Perceived ease of use and usefulness of big data to audit quality

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Abstract

Big data analytics are used extensively in industry 4.0, where technology is becoming more advanced and powerful, but also assists auditors in carrying out audit activities. This means that auditors must better understand how to use big data analytics and become proficient. Therefore, the purpose of this study is to ascertain whether the perceived ease of use and usefulness of big data analytics have an impact on the audit quality of an auditor. The new study's findings will be compared to those of earlier research to see if there is any consistency. This study's hypothetico-deductive approach led it to the conclusion that, while perceived usefulness had a statistically significant impact on audit quality, perceived ease of use had no statistically significant impact on audit quality. The organization must enhance the knowledge and expertise of its auditors in order for them to obtain the competencies that are necessary in industry 4.0.

Keywords: Audit Quality, Big Data Analytics, Perceived Ease of Use, Perceived Usefulness

INTRODUCTION

The Revolution of Industry 4.0 has significantly improved efficiency and effectiveness in most leading industries, one of the example is the accounting profession (including public accountants in the financial sector), which is automated using computers and technology in its job (Akhter & Sultana, 2018). The use of big data analytics has an important role in the era of industry 4.0, where technology is advancing and supports auditors in carrying out audit activities like giving a real-time assessment of a change or development in a more comprehensive organization. Rezaee & Wang (2017) claim that while big data applications are still in their early stage in the accounting industry, there are prospects for auditors to further their careers due to the necessity of big data and data analytics. Because of this, auditors must learn how to use big data analytics and become proficient in doing so.

The use of big data analytics in auditing allows auditors to focus more on core responsibilities, such as data analysis. In addition, the existence of big data analytics to support auditors in the auditing process also needs to be supported by the auditor's skills in using it. The use of big data analytics needs to be considered in the audit process and its relation to actual audit procedures from a technical point of view, particularly the capability of big data analytics to provide a way to improve audit quality. (Salijeni et al., 2019)

In their study using the SmartPLS software, Al-Ateeq et al., (2022) reached the conclusion that perceived usefulness and usefulness directly affect audit quality. However, the application of big data analytics has moderated relationship between perceived usefulness, but reveals no correlation between perceived ease of use and audit quality. According to this, this study uses SPSS (Statistical Package for Social or Science) version 26 to examine whether the findings of earlier study are consistent.

Based on the Technology Acceptance Model (TAM) on the dimensions of perceived ease of use and perceived usefulness, a research question, "Does perceived ease of use and usefulness of big data analytics have an impact on audit quality?" was developed. The findings of this study should help businesses, especially Public Accounting Firms (KAP), to pay more attention to concerns related to the application of big data analytics and its implications related to its convenience and usefulness for auditors.

LITERATUR REVIEW

Technology Acceptance Model (TAM)

Fred Davis first introduced the Technology Acceptance Model (TAM) in 1986. The use of this technology represents an advancement of The Theory of Action. A paradigm for assessing technological acceptance that establishes a person's level of acceptance of technology is known as the Theory of Rational Action. The Technology Acceptance Model's purpose is to explain the factors that affect how information technology is adopted. (Dian, 2016)

According to Gusni et al, (2020) the first factor, namely Perceived Ease of Use is a condition that refers to the extent to which a person believes that the use of a certain system will not require any effort. In other words, if the use of an information system is easy to use, then that person will use it. Second, Perceived usefulness is defined as the degree to which auditors believe that the use of a particular information system will improve its performance. Use that does not require hard work, so that the resulting performance will be maximized.

Big Data Analytics

Big Data informs and influences companies in making decisions that are important to the company's internal and external stakeholders, auditors need to expand the scope of existing data analytics (Cao et al, 2015). A certain size of data is determined if it limits the ability of the information system to operate the data. In this context, the use of the term Big Data means the limited amount of data that can be stored and/or processed by the relevant information system.

