Core Concepts of Information Technology Auditing, information system auditors must at least have a bachelor's degree. The undergraduate educational background of prospective accounting information system auditors generally comes from an educational background in information systems, information technology, or accounting. Differences in the education curriculum in Indonesia, the educational background of information systems is designed to prepare graduates to become system analysts, while the information technology education curriculum is made to prepare graduates as system developers.

2. Literature Review

Information System Audit

Information system audit is the process of collecting data and evaluating evidence to determine whether a computerized application system has established and implemented an adequate internal control system, all assets are properly protected or misused, and data integrity is ensured, reliability and effectiveness and efficiency of information system operations computer-based (Weber, 1998). An information system audit is carried out in the framework of a financial report audit or operational audit.

An audit of financial statements is an audit conducted to determine the fairness of the financial statements presented by the company. Reports must conform to financial accounting standards and not contain material misstatements. If the audited organization's accounting system is a computer-based accounting system, then an audit of the accounting information system is carried out whether the processes or mechanisms of the system and computer programs are appropriate, general controls and system applications are adequate, and the data is valid.

Control of Financial Reports in Information Systems

The basic form of a system is very simple, consisting of input, process and output. When drawn in a diagram it will take the following form:

*Inputs*is the driving component or power supply in which the system is operated. Output is the result of operations, which means it becomes the goals, objectives or targets of the organization in a system. While the process is an activity that can transform input into output.

The information obtained must be of good quality in order to be used by management to make choices.. The quality of information depends on three things, namely accurate, timely, and relevant. An information system can be defined as a system within an organization that is used to process data and provide information for making the right decisions. The quality of the resulting information influences the human resources managing computers and the complexity and reliability of the devices, namely hardware and software. Controls in information systems are grouped into two main parts, namely general controls and application controls.

General Control

General control is control that is applied to all activities and resources used in the development of an information system, implementation of processing and other supporting functions. In other words, general controls are controls that can be applied to all applications, and form an important part of the existing control framework.

Examples of general controls are provisions for monitoring activities, administrative policies regarding documentation, system development practices, error correction policies and procedures, and policies for internal auditing of information systems.

The general information system control objectives are to provide an overall framework for information systems activities and to provide a reasonable level of assurance that the overall internal control objectives are being achieved.

Application Control

Application controls are controls created over a particular application system in order to ensure that all transactions are authorized, recorded and processed in a complete, accurate, and on time. Based on Statement of Auditing Standards (SAS) No. 3 application controls are grouped into three parts, namely input controls, process controls, and output controls. The objective of information systems application controls is to establish specific control procedures over accounting applications to provide reasonable assurance that all transactions are authorized and recorded and processed in full, accurately and on a timely basis.

Information System Auditor Education

Changes in audit techniques with the help of software due to the implementation of computerized systems in organizations require specialists in the field of information system auditing.

Boritz and Carnaghan (2003) discussed that knowledge is an important part of professional competence, while knowledge of certain areas may be less related to acceptable performance (Klemp, 1977). It is also true that competency development starts with knowledge and understanding (Carr, 1993). Knowledge and understanding can be obtained by prospective auditors of accounting information systems through formal education or college. That way, prospective accounting information system auditors can improve their competence while working, so that their performance is high.

Hunton, Bryant, and Bagranoff (2004) stated that to become a professional accounting information system auditor, one must at least have a bachelor's degree. Generally, accounting information system auditors come from an educational background in information systems, information technology, or from an educational background in accounting.

The educational background of different accounting information system auditors, namely information systems, information technology, or accounting, has a different focus of knowledge and understanding. Therefore, the competencies possessed by individuals are different. Differences in individual competencies that come from different educational backgrounds can lead to different performance in terms of being a professional accounting information system auditor.

The researcher took the educational curriculum at the University of Indonesia which has the three educational programs, namely information systems, information technology, and accounting as a reference for analysis. Information systems majors have qualifications or graduate profiles to become computer graduates who are able to keep up with rapid developments in the field of information systems and information technology, and are able to work according to professional ethics. This is in designing, implementing and managing information systems on a large scale according to the business needs of the organization. In addition, graduates are also able to create information technology solutions to improve organizational performance.

