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2021 Proceeding Publisher: Association for Computing Machinery, New York, NY, United States Conference: ICIBE 2021: 2021 the 7th International Conference on Industrial and Business Engineering • Macau China • September 27 - 29, 2021 ISBN: 978-1-4503-9064-4 Published: 09 January 2022

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Supporting Auditor Competence in the Digital Era 4.0 Through the Audit Learning System in Universities

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ABSTRACT

Technological developments in the Digital Era 4.0 affect various professional fields, including independent auditors. Auditing processes that were done by manual methods in the past are now conducted with advanced technology, and this has increased the demand for auditor competence. Therefore, this study aims to examine the audit learning system in universities to support the competence of auditors in the Digital Era 4.0 and obtain information technology knowledge. Furthermore, it should be used as input for developing curriculum in the Accounting study program. The sample was 182 respondents consisting of lecturers and students from public and private universities in Bandung, Indonesia. The results showed that the use, knowledge, skills, and learning factors of information technology related to auditing are very important in the audit learning system to support the development of auditor competence. Furthermore, the information technology knowledge and skills required are in using Microsoft Excel, SAP, ACL, and ATLAS software. These four software are the most widely used in financial statements and are considered the best in Bandung based on respondents' perceptions.

CCS CONCEPTS

• **General and reference** → Document types; General conference proceedings; • **Social and professional topics** → Professional topics; Computing education; Model curricula.

KEYWORDS

Competence, Auditors, Digital Era 4.0, Learning System

ACM Reference Format:

Santy Setiawan*, Hanny, Nunik Lestari Dewi, Rini Handayani, Endah Purnama Sari Eddy, and Marisi P Purba. 2021. Supporting Auditor Competence in the Digital Era 4.0 Through the Audit Learning System in Universities. In *The 2021 7th International Conference on Industrial and Business Engineering*

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ICIBE 2021, September 27–29, 2021, Macau, China

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ACM ISBN 978-1-4503-9064-4/21/09...\$15.00

<https://doi.org/10.1145/3494583.3494604>

(*ICIBE 2021*), September 27–29, 2021, Macau, China. ACM, New York, NY, USA, 8 pages. <https://doi.org/10.1145/3494583.3494604>

1 INTRODUCTION

The development of information technology has a significant effect on the accounting field, especially information systems. It causes changes in the recording of financial statements that were previously conducted by manual method to become computerized. This affects the practice of auditing in financial statements to be computerized [3].

An audit is an activity of collecting and evaluating evidence of information to report the level of conformity with established criteria [1], and the development of information technology has a significant effect on this field. Meanwhile, business processes that were conducted traditionally are now conducted using a computer, and this has resulted in different risks and controls [5].

Audit activities should be conducted by a competent and independent person, known as auditors. [1] It is classified into government, tax, internal, and public accountants or external auditors. This study focuses on public accountants or external auditors that are responsible for auditing financial statements [8].

The audit process, which was previously conducted through manual methods has changed along with the development of technology. Computerized-based information technology audits are used by public accountants to examine financial statements. Furthermore, auditors encounter different risks and internal controls for companies with computerized financial statements. Controls within the scope of information technology consist of general and application. General controls are related to the supervision and management of information technology, while application controls are related to the computer application process or technology program used [8].

The audit process using this technology should be supported by software to facilitate work performance. Currently, one of the software that is often used by companies is the Audit Command Language (ACL), which is designed to access data from various digital formats for comprehensive review [5].

In a study conducted by [7], entitled "An Examination of Student's Attitudes and Perception Towards Incorporating Computer Assisted Audit Techniques in An Undergraduate Auditing Course", Computer Assisted Audit Techniques (CAATs) were used to improve the efficiency and effectiveness of audit implementation.

Based on previous results, this study aims to determine the development of auditor competence in Digital Era 4.0 through the audit learning system in universities. The results are expected to be used for the development of the audit curriculum to produce competent future auditors candidates. The identification of the problem includes, what competencies and information technology knowledge should auditors have in the learning system of universities in the Digital Era 4.0?