Big Data Focus on Accounting and Audit Science

Veracity and the value or cost benefit of data collecting are frequently the key areas of emphasis in accounting. Since the 1990s, volume and veracity existed when enterprise systems (as well as some legacy systems) were created to handle large volumes of transactions and information flows between companies. For this, some argue that the biggest difference with Big Data is the greater diversity of data (Zicari, 2013), including data generated by externals through various sources, including web pages, text, Internet of Things (IoT), RFID, sensors, and other elements/resources.

Big Data in Accounting Practice

Big data can be very useful in accounting practice, tasks related to financial functions and management accounting will be automatically loaded into the information system in the future. The duties of accountants are changing because they are not only responsible for accounting functions, but also take on a more proactive and strategic role (Gamage, 2016). The integration of finance, technology, and information in big data presents opportunities and challenges for the accounting profession. Measures of financial and non-financial renewal should be developed, and new standards are required to standardize these measurements. (Vasarhelyi et al., 2015).

Five Characteristics of Big Data

The emergence of big data is very important today, where the ability of big data technology to store, manage, search, and manipulate data. In its development, big data is divided into 5 main characteristics (Hadi et al, 2015).

First characteristics is Velocity. Big data technology velocity is a process that refers to the time to process a piece of data, and the data is shown in a short time. Sometimes certain actions definitely demand a quick response. Where the speed in processing data will maximize the work efficiency of each individual, this rapid data causes the flow of big data to need to be analyzed to ensure that an organization can use information to the fullest. Second is Volume, Big data technology volume is a collection of the amount of data owned or collected by a company, where the amount of data collected must be used further to obtain important information. An organization that expands over time will also accumulate more data. Additionally, data development happens on the internet just as quickly as it does in organizations.

The third characteristics is Variety, variations of big data technology are a type of data contained in big data technology. The available data may be structured data or unstructured data. The variety of

data contained in big data technology is very diverse such as determination, data, sensors, audio, video streaming, log files, et al. Fourth is Value, refers to the important features of the data defined by the added value that the collected data can bring to the desired predictive process, activity, or analysis/hypothesis. The value of the data will depend on the event or process it represents such as stochastic, probabilistic, regular or random. The need to gather all the data and store it for a longer period of time can be required depending on this. Last, Veracity. Refers to the degree to which a leader trusts information to make decisions. Therefore, finding the right correlation in Big Data is critical to the future of the business. However, because one in three business leaders distrust the information used to reach decisions, generating trust in Big Data presents major challenges as the number and types of sources grow.

Audit Quality
Audit quality, ccording to Tandiontong (2016), is the probability that an auditor would find and report errors and misappropriations that occur in a client's accounting system. Competence and independence are two factors that affect the audit's quality. With the good ability and competence of an auditor, it will result a good audit quality as well. Independent auditors will also be more trusted by clients because their opinions are not influenced by other parties.

Research Model

Figure 1. Research Model
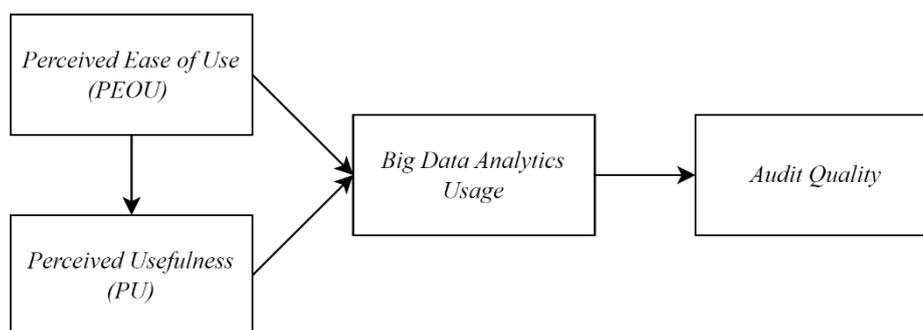
Source: Author's Processed Data

RESEARCH METHODS

In this research, will use the technique of hypothetico-deductive method. Dependent variable that is being used in this research is audit quality. Measurement of audit quality will be based on Indicator from Audit Quality on Accountants Public. Whereas the independent variable that is being used in this research is factors of Perceived Ease of Use and Usefulness of Big Data Analytics. The data will be processed by using likert scale (ordinal).