For information technology majors, graduates are projected to become computer graduates who have reasoning and critical thinking skills to analyze a problem and design information technology-based solutions. Information technology graduates have the skills and experience in developing information technology-based systems according to the needs of industry, government, and society in general. Information technology graduates from the University of Indonesia can keep up with rapid developments in the field of computer science and information technology. In addition, graduates are able to communicate effectively, work in teams, have ethics, and behave professionally in a competitive global environment.

The accounting department at the University of Indonesia forms its graduates to be able to compete globally. Accounting graduates can lead the development of accounting science and practice in Indonesia and the results are of global benefit. In addition, accounting graduates can participate in realizing civil society.

Professional Certification

Bassellier, Reich, and Benbasat (2001)expands on Carr's (1993) perspective by emphasizing the need for a multidimensional view of knowledge and performing tasks in the context of managerial competence in an information technology environment. Accounting information system auditors must increase their knowledge by understanding how to perform information system audit tasks. This can be obtained through education through professional certification.

One of the requirements to practice public accounting is to have a certificate as an accountant, while information systems auditors must have a certificate obtained by taking an exam held by the EDP Auditor Association (EDPAA). This organization has now changed its name to ISACA (Information System Audit and Control Association). The certificate for an information system audit is called CISA (Certified Informations System Auditor) issued by ISACA, which is recognized internationally.

In order to obtain the CISA certificate, the auditor must pass an exam administered by ISACA and have 5 years of experience in the field of information systems audit. The CISA certificate is no longer valid if the auditor does not meet the requirements to attend a minimum of 20 hours of continuing education each year or a minimum of 120 hours for 3 years. This is because every CISA certificate holder is required to have a high level of professionalism because the development of information systems audit is closely related to developments in information technology and computers, which are developing very fast. Without attending further education organized by ISACA, the auditor's knowledge of information systems and information technology audits will be increasingly inadequate, so that the auditor is considered to be no longer competent to hold a CISA certificate.

Information System Auditor Performance and Attribute Theory

Performance effectiveness refers to how well a particular task is performed in relation to the criteria. For the auditor, the quality of the work is assessed by looking at the accuracy of the answers given by the auditor for each audit assignment.

Bonner and Sprinkle (2002) state that there are three variables that can affect performance, namely: people, tasks, and environment variables. People variables include attributes that a person has prior to performing a task such as knowledge content, organizational knowledge, abilities, self-confidence, cognitive style, intrinsic motivation, cultural values. Task variables include factors that vary both within and outside of the task, such as complexity, presentation format, processing and standby mode response. Meanwhile, environmental variables include all conditions, circumstances, and influences around people who perform certain tasks, such as time pressure, accountability, goals set and feedback.

Previous Research

Ye, Cheng, and Gao (2014) investigated the relationship between auditor characteristics and audit failure. The auditors studied were financial auditors where characteristics were measured through education and experience. They found a negative correlation between experience and audit failure and also tended to be negative for education and audit failure. Audit failure is evidence that the auditor does not have the ability or good performance in carrying out audit duties. Although many factors can affect audit performance besides the education and experience of the individual auditor. Another influencing factor according to Ye, Cheng, and Gao is the factor of auditor independence. The same thing happened with the audit of accounting information systems where there is also an auditor's code of ethics in which the accounting information system auditor is required to remain independent in carrying out this audit task. Regardless of the issue of the code of ethics, the education of an auditor certainly affects the profession and performance in carrying out the profession as an auditor.

Boritz and Carnaghan (2003) discussed that knowledge and education are important parts of professional competency. Carr (1993) adds that competency development begins with knowledge and understanding. To have professional competence, a person needs education. Education will help to develop competency. The more someone has professional competence, the performance will be superior.

Hunton, Bryant, and Bagranoff (2004) state that the IT auditor profession can come from a variety of educational backgrounds, most commonly auditors are graduates majoring in information systems, information technology and accounting. The three majors are clearly different but can perform the same profession, so this study will investigate the influence and differences in educational background on auditor performance.

The curriculum for the information systems and information technology major does not study applicable accounting standards (PSAK) and how to make financial reports (Strong and Portz, 2015). The accounting education curriculum also includes lessons on technology and systems related to accounting. While the information systems and information technology department clearly did not study accounting, especially the process of making financial reports.