2 LITERATURE REVIEW

2.1 Perception

Perception is a person's experience to describe a subject by hearing, seeing, touching, and feeling, and can also be defined as a series of processes to extract information and control actions [12].

Perception is assessed using psychophysical and physiological approaches. The psychophysical approach measures the relationship between a stimulus and an attitude response or perception, for example, a person sees an object using the sense of sight. Meanwhile, the psychological approach measures the relationship between responses and attitude, for example, someone sees an object based on thoughts, which may result in a different view [4].

2.2 Information Technology

Information technology refers to the communication and computerized systems within and outside the organization to make decisions, and it consists of hardware and software [14]. Information technology also refers to computer-based devices used to work on available information and support the processing procedures within an organization. Meanwhile, information systems collect, process, store, and analyze information for various specific purposes [11].

Information technology consists of computer and communication technology. Computer technology is a programmable, multipurpose machine that can receive and process data into usable information in the form of summaries or reports. Meanwhile, communication technology consists of equipment and electromagnetic systems used to convey information across various networks [18]. Information systems are divided into [9]:

1. People, such as the end-users.
2. Procedures, such as the rules or guidelines in using software, hardware, and data.
3. Software, which is a program that consists of step-by-step instructions about computer work to process information.
4. Hardware, such as equipment that processes data into information.
5. Data, such as raw materials, and unprocessed data, including text, images, numbers, and sound.
6. Internet, consisting of all information systems that can be conveyed to others.

The system designed to provide information to management consists of [14]:

1. Data acquisition devices used for data collection, such as keyboard and scanner.
2. Data processing devices used to process data into information, such as smartphones and laptops.

3. Output devices are used to obtain output from data processing (information) that can be used by users, such as printers and monitors.

4. Storage devices are used to store data, information, and results for later use, such as hard disks.

5. Communication devices are used to convey or transmit all data or information from one place to another through a computer network or modem.

6. Software, including all operating systems such as Windows, applications, communication, decision-making, database, and security software.

Technology has affected areas of the business environment by [10]:

1. Improving the ability to collect, store, analyze, and process data and information for decision-makers.

2. Significantly affecting the control process, especially with technology.

3. Influencing the audit profession regarding how the audit process is conducted and the knowledge needed to make conclusions whether the system or operational activities are effective, efficient and reports can be accounted for.

Technology strengthens an organization's internal control system, but can also pose new challenges. To deal with this, companies should implement information technology internal controls. Audit standards divide types of information technology system controls into [1]:

1. General Controls, consisting of all aspects of information technology functions, such as IT administration and segregation of duties; system development, physical and online security to access hardware, software, and related data; backups and plans for emergencies; as well as hardware control.

2. Application Controls operated at the business process level and are used to process transactions. It consists of controlling input, process, and output.

Many companies currently use Enterprise Resource Planning (ERP), and it is software that provides standard business functions in an integrated information technology system environment. ERP provides standard methods to process automation, such as human resource system information for payroll, and share information in real-time, such as financial reports and analysis. Some examples of ERP suppliers are SAP, Oracle, Microsoft [10].

2.3 Public Accountant

Information systems support many parts of the organization, especially in the fields of accounting and finance to see efficiency and effectiveness, therefore companies should control financial reports effectively. This can be controlled by conducting audit activities to monitor the use and assess the financial condition of the organization [11].

Auditors should be oriented to the concept of systems and operations to evaluate applications and practices of information technology [13]. Furthermore, they are expected to have good knowledge of information technology infrastructure, policies, and operations before the examination. In particular, auditors should have the ability to provide an overview of information technology controls in

an organization to protect data and be in line with organizational goals [10].

Education is also strongly influenced by information technology. The learning system that was previously conducted through manual method is now online. The use of information technology in universities is integrated with university curricula which allow students to study independently, automate learning tasks, and reduce lecturers' workload [18].

