

# WILL AUDITORS READY TO FACE THE ERA OF DIGITALIZATION 4.0

Akie Rusaktiva Rustam, University of Airlangga  
I Made Narsa, University of Airlangga  
Lalropuii, University of Airlangga

## ABSTRACT

*This study aims to determine how ready the audit profession is facing the age of digital competition. Data analysis used in depth interview techniques and used 7 informants with accounting background. Based on the results of in-depth interviews with the informants, it is known that the audit profession is not fully prepared to face industrial revolution because the quality of human resources that has not been qualified and inadequate infrastructure support. The results are also supported through the identification of TRI 2.0 where in the face of technological novelty, auditors must be optimistic, innovative, but at the same time as these demands the auditor feels uncomfortable and insecure and the application of big data is still not optimal.*

**Keywords:** Industrial Revolution 4.0, Auditors, TRI, Big Data.

## INTRODUCTION

The new era of technology today has an impact not only on professions in the technology sector, but also on professions in other fields such as auditing services. Dai & Vasarhelyi (2016) define audit 4.0 in an era of high-level technology use in conducting the audit process, namely the Internet for Everything (IoT), Internet for Services (IoS), Cyber Systems (CPSs) and intelligent machines in the process of collecting operational data. and finance as well as all matters relating to the audit process. In their research article, they also explain how the evolution from Audit 1.0, 2.0, 3.0, to 4.0. Elements of Audit 4.0 significantly change the profession of auditors to be automatic in carrying out procedures, widening the scope, minimizing time and overall will improve audit quality.

Yoon et al., (2015) in their article explain how to use big data as complementary audit evidence. They try to see the extent of the use of Big Data in the audit evidence criteria, as well as to analyze how the cost and benefit analysis takes into account the sufficiency, reliability and relevance of the audit evidence. This proves that as technology develops and the digital era develops, audit systems can also be used to obtain evidence. One example of big data that is currently being applied is to use photo evidence when the engagement contract is signed or videos taken during these processes so that it can be used as strong evidence Alhabsi, (2017).

In Indonesia, there are still not many auditors who use big data as complementary audit evidence. In fact, it cannot be denied that auditors in Indonesia often go through an audit process that should be carried out, even though the audit process is still classified as traditional which has not really followed digital developments Alkhaffaf et al., (2018); Parasuraman (2000) conducted research on the readiness of the profession to use high-level technology using qualitative methods with interview techniques Appelbaum et al., (2017); Parasuraman (2000) defines the concept of this research as referring to the human ability to be able to accept and apply new technology to help users achieve goals in work and daily life. Parasuraman and Colby (2014) made improvements to TRI by adding the use of quantitative

methods in evaluating TRI to become TRI 2.0, "an updated and streamlined TRI". Kurniawan (2019) in his journal said that the role of accountants must be optimized because accountants will continue to face changes in the era, where after the 4.0 era, accountants will again face the 5.0 era as a new era, of course the obstacles and pressures are greater, so prospective accountants must be ready to face this matter Baldwin et al., (2006).

Previous studies such as those conducted by Dai & Vasarhelyi (2016) regarding the evolution from Audit 1.0, 2.0, 3.0, to 4.0 and revealed that auditing in the era of digitalization 4.0 was an era of high-level technology use where increasingly capable technology was juxtaposed with big data. research by Yoon et al., (2015) which looks at the use of big data as complementary audit evidence, Parasuraman (2000) which examines the readiness of the profession for the use of high-level technology, and Parasuraman and Colby (2014) in their research that refines TRI to measure further about the readiness of the profession in the use of technology, making researchers interested in researching the readiness of auditors in Indonesia in facing the era of digitalization 4.0. Previous research on auditor readiness, The test is carried out statistically by displaying quantitative data which is not a direct survey of the auditor's opinion. In this study, not only answering the readiness of auditors with a qualitative approach, but juxtaposing this readiness with the Technology Readiness Index 2.0 formulated by Parasuraman and Colby (2014) to determine the level of readiness of auditors in East Java, Indonesia Cockcroft & Russell (2018). Therefore, this study answers the readiness of auditors in facing the digitalization era 4.0. 0 formulated by Parasuraman and Colby (2014) to determine the level of readiness of auditors in East Java, Indonesia. Therefore, this study answers the readiness of auditors in facing the digitalization era 4.0. 0 formulated by Parasuraman and Colby (2014) to determine the level of readiness of auditors in East Java, Indonesia. Therefore, this study answers the readiness of auditors in facing the digitalization era 4.0 Conrow, (2011).