The relationship of educational background to the performance of accounting information system auditors

Advances in information technology are developing very rapidly, often even exceeding the control system or control system (CS). (Ryan and Bordoloi, 1997). This causes accounting information system auditors to be required to have competence in recognizing and examining threats and risks related to control systems or Control Systems (CS) in information technology environments (Hayale and Abu Khadra, 2008).

Boritz and Carnaghan (2003) found that knowledge and education are important parts of professional competency. This study focuses on the educational background of accounting information system auditors. The characteristics needed to become an accounting information system auditor are not only having the ability to understand technology but also understand the process of preparing financial reports and business processes.

According to Hunton, Bryant, and Bagranoff (2004), the IT auditor profession could have an educational background in information systems, information technology or accounting. Therefore, this study wants to investigate whether accounting information system auditors with accounting backgrounds have differences from accounting information system auditors who come from information systems or information technology backgrounds.

Based on what has been described, the research hypothesis is as follows:

H0: There is no difference in the performance of accounting information system auditors between information systems, information technology, and accounting educational backgrounds.

Ha: There are differences in the performance of accounting information system auditors between the educational backgrounds of information systems, information technology, and accounting.

3. METHOD

This study will take a population of external auditors of accounting information systems who audit information systems who work at KAP AIS Jakarta (names pseudonym). The sample to be used in this study will be selected using purposive sampling. The sample selection on this criterion is limited by the position level of the accounting information system auditor, namely assistant/staff, senior, manager, and senior manager. Partner and internal job levels were not included in the research sample because performance

ratings were not available. The total population of the study was 123 accounting information system external auditors who worked at AIS KAP with a breakdown of position level composition as follows:

Table 1 study population

Partners/Principals	2
Senior Manager	8
Manager	14
senior	48
Staff/assistant	47
Internal	4
Number of study population	123

The data used in this study are primary and secondary data taken from the company's internal data at KAP AIS Jakarta. Primary data comes from interviews with AIS KAP Partners. While secondary data is in the form of personal information of individual information system auditors and auditor performance assessed through job performance ratings. The type of research data is qualitative (non-metric) such as gender, educational background (university and major), masters, and professional certification. In addition, this study also uses quantitative data types (metrics) such as age, training, and information system audit performance appraisal ratings. Based on the time of collection, the data used is cross-sectional data. This data is confidential, so it will be kept confidential only for research purposes.

Model this research are as follows:

Information:
$\boldsymbol{\beta}_0$,$\boldsymbol{\beta}_1$, …,$\boldsymbol{\beta}_n$= constant
Performance = Performance rating value of the accounting information system (SIA) auditor at KAP AIS Jakarta.
Accounting = dummy variable which will be given a value of 1 if the AIS auditor majored in accounting, if not, then a value of 0 will be given.
SI = dummy variable which will be given a value of 1 if the AIS auditor graduated from an information system major, if not, then a value of 0 will be given.
IT = dummy variable which will be given a value of 1 if the AIS auditor graduated from an information technology major, if not, then a value of 0 will be given.
Training = number of training hours attended by SIA auditors related to professional education. The training is provided by KAP AIS.
Age = age of the SIA auditor.
Female = dummy variable which will be given a value of 1 if the AIS auditor is female, otherwise it will be given a value of 0.
Master = dummy variable for the title of the information system auditor, if S2 is given a value of 1, otherwise it will be given a value of 0.
Certificate = dummy variable that will be given a value of 1 if the SIA auditor has professional certification related to accounting information system audit work, if not, then a value of 0 will be given.
Ɛ= Errors that occur in KAP AIS.

Initially, the research model referred to previous research that investigated the effect of general auditor characteristics on audit failure (Ye, Cheng, and Gao, 2014). Then the research model was submitted and discussed with partners from KAP AIS to determine a suitable and appropriate measurement method, the availability of data was also included in the consideration of forming a research model design.

Ye, Cheng, and Gao (2014) examined the failure of financial audits by individual general auditors, while this study took the performance object of individual accounting information system auditors. Ye, Cheng, and Gao (2014) define penalty as the failure of an audit carried out by an individual auditor as the dependent variable. Different from these studies, this study does not make audit failure the dependent variable, but success is measured by the performance of accounting information system auditors.