2.4 Research Framework

The Code of Ethics for the Accounting Profession subsection 113 on professional competence and due care states that auditors should maintain professional knowledge and expertise to ensure clients obtain competent services based on standards. Furthermore, auditors are also expected to develop their professional abilities on an ongoing basis [6]. The development of information technology affects the audit process which was previously conducted manually to become computerized with the help of audit software. This should be supported by the professional ability of an auditor or public accountant. A public accountant should know the field of auditing and be supported by knowledge of technology.

In a study [17] entitled "The Effect of Information Technology Utilization and Task Complexity on Auditor Performance" the use of information technology was shown to positively affect auditor performance when used effectively.

Based on the framework above, this study aims to determine the competencies that should be possessed in the learning system of universities from the perspective of lecturers and students. Furthermore, it determines the information technology knowledge that auditors should possess in Digital Era 4.0.

3 RESEARCH DESIGN

3.1 Research Sample

The sample was 182 respondents consisting of lecturers and students of Accounting in the city of Bandung. The lecturer was in charge of auditing courses and accounting information systems, and the students are those that have taken Auditing courses to understand the description of the work or profession of an accountant.

3.2 Research Method

The data collection technique was conducted by distributing a list of questions to respondents consisting of open and closed questionnaires. Open questionnaire means that respondents are allowed to answer according to their opinions, and for the closed types, they were given answer choices [16].

Initially, the results of the questionnaire were tested for validity and reliability. Accurate data provides an overview of the measured variables showing data with high validity, while reliability measures the extent to which the measurement results of a process can be trusted [2].

The validity test was conducted through an item analysis test by correlating the score on the item with the total score using product-moment coefficient analysis. The data is said to be valid when the product-moment correlation coefficient $< (5\%)$ (Suliyanto, 2018). Meanwhile, the reliability test was measured using Cronbach's Alpha, and when the value is > 0.7 then it is said to be valid [15].

The results were described descriptively to provide an overview of the various characteristics of the data in the sample [15].

4 RESEARCH RESULT

4.1 Perceptions of the Audit Learning System in Universities that can Support Auditor Competence in the Digital Era 4.0

This study measures the perception of the adequacy of the audit learning system in universities to support the competence of Auditors in the Digital Era 4.0. This was conducted by several indicators including perceptions of the use, knowledge, skills, and learning of information technology related to auditing. The indicator was measured by 31 questions that have been tested for validity. A result above 0.1447 was obtained, which means that the perception can be measured (Table 1). Furthermore, all instrument questions provided consistent results, and this can be seen in the reliability obtained. Therefore, this study instrument showed a high-reliability value because the Cronbach's Alpha produced exceeds the standard 0.7, which is 0.951 (table 2).

4.1.1 Perceptions on the Use of Information Technology in Audit Work. Based on data distributed to 182 respondents to check the importance of auditing in the Digital Era 4.0, 115 (63%) answered strongly agree and 66 (36%) answered agree Regarding the dependence of the usage of audit software on the type of industry, around 112 respondents (62%) answered agree and 62 (34%) answered strongly agree. Furthermore, 116 respondents (64%) answered agree and 56 (31%) answered strongly agree that the use of audit software depends on the size of the company being audited (auditee).

The results stated showed that the use of audit software is important in the Digital Era 4.0 since most respondents have similar perceptions. However, it depends on the type and size of the company being audited (auditee).

4.1.2 Perceptions on the Knowledge of Information Technology Related to Audit. Based on data distributed to 182 respondents, about 114 or 63% and 68 or 37% strongly agree and agree that auditors should have basic knowledge of computers, including the functions in conducting audit work. Furthermore, 120 (66%) and 61 (33%) respondents strongly agree and agree that auditors should have knowledge of basic operating systems in conducting audit work. A total of 91 respondents or 50% strongly agree and agree regarding the understanding of data structure and management that should be owned by the auditor. Meanwhile, 93 (51%) and 87 (48) strongly agree and agree that auditors should have knowledge of using software in conducting the audit planning stage. However, the remaining 2 respondents (1.1%) did not agree to this.