By using reference material in the form of previous research as described in the paragraph above, the researcher reveals the readiness or unpreparedness faced by Indonesian auditors to face this era. The era of digitization 4.0 has become a new "problem" for some people, especially auditors who have been accustomed to conducting audits manually and have had to switch to paperless audits which require auditors to be alert to this change. Previous research on auditing in the digitalization era 4. 0 does not answer the readiness of auditors in facing the digitalization era because previous research was conducted with quantitative statistical testing so that the purpose of this study was to see the readiness of auditors in facing the industrial revolution era and later it is hoped that they can contribute as material for government evaluation to really prepare auditors in the era of digitalization which is growing Marvrin & Watson (2017). This research was conducted using the in-depth-interview method as a way to obtain the information the researchers needed. This research will answer the readiness of auditors in facing the industrial revolution 4.0 and how to take further action if it is found that the auditors are not fully ready to face this new era. This research was conducted using the in-depth-interview method as a way to obtain the information the researchers needed. This research will answer the readiness of auditors in facing the industrial revolution 4.0 and how to take further action if it is found that the auditors are not fully ready to face this new era Karlsen & Wallberg (2017). This research was conducted using the in-depth-interview method as a way to obtain the information the researchers needed. This research will answer the readiness of auditors in facing the industrial revolution 4.0 and what to do next if it is found that the auditors are not fully ready to face this new era O'Leary, (2017).

## Method

The research was conducted using case study approach and in-depth interviews is an analytical tool that is expected to provide results in accordance with the readiness of auditors in facing the 4.0 era where the interview process is directly carried out so that they can know for sure their readiness is represented by their own voices. Of course, apart from using this method, observations and documentation will also be carried out to see the readiness of auditors in facing the digitalization era 4.0. Observations and documentation will be collected through secondary data that researchers find both in the object of research and newspapers or news that have been proven correct O'Leary, (1991). The choice of research method is based on research questions regarding the readiness of auditors in facing the industrial revolution era 4.0. Furthermore, the type of research carried out is in the form of explanatory research.

This study refers to the model proposed by Parasuraman (2014) which uses the TRI 2.0 model which is a development from Parasuraman's (2000) previous research, namely TRI 1.0. where in TRI 1.0 the research used a questionnaire consisting of 36 statements about belief where each statement was measured by 5 scales (1 = strongly disagree, 5 = strongly agree). Of the 36 statements that are in TRI 1.0, 10 statements aim to measure optimism, 7 statements aimed to measure innovation, 10 other statements aimed to measure discomfort, and 9 statements aimed at measuring insecurity. Optimism and innovation in TRI 1.0 have a role as motivators that contribute to technology readiness, while discomfort and insecurity act as inhibitors to reduce technology readiness Salijeni et al., (2019). The development of TRI 1.0 was actually a collaborative effort between the authors and Rockbridge Associates (a Virginia-based market research company that specializes in technology and service issues). TRI 2.0 has an overall structure and content similar to its predecessor, namely TRI 1.0. However, TRI 2.0 has a cycle that is not as long as TRI 1.0 and contains items that are more technology neutral Thirathon et al., (2017). The development of TRI 2.0 is expected to accelerate the practical application of the TR construct and use it in scientific research.