Ye, Cheng, and Gao (2014) took the study population by looking for audit failures registered in China. In China, lists and personal data of general auditors who have failed audits are available, making it possible to use them as benchmarks or the dependent variable. While this research will only take auditor performance data.

The research model of Ye, Cheng, and Gao (2014) includes accounting variables which indicate if the auditor has an educational background in accounting or auditing. This study wanted to see the effect of the educational background or major of the accounting information system auditor on their performance in carrying out accounting information system audit assignments, so that in this study 2 independent variables were added, namely information systems and information technology as a measurement of the auditor's major or educational background.

Then the variables of training and professional certification (certificate) are also added to the research model with the consideration that these two factors affect the performance of accounting information system auditors. While the experience variable is not used in this research testing model due to unavailability of data. KAP AIS personnel data only prepares data on the date, month, and year the accounting information system auditor joined to work in the AIS KAP company. The accounting information system audit project that had been previously handled by the accounting information system auditor could not be obtained. Therefore, researchers have limitations to fulfill the experience variable of accounting information system auditors at AIS KAP. Instead, researchers use the age variable to represent an overview of experience.

To include elements of position level in the operational dependent variable, namely the performance of accounting information system auditors, the performance rating data needs to be recoded or changed for statistical processing purposes. Taking into account the purposes of statistical processing. The researcher formulates the recording by considering the existing skill values in the framework of performance indicator criteria and discussing with AIS KAP partners. The researcher formulates the recording performance rating of the accounting information system auditor, as follows:

Table 2 *Rating Rating*Performance

Ratings	**Staff/assistant**	**senior**	**Manager**	**Senior Manager**
1	1			
2	2	1		
3	3	2	1	
4	4	3	2	1
5	5	4	3	2
6		5	4	3
7			5	4
8				5

Ratings the original value performance issued by the AIS KAP company is 1 to 5 for each position level. The accounting information system auditor will be given a score of 3 if it meets expectations or is in accordance with the standards expected by the AIS KAP company. To get a rating of 4, the information system auditor must exceed the company's expectations. For example, the proficiency score of the position level of the staff/assistant auditor of the accounting information system is 1, if an individual can achieve a proficiency score of 2, then the individual is considered to have exceeded the company's expectations. Thus the company will recognize the individual performance of the accounting information system auditor by giving a performance rating of 4 exceeding the standard at the position level of staff and assistant groups.

Accounting in this study is an independent variable. Measured using a dummy variable which will be given a value of 1 if the accounting information system auditor comes from an educational background/accounting graduate and is given a value of 0 if not from an accounting background. This variable aims to determine the effect of the educational background of accounting on accounting information system audit performance.

SI is the independent variable in this study. Measured using a dummy variable which will be given a value of 1 if the accounting information system auditor comes from an educational background/graduate of information systems and is given a value of 0 if not from an information systems background. This variable aims to determine the effect of the educational background of the information system on the performance of accounting information system audits.

IT is another independent variable included in this research model. Measured using a dummy variable which will be given a value of 1 if the accounting information system auditor comes from an educational background/information technology graduate and is given a value of 0 if not from an information technology background. This variable aims to determine the effect of educational background from information technology on accounting information system audit performance.

The training variable controls the length of training that the information system auditor has obtained which is directly related to his work and duties in auditing accounting information systems. Calculated in hours. The training is provided by KAP AIS. Annually, KAP AIS targets accounting information system auditors to attend a minimum of 40 hours of training.

The age variable of the SIA auditor is used to measure the age of the information system auditor who works at the AIS KAP. The way to calculate this variable is years. The year is the birth year of the information system auditor.

The female variable is a dummy variable which will be given a value of 1 if the information system auditor is female and given 0 if it is male. Ye, Cheng, and Gao (2014) found that general auditors who are female are positively correlated with audit failure.

The master variable is a dummy variable that will be given a value of 1 if the accounting information system auditor has completed a master's or master's degree. Accounting information system auditors will be given a value of 0 if they are not yet masters/S2. This variable does not look at what education the information systems auditor took in his master's/master's education because there is no such data.