About 95 (52%) and 82 (45%) respondents strongly agree and agree that knowledge of how to use audit software in risk assessments is mandatory for auditors. However, about 5 (3%) respondents did not agree with this. Meanwhile, those that strongly agreed and agreed that auditors should have knowledge of how to use audit software in conducting the client acceptance process were approximately 86 (47%). Respondents that strongly agree and agree that auditors should understand the use of software in the audit evidence retrieval process, especially in the form of electronic, reached 100%.

Table 1: Validity Test Results

QUESTION	VALIDITY VALUE	DESCRIPTION
QUESTION 1	0.529**	> 0.1447 therefore, the data is valid
QUESTION 2	0.446**	> 0.1447 therefore, the data is valid
QUESTION 3	0.376**	> 0.1447 therefore, the data is valid
QUESTION 4	0.506**	> 0.1447 therefore, the data is valid
QUESTION 5	0.634**	> 0.1447 therefore, the data is valid
QUESTION 6	0.702**	> 0.1447 therefore, the data is valid
QUESTION 7	0.712**	> 0.1447 therefore, the data is valid
QUESTION 8	0.656**	> 0.1447 therefore, the data is valid
QUESTION 9	0.624**	> 0.1447 therefore, the data is valid
QUESTION 10	0.715**	> 0.1447 therefore, the data is valid
QUESTION 11	0.635**	> 0.1447 therefore, the data is valid
QUESTION 12	0.725**	> 0.1447 therefore, the data is valid
QUESTION 13	0.680**	> 0.1447 therefore, the data is valid
QUESTION 14	0.740**	> 0.1447 therefore, the data is valid
QUESTION 15	0.752**	> 0.1447 therefore, the data is valid
QUESTION 16	0.705**	> 0.1447 therefore, the data is valid
QUESTION 17	0.689**	> 0.1447 therefore, the data is valid
QUESTION 18	0.770**	> 0.1447 therefore, the data is valid
QUESTION 19	0.661**	> 0.1447 therefore, the data is valid
QUESTION 20	0.782**	> 0.1447 therefore, the data is valid
QUESTION 21	0.800**	> 0.1447 therefore, the data is valid
QUESTION 22	0.732**	> 0.1447 therefore, the data is valid
QUESTION 23	0.797**	> 0.1447 therefore, the data is valid
QUESTION 24	0.321**	> 0.1447 therefore, the data is valid
QUESTION 25	0.721**	> 0.1447 therefore, the data is valid
QUESTION 26	0.709**	> 0.1447 therefore, the data is valid
QUESTION 27	0.606**	> 0.1447 therefore, the data is valid
QUESTION 28	0.674**	> 0.1447 therefore, the data is valid
QUESTION 29	0.619**	> 0.1447 therefore, the data is valid
QUESTION 30	0.507**	> 0.1447 therefore, the data is valid
QUESTION 31	0.632**	> 0.1447 therefore, the data is valid

^a Source: SPSS output (2021).

Table 2: Reliability Test Results

Cronbach's Alpha Value	Description
0.951	> 0.700 therefore, the data is reliable

^a Source: SPSS output (2021).

A total of 103 (57%) and 79 (43%) strongly agreed and agreed that auditors should have sufficient knowledge in conducting digital reviews and analysis as well as online testing including documentation when conducting information technology audits. Meanwhile, 94 (52%) and 87 (48%) respondents strongly agreed and agreed that auditors should have sufficient knowledge in reviewing financial statement disclosures on websites. A total of 99% of respondents stated the same perception regarding the acquisition of knowledge to use email, mobile phones, digital assistants, and wireless networks. Furthermore, 99.5% of respondents have the same perception

that auditors should have basic knowledge of Electronic Data Processing system control. Similarly, approximately 98% stated that auditors should have knowledge of how to design audits in relation to the Electronic Data Processing system environment. Also, 99.5% have the same perception that auditors should understand changes or developments regarding the system, which occur within the scope of the audit. However, only 0.5% of respondents did not agree with that.