The Technology Readiness Index (TRI) is used to measure the level of professional readiness to face digital change. In this study, several things used as benchmarks for the readiness of the auditor profession to use the TRI model proposed by Parasuraman (2000). In his article, Parasuraman (2000) discusses the potential practical applications of scale and an agenda for additional research aimed at deepening people's understanding of the role of technology in marketing and customer service. In his article Parasuraman tries to find out how customers react to the application of technology-based systems through the psychometric properties assessment of TRI Warren et al., (2015).

Before the Parasurman TRI model was put forward, in 1995, Mankins invented a measuring tool that could be used to assess whether a particular technology was ready for use and a consistent comparison of readiness between various types of technology, namely the Technology Readiness Level (TRL) (adopted by NASA). According to (Dubos et al. 2008; Mankins 1995) The Technology Readiness Level (TRL) has 9 stages as shown in Table 1.

TRL 1	The basic principles of observation and reporting
TRL 2	Technology concepts and application formulations
TRL 3	Critical, analytical and experimental functions and character concepts
TRL 4	Components and validation in a laboratory environment
TRL 5	Components and validation in the relevant environment
TRL 6	System and subsystem model or prototype demonstration in the relevant environment
TRL 7	Prototype system in a free environment
TRL 8	Actual system that is complete and has passed the flight-qualified tests

TRL 9	Actual systems to ensure operational success
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Primary data and secondary data are used in conducting this research. Primary data is obtained directly from observations and interviews in the field, while secondary data is obtained indirectly through informants in the form of visual information and research objects. The first technique used in this research is by documenting and collecting relevant archives from the company's internal auditors, then conducting interviews with related parties who are believed by researchers to have very high capabilities and abilities in their fields Xia & Zhou (2015). Interviews were conducted with several types of informants. Several informants the researchers interviewed is Table 2 & 3.

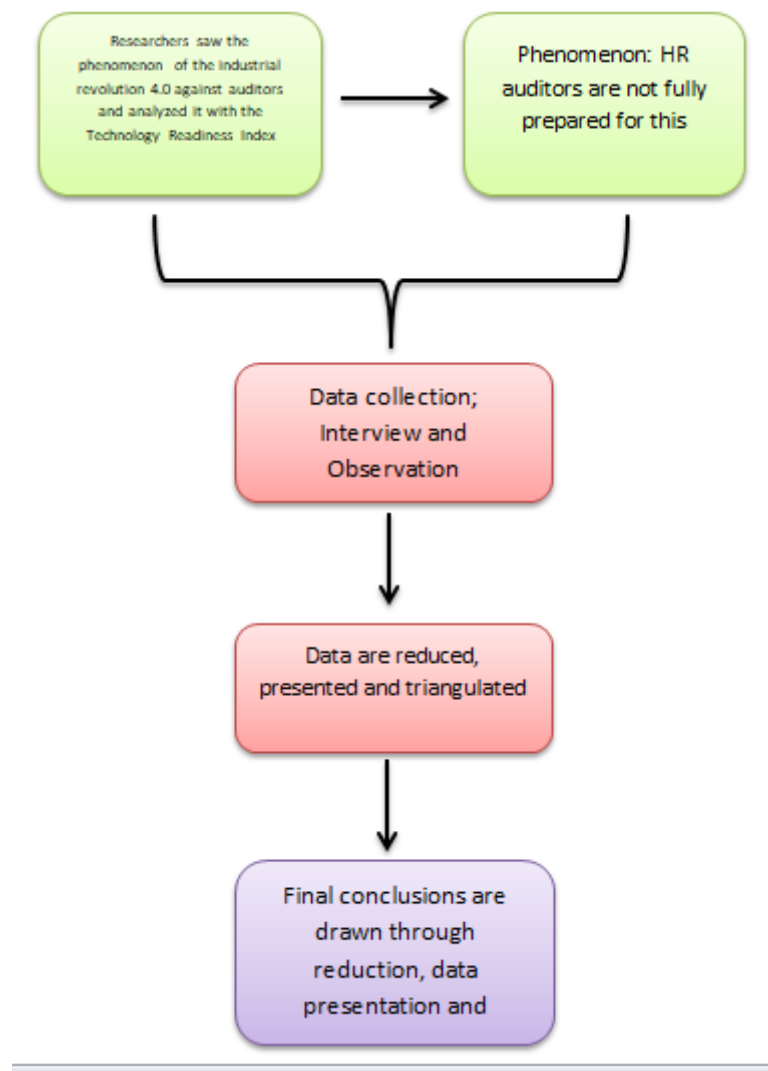
No.	Initials of Informants	Position / Position
1	Participant 1	Academics
2	Participant 2	Big Auditor 4
3	Participant 3	Local KAP Auditor
4	Participant 4	Local KAP Auditor
5	Participant 5	SPI Company Section
6	Participant 6	BPK auditors
7	Participant 7	Head of Accountant Organization