The variable of professional certification is a dummy variable which will be given a value of 1 if the information system auditor has a professional certification and a value of 0 if he does not have a professional certification. In this case, professional certifications are certifications issued by ISACA, namely Certified Information Systems Auditor (CISA), Certified Information Security Manager (CISM), Certified in the Governance of Enterprise IT (CGEIT), Certified in Risk and Information Systems Control (CRISC) and Framework Control Objectives for Information and Related Technology (COBIT).

4. RESULTS AND DISCUSSION

Table 2 shows the descriptive statistical results of all the variables in this study. Researchers realized that almost half of the total research sample, namely around 48% were information system auditors with an accounting education background. Thus, researchers will be careful to analyze and draw conclusions from the results of testing this research because it will have a biased effect because approximately half of the sample has an accounting education background.

Average the performance rating value of the information system auditor at KAP AIS is around 3.97 with the highest rating value of 7 and 3 for the lowest rating in all samples of this study. The rating value of 7 has been recorded for the purposes of statistical data processing which has been explained in chapter 3 of this study. In fact, KAP AIS gives a rating of 1 to 5 for each position level. However, researchers did not find rating values 1 and 2 in the research data. After interviewing partners from KAP AIS, researchers know that ratings 1 and 2 rarely occur if the auditor has passed or passed the KAP AIS acceptance selection test.

From Of all the research samples processed, the researcher found that the number of external auditors for the accounting information system of KAP AIS mostly had an accounting education background, which was approximately 48%. The number of auditors who have an educational background in information systems and information technology is the same, namely around 21% each. Meanwhile, approximately 10% come from other backgrounds or are not included in the category of accounting, information systems, or information technology. Other educational backgrounds who work as accounting information system auditors at KAP AIS are industrial engineering, banking finance, economics, international business, management, electrical engineering, and information management.

Average training hours followed by the research sample is around 54 hours, which means that on average of all samples, the information system auditor has reached the training hour target of the AIS KAP company, which is 40 hours per financial year. The minimum value of this variable is very far from the average, which is 3.5 hours. Researchers found that this happened to one person out of the entire sample, so that the average external auditor of the accounting information system had reached the target of attending continuing professional education (CPE) provided by the AIS KAP company. The CPE hours data in this study for the training variable is one year's data. The number of CPE hours is not accumulated from the time the auditor starts working at the AIS KAP, so the standard deviation of the training variable is relatively not too far between the level of staff and senior manager positions.

The maximum age of the auditors from the research sample is 41 years and the minimum age of the auditors is 22 years. The 41-year-old auditor is at the senior manager position level, while the 22-year-old

is an auditor with a staff/assistant position. The average age of the external auditor of the accounting information system at KAP AIS is around 27 years. This is because the proportion of the sample that consists of staff/assistant and senior positions is higher than the other two job levels, namely 39 people and 22 people.

Fromstaff/assistant to senior manager position levels, the proportion of accounting information system auditors at AIS KAP is more women than men. It can be seen in table 2 which shows that around 55% of the entire research sample are women. Meanwhile, the proportion of male accounting information system auditors is approximately 45% of the total sample.

The variable masters and professional certification (certificate) are very few in this study sample. This is because researchers only meet auditors who have taken a master's or master's degree at the level of manager and senior manager positions only. Likewise with the variables of professional certification. The researcher only found that accounting information system auditors who already have professional certification are managers and senior managers at KAP AIS. Therefore, around 10% of accounting information system auditors have a master's degree and around 11% of the total have a professional certification called CISA (Certified Information System Auditor) issued by an international accounting information system auditor organization, namely ISACA (Information Systems Audit and Control). association).

Table 3 Descriptive statistics

Variable	N	*Means*	*std. Deviation*	*Max*	*Min*
Performance	71	3.9718	0.97059	7	3
Accountancy	71	0.4789	0.50311	1	0
SI	71	0.2113	0.41111	1	0
IT	71	0.2113	0.41111	1	0
Other*	71	0.0986	0.30023	1	0
Training	71	54,157	32.6652	125	3.5
Age	71	26,577	4.42932	41	22
Woman	71	0.5493	0.50111	1	0
Masters	71	0.0986	0.30023	1	0
Certificate	71	0.11	0.318	1	0

*__Other__is a variable of educational background that is not included in the processing of this research data, because Other is an educational background/major that is not included in the category of Accounting, Information Systems, or Information Technology.