Therefore, most of the respondents have the same perception that auditors should have a lot of knowledge of information technology related to auditing. This includes knowledge of the basics and functions of computers; basic operating system; data structure and management, the use of audit software in the planning stage, risk assessment, acceptance of audit clients, and retrieval of electronic evidence. Furthermore, it includes the review and conduct of digital analysis and online testing, the review of financial statements on the website, the use of cell phones, email, digital assistants, and wireless networks such as EDP system control. It also includes the process to design audits and conduct supervision in relation to the EDP system environment, and understanding changes as well as developments in the system within the scope of the audit.

4.1.3 Perception of Information Technology Skills Related to Audit. From the results, 178 respondents had the same perception that auditors should have skills in using audit software to conduct the planning stage. It can be seen that the respondents that answered strongly agree and agree were 49% while the remaining 4 (2%) had the opposite perception. Furthermore, 49% of respondents strongly agree and 49% agree that auditors should have the skills to use audit software in conducting risk assessments. Then 76 strongly agree and 95 agree that auditors should have skills in using audit software for the client acceptance process.

A total of 181 out of 182 respondents strongly agree and agree that auditors should have skills in using audit software, especially in the retrieval of electronic and other evidence in connection with the process at the auditee company. About 49% of respondents strongly agree and 51% agree that auditors should have skills in using audit software. Furthermore, 95 respondents strongly agree, and 86 agree that auditors should have skills in the use of email, mobile phones, digital assistants, and wireless networks to support audit work. A total of 72 respondents strongly agree and 107 agree that they should have the ability to make audit designs and supervise the EDP system environment.

Regarding the relationship between KAP size and the skills to be possessed by the auditor, 57 respondents (31%) strongly agree and 82 (41%) agree that the KAP size determines the skills of information technology related to auditing. Meanwhile, about 36 respondents (20%) disagree and 7 (4%) strongly disagree with this

Therefore, perceptions of information technology skills related to auditing are quite diverse from the respondents' point of view, especially in the relationship between KAP size and the auditors' skills. Many respondents perceive that the KAP size determines the auditors' skills, while others perceive the opposite. While More than 93% had the perception that skills such as using audit software to perform planning; risk assessment; client acceptance; retrieval of electronic evidence; transaction assessment, digital analysis, and fraud review should be possessed. Almost all respondents had the perception that skills in using email, mobile phones, digital assistants, wireless data networks, and designing audits as well as conducting supervision in an EDP system environment should be possessed by auditors.

4.1.4 Perceptions of Information Technology Learning Related to Audit. The results showed that 96 respondents agree and 85 strongly agree that learning about audit software enriches the knowledge of techniques in auditing financial statements. Furthermore, 92 (51%)

and 90 (49%) respondents strongly agree and agree that learning about audit software increases the efficiency and effectiveness of audit work.

Most respondents have the perception that learning about the use of audit software should be conducted in the initial stage of learning basic principles of auditing. This data shows that 96 respondents (53%) agree and 79 (43%) strongly agree with this perception. Based on the results of data dissemination, about 91 respondents (50%) agree and 83 (46%) strongly agree that learning audit software should be given in Advanced Auditing or Audit 2 courses. This is because students have basic knowledge about the audit concept/principles, which will help them to learn the software. All respondents perceive that in studying audit software, students should be given a step by step guidance on the procedures.

Furthermore, the respondents had different perceptions regarding learning audit software through independent training. From the results, 1 respondent (1%) strongly disagree and 29 (16%) disagree that learning audit software would be easier through independent practice after getting instructions for using the software theoretically. Moreover, about 92 (50%) and 60 (33%) respondents agreed and strongly agreed that learning audit software will be easier after getting instructions. Therefore, the independent practice should be conducted by the respondents by using the software. A total of 105 respondents (58%) strongly agree and 74 (41%) agree that learning information technology related to auditing will make them superior in the world of work. On the contrary, 2 and 1 respondents disagreed and strongly disagreed with that assumption.

Therefore, the perception of learning information technology related to auditing received diverse perceptions from respondents, especially regarding learning through independent practice. This should be easier when respondents had received instructions for using the software theoretically. Almost all of them had the same perception that learning the software increases knowledge about audit techniques, and information technology increases efficiency and effectiveness in conducting audit work. Around 96% of respondents perceived that learning audit software will be more interesting when given in basic and advanced auditing courses. Furthermore, the courses should be conducted gradually under the guidance of an instructor. Almost all respondents agree that students' ability in using audit software provides added value/advantage in the world of work.