Primary data for this research is from survey data in the form of the questionnaire that has been distributed among several auditors in a KAP. Secondary data on research this will obtained with technique data collection through studies library. Data will be conducted processing with the SPSS (Statistical Package for Social or Science) version 26 program. The level of significance that will be worn in study is by 5%. Type of analysis that has been conducted is data quality test, classical assumption test, and simple linear regression test. Following is explanation method processing on the data that has been collected.

RESULTS AND DISCUSSIONS

The collection of research data was carried out by sending a questionnaire in the form of a Google Form which was distributed online, the questionnaire was distributed between October 20, 2022 and October 27, 2022. The questionnaire is distributed to auditors who are still employed by Public Accounting Firms, including Big Four Public Accounting Firms and non-Big Four. The following is a detailed diagram of the total respondents from the study conducted:

Figure 2. Respondent Age
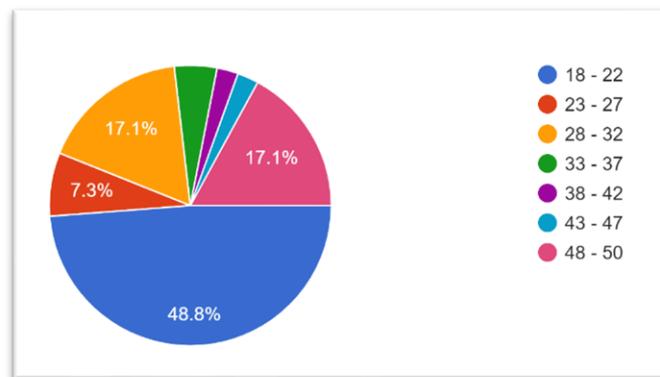
Source: Author's Processed Data

Based on the questionnaire data obtained, there were 20 (twenty) or 48.8% of respondents aged 18-22 years, 3 (three) or 7.3% of respondents aged 23-27 years, 7 (seven) or 17.1% of respondents aged 28-32 years, 2 (two) or 4.9% of respondents aged 33-37 years, 1 (one) or 2.4% of respondents aged 38-42 years, 1 (one) or 2.4% of respondents aged 43-47 years, and 7 (seven) or 17.1% of respondents aged 48-50 years.

According to the r. count of these variables exceeding the r. table value of 0.308 based on the Pearson Correlation for the N value of 41 respondents, all data on perceived ease of use, perceived usefulness, and audit quality are valid. Therefore, all questions will be included in the calculation of the reliability test. Perceived Ease of Use, Perceived Usefulness, and Audit Quality are reliable as seen by all Cronbach's Alpha values greater than 0.60, which is 0.852, 0.854, and 0.781 respectively. It can be concluded that the results of these tests are reliable to be used in research, where the research would still provide the same results when applied once again to measure the same object.

Asymptotic value the normality test results' significance value, or sig., is 0.200, which is greater than 0.05, indicating that the data have a normal distribution. The tolerance value is 0.443, which is larger than 0.10, while the VIF value is 2.256, which is less than 10.00. Therefore, it can be said that multicollinearity does not exist. Furthermore, the significant coefficients of the variables perceived ease of use and perceived usefulness, 0.880 and 0.122 respectively, are known to be higher than 0.05. It is evident that heteroscedasticity does not exist.

Table 1. Simple Linear Regression Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.554a	0.307	0.271	3.56139	
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	213.614	2	106.807	8.421	.001b
Residual	481.974	38	12.684		
Total	695.588	40			
Model	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t Stat	P-Value
(Constant)	16.597	2.8694		5.7842	0.0000
Perceived Ease of Use (X1)	0.1487	0.2099	0.1437	0.7085	0.4829
Perceived Usefulness (X2)	0.4326	0.2001	0.4386	2.1623	0.0370

Dependent Variable: Audit Quality (Y)
Predictors: (Constant), Perceived Usefulness (X2), Perceived Ease of Use (X2)
Source: Author's Processed Data