Hypothesis testing

The null hypothesis of this study (H0) suspects that there is no difference between the performance of an individual accounting information system auditor who comes from an educational background in accounting, information systems, or information technology. The three educational backgrounds do not differ in the formation of a good accounting information system auditor. If the null hypothesis is not proven, the researcher prepares an alternative hypothesis (Ha). In the alternative hypothesis of this study, it states that there are performance differences between individual accounting information system auditors who come from an educational background in accounting, information systems, and information systems technology.

Table 4 Multiple Linear Regression Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	std. Error	Betas		
(Constant)	0.492	0.91		0.54	0.591
Accountancy	-0.302	0.264	-0.157	-1,147	0.256
SI	-0.175	0.295	-0.074	-0.593	0.556
IT	0.17	0.292	0.072	0.581	0.563
Training	0.007	0.002	0.25	3.152	0.002
age	0.114	0.033	0.521	3,491	0.001

Female	0.154	0.157	0.08	0.984	0.329
Masters	0.176	0.298	0.054	0.589	0.558
Certificate	0.775	0.404	0.254	1921	0.059

Based on the results of testing using linear regression shown in table 3, among the three variables of educational background, namely accounting, information systems, and information technology, did not show a partially significant effect on the performance of accounting information system auditors. The significant value of the three educational background variables is greater than 0.05. This can be interpreted that the educational background of accounting, information systems, and information technology does not have a significant influence on the performance of accounting information system auditors. The conclusion that can be drawn is that H0 cannot be rejected because based on the results of statistical testing, the research data does not consistently support the alternative hypothesis.

With this it is said that the results of testing this study indicate that there is no significant difference between the educational background of accounting, information systems, and information technology on the performance of accounting information systems auditors at AIS KAP. In addition, the test results also show that there is no significant effect of educational background on the performance of accounting information system audits.

In their writings, Hunton, Bryant, and Bagranoff (2004) stated that accounting information system auditors must at least have a bachelor's degree, generally coming from an educational background in information systems, information technology, or accounting. Even so, in this study there is not enough evidence to prove that there are differences in educational background on the performance of accounting information system auditors in carrying out their duties.

The accounting information system auditor profession is required to have competence in recognizing and examining threats and risks related to control systems or Control Systems (CS) in the information technology environment (Hayale and Abu Khadra, 2008). However, often information technology is developing faster than the progress of CS or control systems (Ryan and Bordoloi, 1997). This is why the auditor needs to develop his competence by studying rapidly developing and sophisticated technological advances so that he can competently carry out his duties as an accounting information system auditor. This may be what makes educational background not have a significant effect on the performance of accounting information system auditors.

The researcher then interviewed AIS KAP partners apart from being AIS KAP owners who expect the performance of accounting information system auditors, but also as experts in the field of information system auditing. This interview was conducted to find out opinions or explore conjectures why different educational backgrounds do not result in differences in the performance of accounting information system auditors. During the interview, the researcher provided an educational curriculum originating from the University of Indonesia, specifically the educational background of information systems, information technology and accounting. The results of interviews with AIS KAP partners, namely he said that education in Indonesia, especially for majoring in information systems, information technology, and accounting are still lacking in certain matters that are felt to be very important to influence performance as an auditor for accounting information systems. Knowledge or deficiencies that especially need to be added to the curriculum immediately are knowledge or skills regarding auditing, especially risk-based auditing.

Education in Indonesian this case the information systems, information technology, and accounting departments should provide training to students who wish to become auditors of accounting information systems regarding risk management which leads to risk-based auditing. An understanding of risk management and risk-based auditing fosters and sharpens a sense of professional skepticism, a character that is highly needed to become an auditor. According to AIS KAP partners, apart from being the latest ISA regulations, risk-based audits are considered to be the most effective way of controlling and auditing. If individuals can have a sense as an auditor, namely professional skepticism, then the ability to analyze threats that may arise in information technology will be sharp or increase, so this is important according to AIS KAP partners.