4.2 Information Technology Competencies that should be possessed by Auditors in an Audit Learning System in Universities

According to table 3, respondents perceive that auditors should possess competencies in information technology for auditing financial statements. The competencies cover knowledge and skills about Microsoft Excel, SAP, ACL, ATLAS, IDEA, APG, and Word. Meanwhile, about 90% have the perception that knowledge and skills about information technology regarding Microsoft Excel are mandatory.

The most common/widely used software in auditing financial statements are Microsoft Excel, SAP, ACL, and ATLAS with about 112,

Table 3: Knowledge and Skills about Information Technology for Auditing Financial Statements

Respondents' Answer	Frequency	Percent
ATLAS, SAP	1	1%
Audit Command Language (ACL)	5	3%
Audit Command Language (ACL), ATLAS	3	2%
Audit Command Language (ACL), ATLAS, SAP	2	1%
Audit Command Language (ACL), SAP	6	3%
Microsoft Excel	35	19%
Microsoft Excel, ATLAS	2	1%
Microsoft Excel, ATLAS, SAP	8	4%
Microsoft Excel, Audit Command Language (ACL)	11	6%
Microsoft Excel, Audit Command Language (ACL), ATLAS	8	4%
Microsoft Excel, Audit Command Language (ACL), ATLAS, SAP	38	20%
Microsoft Excel, Audit Command Language (ACL), ATLAS, SAP, IDEA, APG	1	1%
Microsoft Excel, Audit Command Language (ACL), ATLAS, SAP, word	1	1%
Microsoft Excel, Audit Command Language (ACL), IDEA	1	1%
Microsoft Excel, Audit Command Language (ACL), SAP	28	15%
Microsoft Excel, Audit Command Language (ACL), SAP, IDEA (Interactive Data Analysis Software)	1	1%
Microsoft Excel, SAP	29	16%
SAP	2	1%
TOTAL	182	98%

Table 4: The Most Common/Widely Used Software in Auditing Financial Statements

Respondents' Answer	Frequency	Percent
Answer/Don't Know	6	3%
Audit Command Language (ACL)	27	15%
ATLAS and ACL	2	1%
ACL, Microsoft Excel, SAP	1	1%
Acl, sap	2	1%
ATLAS	6	3%
ATLAS, Microsoft Excel, ACL	1	1%
Microsoft Excel	90	48%
Microsoft Excel and SAP	14	8%
Microsoft Excel and Word	1	1%
IDEA (Interactive Data Analysis Software)	1	1%
Microsoft Excel and ATLAS	2	1%
Microsoft Excel, ATLAS, and SAP	2	1%
Microsoft Excel, ACL	1	1%
SAP	26	14%
TOTAL	182	98%

45 34, and 13 respondents respectively. Meanwhile, the remaining respondents answered with other software, and this result is presented in Table 4

However, further results obtained from data dissemination showed that about 56 or 31% of respondents perceived that the best software for auditing financial statements using information technology was SAP, followed by ACL and excel software, each with 50 or 27% of respondents (Table 5).

Based on the respondents' perceptions, most of the competencies that should be possessed by auditors in conducting financial statement audits using information technology are knowledge and skills

on Microsoft Excel, SAP, ACL, and ATLAS software. Meanwhile, the most widely used software in auditing financial statements are Microsoft Excel, SAP, ACL, and ATLAS software. The respondents have the perception that the best software is SAP, ACL, and Microsoft Excel.