The results obtained for the data analysis that has been carried out, the regression equation resulting from data processing is as follows:

$$Y = 16.597 + 0.149 \text{ Perceived Ease of Use} + 0.433 \text{ Perceived Usefulness}$$

The constant value is 16,597. It may be argued that audit quality is worth 16,597 if perceived usefulness and ease of use are both 0. The Perceived Ease of Use regression coefficient value of 0.149 indicates a positive tendency, meaning that the quality of the audit will increase by 0.149 for each increase in Perceived Ease of Use by 1. The Perceived Usefulness regression coefficient value of 0.433 indicates a positive tendency, which means that the audit quality will increase by 0.433 for every 1 increase in Perceived Usefulness. The most dominant factor that affects the quality of audits in using big data analytics is perceived usefulness because the influence provided is significant with a P-value of 0.037.

It can be stated that the perceived usefulness and ease of use of using big data analytics has an influence of 27.1% based on the findings of the simple linear regression testing that was conducted. The Adjusted R Square value was found 0.271. This indicates that there is a positive correlation between the perceive of the ease of use and usefulness of big data analytics, especially towards audit quality. It also obtained a significance value of F of 0.001, indicating that the perception of the simplicity and utility of big data analytics is simultaneously influencing the quality of audits. Therefore, this answers that H_1 is accepted because the significance value of F is greater than the alpha of 0.05.

A p-value of 0.483 or greater than 0.05 in the perceived ease of use (X1) variable, or the value of the variable X1 did not significantly affect the dependent variable, audit quality. This is explained in an open-ended question to respondents who say that the use of big data in the audit process is not easy. Based on the respondent data that has been obtained, in general this is due to respondents who are old or who work as senior auditors who have to learn more, supported by insignificant statistical results. The statistical results, with a p-value of 0.037, are significant of the variable perceived usefulness (X2). (Manurung et al., 2022) assert that in order to ensure the effectiveness of the data collected, the use of village funds must be monitored closely in the same way that audit quality is.

CONCLUSIONS

The objective of the study is to be able to identify how the perceived usefulness and ease of use aspects of using big data analytics influence the quality of audits performed by auditors who's working at big four and non-big four public accounting firms (KAP). According to the results of the study, perceived usefulness variable has a significant influence and perceived ease of use variable has an influence that is statistically insignificant. The results were derived from test data where a p-value value of 0.001 was obtained, which was less than 0.005 (5%). According to these results, H_o was rejected and H_1 accepted, indicating that the independent variables perceived ease of use (X1) and perceived usefulness (X2) had an impact on the dependent variable, audit quality (Y).

There are still many deficiencies in this study, both in the process and the results. Therefore, it is believed that future study of a similar research will be able to address the current deficiencies of the study that has already been done. The limitations faced by the implementation of the research include the following; (1) The research conducted resulted in a low Adjusted R Square value of 27.1%. Where 72.9% of the effect came from other factors that were not tested in the study that had been carried out. (2) Due to time limits, the results of the data analysis test performed are limited to multiple linear tests that can still be developed with additional tests.

Based on previous discussions and conclusions, a list of suggestions were made for the research that has been done. Various related parties may find the suggestions useful. Research has led to a variety of recommendations, including the following: (1) For Auditors, to continue improving their big data analytics skills, as this is an essential part in the process of obtaining higher quality of audits. It is very important for senior auditors to learn more about the technology in auditing in order to support auditing's efficiency, effectiveness, and data accuracy. (2) For Public Accounting Firm, in order to support the use of big data analytics in the audit process and produce high-quality audits while still paying attention to other fundamental factors, such as the professionalism of auditors, it is important for those who have

implemented digitalization to provide adequate training for their human resources. After all, big data analytics is only a tool that helps with ease and efficiency of processing time. (3) For next researcher, in order to obtain more precise results, the research can be conducted with the same variables but a wider scope from the topic under discussion and the subject under study. Additionally, in order to do more thorough, accurate, and reliable, research er can do on other elements that may have a significant impact on the audit's quality.

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