In addition, it is also a good idea for undergraduate graduates to be equipped with knowledge about regulations and certain industries. For individuals who come from an educational background in accounting, in addition to learning accounting standards in Indonesia, namely PSAK, to become an information system auditor, individuals should study regulations while in college, especially regarding banking regulations issued by Bank Indonesia (BI) regarding information system audits, for example BI issues regulations regarding e-money, it is hoped that individuals already have knowledge of regulations

like this. In addition to banking regulations, accounting education in Indonesia should have provided provisions regarding standards issued by the Government or Financial Institutions,

According to AIS KAP partners, understanding of the business industry greatly influences the performance of accounting information system auditors. Information technology is created to support business. If individuals have an understanding of the business industry, individuals can find out what kind of technology can support and assist the business. Candidates for accounting information system auditors are expected to have an overview or understanding of the industry before becoming an information system auditor profession, especially for industries that depend on the existence of information technology. Some industries that depend on technology are the banking, telecommunications, and manufacturing industries.

partnersKAP AIS also added about the use of the case study method for learning, especially in terms of the latest technology trends. Case studies are designed for students to analyze the risks that can arise from the latest trending technologies. In addition, education in Indonesia, according to AIS KAP partners, only provides basic knowledge about integrated systems (Enterprise Resource Planningor ERP), it would be better to provide guidance and knowledge on how to audit ERP as an example. If you learn about security, also learn about cybersecurity which is the current trend.

Furthermore, researchers looked at the influence of other independent variables arranged in this research model, namely the variables of training, age, woman, masters, and professional certification. From table 3 the researcher saw that there was a significant influence of the training variable and the age variable on the dependent variable, namely the performance of the accounting information system auditor. This can be seen from the significance value of the training variable which is equal to 0.004 and the age variable is 0.000 which is smaller than the significance value of 0.05.

Bonner and Sprinkle (2002)states that performance is influenced by the attributes of people, tasks, and the environment. This research focuses on the theory of people's attributes or internal factors, but does not examine by looking at task and environmental attributes or external factors. From the attributes of people, namely educational background, it was found that there was no effect of educational background on the performance of accounting information system auditors. With this it is said that differences in educational background have no effect on differences in the performance of accounting information system auditors.

Control Variables

Based on the results of linear regression testing as shown in table 3, the control variable is the training provided by the AIS KAP company itself to its accounting information system auditors and the age variable of the information system auditor has a significant effect and has a positive coefficient value on the performance of the accounting information system auditor at AIS KAP.

Training Variables

Accounting information system auditor training provided by KAP AIS with continuing professional education (CPE) has a positive and significant effect on the performance of accounting information system auditors of 0.007. This means that each additional hour of CPE training from KAP AIS can increase the performance of accounting information system auditors by 0.007. The results of this test are in accordance with the researchBoritz and Carnaghan (2003) who found that professional competence can be obtained with knowledge and understanding. The training provided by KAP AIS related to the profession increases the knowledge and understanding of accounting information system auditors, so that the professional competence of auditors increases and their performance also increases.

Variable Age of Accounting Information System Auditor

The age variable of the accounting information system auditor also represents the experience of the auditor in general. This variable has a significant effect and has a positive coefficient value on the dependent variable. The test results show that each additional one year of accounting information system auditor age can improve performance by 0.163. The age of the accounting information system auditor here can describe his experience because the older the auditor gets, the more projects he does, the more training he gets, so he has more knowledge and experience. The results of this test are in accordance with the researchBoritz and Carnaghan (2003) that there is a positive relationship between knowledge and professional competence. This is also supported by research by Ye, Cheng, and Gao (2014) who found experience to be negatively correlated with audit failure.

Variable Gender Female

In Ye, Cheng, and Gao's research (2014) found that female auditors are positively correlated with audit failure. Ye, Cheng, and Gao then explain that audit failures occur because female auditors can contribute to greater discretion in financial reports. Researchers initially predicted that female auditors would have negative performance. The researcher grouped female accounting information system auditors using a dummy variable, where the auditors were given a value of 1 if they were women. The test results in this study in table 3 show that there is no significant effect of the female variable on performance. This indicates that there is no significant relationship between gender and the performance of accounting information system auditors.