4.3 Discussion

4.3.1 *Perceptions on an Audit Learning System in Universities to Support Auditor Competence in the 4.0 Digital Era.* The development of the information technology in audit work, as well as knowledge, skills, and learning related to auditing are important in the learning

Table 5: The Best Software for Auditing Financial Statements

Respondents' Answer	Frequency	Percent
No Answer/Don't Know	14	8%
ACL	46	25%
ACL and ATLAS	2	1%
ACL, SAP	1	1%
ATLAS	15	8%
ATLAS DAN SAP	2	1%
MICROSOFT EXCEL	43	23%
MICROSOFT EXCEL DAN WORD	2	1%
MICROSOFT EXCEL DAN SAP	3	2%
MICROSOFT EXCEL, ACL	1	1%
MICROSOFT EXCEL, ATLAS	1	1%
IDEA	2	1%
SAP	50	27%
TOTAL	182	98%

system of Accounting study programs in universities. It produces future auditor candidates with competence according to the 4.0 Digital Era.

Based on the results, most respondents have the perception that audit software is important in the 4.0 Digital Era, and its use depends on the type and size of the company audited (auditee). Furthermore, they had the perception that auditors should have a lot of knowledge about information technology related to auditing. These include the basics and functions of computers; basic operating system; data structure and management, how to use audit software in the planning stage, risk assessment, audit client acceptance, electronic evidence retrieval; how to review, digital analysis, and online testing. Also, it includes how to review financial statements on the website; use of cell phones, email, digital assistants, and wireless networks; EDP system control; how to design audits and conduct supervision related to the EDP system environment; as well as system changes and developments within the scope of the audit.

There were different perceptions regarding information technology skills related to auditing. Many respondents perceive that the size of the KAP (Public accounting firm) determines the skills possessed by the auditors, while some perceive the opposite. Furthermore, auditors should possess skills in using audit software to perform audit planning; risk assessment; client acceptance; retrieval of electronic and other evidence; transaction assessment, digital analysis, and fraud review. They should also have other skills such as using email, mobile phones, digital assistants, and wireless data networks, as well as audit design and supervision skills in an EDP system environment.

From the response obtained, learning information technology in relation to auditing, especially audit software, through independent practice will be easier when the respondent has received instructions theoretically. This gets various responses from respondents. Almost all respondents have the same perception that learning audit software increases knowledge about the techniques. It will be more interesting and better when basic and advanced auditing courses are provided. All respondents perceive that information technology increases efficiency and effectiveness in conducting audit work,

and learning this software should be executed gradually with the guidance of an instructor. Almost all respondents agree that the ability to use audit software provides added value/advantage in the world of work

This result is consistent with the study [7], where students have a perception of the importance of knowledge and expertise about audit software to support the work of a public accountant. Moreover, this knowledge and skills should be included in the learning curriculum, especially in the audit curriculum. The application in auditing provides opportunities for students to study the concept effectively and efficiently.

4.3.2 Information Technology Competencies should be possessed by Auditor in an Audit Learning System in Universities. The study was performed on the competencies that should be possessed by auditors in conducting financial statement audits using information technology. From the respondents' perceptions, the auditors should have knowledge and competencies on Microsoft Excel, SAP, ACL, and ATLAS software. These four software are most widely used in auditing financial statements and are considered the best.

This is also consistent with the open-ended survey at the beginning of the questionnaire regarding the software mastered by the respondents. The results showed that Excel, SAP, ACL, and ATLAS are mastered by 172, 22, 10, and 8 respondents respectively. Furthermore, this is consistent with the study [17], where information technology affects auditor performance. This means that the knowledge should be introduced and included in the auditing lecture curriculum to equip students with information technology knowledge.

5 CONCLUSIONS

In conclusion, to support the audit learning system of universities in the Digital Era 4.0, it is necessary to pay attention to the knowledge, competencies, and learning of information technology related to auditing. Furthermore, the auditor in this era should master knowledge and competencies in using Microsoft Excel, SAP, ACL, and ATLAS software. The four software are the most widely

used in conducting audits of financial statements. In addition, they are considered the best software in Bandung, Indonesia based on respondents' perceptions in conducting tasks in the field of auditing.

ACKNOWLEDGMENTS

The authors are grateful to Maranatha Christian University, Bandung, Indonesia, for funding the study under the Research Funding Program with the number: 034/SK/ADD/UKM/VI/2021. Furthermore, the authors are grateful to the respondents that were willing to spend their valuable time filling out the questionnaire wholeheartedly.

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