Variable Education Master or S2 (Master)

Masters or Masters education variable has no significant effect based on linear regression statistical tests. In Ye, Cheng, and Gao's research (2014) the master variable also does not significantly affect audit failure. This could be due to the data of this study. Few of the samples who took master's or master's education were as big as0.0986 or about 7 people from 71 accounting information system auditors who are the object of this study.

Professional Certification Variable

From the test results, this variable is not proven to significantly affect the performance of accounting information systems auditors.

5. CONCLUSION

Different educational backgrounds such as accounting, information systems, and information technology do not significantly influence the performance of accounting information systems auditors at KAP AIS. In the writings of Hunton, Bryant, and Bagranoff (2004) which states that auditors for accounting information systems generally come from educational backgrounds in information systems, information technology, or accounting, it turns out that in AIS KAP companies it is not proven that there are performance differences between accounting information system auditors with different backgrounds. his education. This might happen because as stated by Ryan and Bordoloi, 1997 that the development of information technology is developing very quickly and rapidly, even surpassing the development of the technology control system itself.

Training *continuing professional education* (CPE) provided by KAP AIS to its accounting information system auditors has a positive influence on auditor performance. The more training provided by KAP AIS, the better the performance of accounting information system auditors at KAP AIS. This is in accordance with researchBoritz and Carnaghan (2003) stated that professional competence can be obtained with knowledge and understanding. The training provided to accounting information system auditors by KAP AIS adds to the knowledge and understanding of the profession.

The age of the accounting information system auditor has a positive effect on the performance of the accounting information system auditor. The age variable in this study wants to describe the experience of accounting information system auditors in general because people with the same age do not necessarily have the same experience. However, it is clear that at different ages, the levels of positions in AIS KAP companies are different. As the information system auditor gets older, his experience increases, his knowledge also increases, his competence increases, so his performance also increases. This is in accordance with the research of Ye, Cheng, and Gao (2014) who found a negative correlation between experience and audit failure.

ACKNOWLEDGEMENTS

Thanks to Dr. Lianny Leo who has supervised, provided suggestions, and constructive input during the writing of this research. I would also like to thank AIS KAP Partners and auditors who have helped a lot in my research.

REFERENCE

[1] Bassellier, G., Reich B.H., & Benbasat I. (2001). Information Technology Competence of Business Managers: a Definition and Research Model. *J Manage Information System 17*, 82-159.

[2] Bonner, S. E., & Sprinkle, G. B. (2002). The Effects of Monetary Incentives on Effort and Task Performance: Theories, Evidenve, and a Framework for Research. *Accounting, Organizations and Society 27,* 303-345.
[3] Boritz, JE., & Carnaghan, CA. (2003). Competency-based Education and Assessment for the Accounting Profession: a Critical Review. *Canadian Accounting Perspectives 2*, 7-42.
[4] Carr, D. (1993). Questions of Competence. *Br J Educ Stud* 41, 71-253.
[5] Hayale, T. H., & Abu Khadra, H. A. (2008). Investigating Perceived Security Threats of Computerized Accounting Information Systems An Empirical Research applied on Jordanian banking sector. *Journal of Economic & Administrative Sciences* Vol. 24, No. 1, 41 – 67.
[6] Hunton, Bryant, & Bagranoff (2004). Core Concepts of Information Technology Auditing.
[7] Ikatan Akuntansi Indonesia. (2001). Standar Profesional Akuntan Publik per 1 Januari 2001. Jakarta: Salemba Empat.
[8] Klemp, G. (1977). Three Factors for Success in The World of Work: Implications for Curriculum in Higher Education. San Francisco: Jossey-Bass.
[9] Ryan S. D., & Bordoloi B. (1997). Evaluating Security Threats in Mainframe and Client Server Environments. *Information & Management,* Vol.32. Issue 3, 137- 142.
[10] Strong, & Portz. (2015). IT Knowledge: What Do Accounting Students Think They Know? Do You Know More Than I Do? An Exploratory Study. *Review of Business Information Systems.*
[11] Weber, R. (1998). EDP Auditing Conceptual Foundation and Practice. Second edition. New York: Mc. Graw Hill.
[12] Ye, K. Cheng, Y. & Gao, J. (2014). How individual auditor characteristics impact the likelihood of audit failure: Evidence from China. *Advances in Accounting, incorporating Advances in International Accounting 30,* 394–401.