After conducting interviews, the next technique used is to observe, namely by directly observing activities in auditing and management in the company in order to add evidence to strengthen the research results. Interviews and observations in this study are tools for collecting data Zhou & Xia (2018).

There are several techniques for analyzing data in research. This research leads to the data analysis technique proposed by Miles and Huberman, where in analyzing the data, there are three activities that occur simultaneously, namely data reduction, data presentation, and triangulation. Data reduction is done by classifying, directing, and focusing attention by simplifying. Data reduction in this study was carried out by analyzing the results of the interviews conducted and then focusing on simplifying them, so that through this data reduction, final conclusions can be drawn and verified. Furthermore, after doing data reduction, the researcher will present the data in a simple but detailed manner. From the presentation of the data carried out, the description of the research results will be clearer but can be understood easily. Furthermore, to complete the analysis carried out, triangulation will be carried out, where this triangulation aims to double-check or double-check the truth of the data that has been reduced and presented so that through efforts to draw conclusions from the data obtained, the conclusions drawn by the researcher can be tested for their validity and it can be proven that the data in this study are valid data.

After the three flow of activities in conducting this data analysis are carried out, the next step is to make conclusions. When data collection activities are carried out, researchers will analyze the data obtained through informants to find meaning, and the cause-and-effect flow of an event occurs. Conclusions that are not initially clear at this stage will become more detailed. The "final" conclusion will emerge depending on the number of records used in the field, their coding, storage, and retrieval methods used, the intelligence of the researcher. But in reality this conclusion has usually been formulated from the start (Salim, 2016).

In simple terms, the research concept in this study can be formulated as shown in Figure 1.



**FIGURE 1  
RESEARCH CONCEPT**

From the picture above, in simple terms the concept of research carried out is based on the phenomenon of the industrial revolution that is currently happening, this phenomenon is then associated with the readiness of auditors to deal with it by conducting analysis using the technology readiness index concept, then from the phenomena that occur regarding the auditor's unpreparedness in dealing with it Researchers collect more complete data by conducting interviews and observations, then the researcher will reduce the data and finally draw conclusions from the reduction, data presentation and triangulation that has been done.

## **RESULTS AND DISCUSSION**

The development of digital society today certainly has promising opportunities in the industry, especially with the convenience offered in this era, people are becoming technologically literate and starting to think practically so that whatever people want to do is simply “one click” on the gadget. This is certainly one of the opportunities for entrepreneurs

in various industrial fields to provide services and meet the needs of the community with easy but high quality facilities. For example, currently Indonesian people will tend to choose to shop online rather than having to travel directly and this then becomes an opportunity for entrepreneurs to establish “online-shopping” that is easy and liked by the community.. These opportunities make digital companies grow rapidly by increasing the innovations they have. In addition, at every opportunity that arises, of course, there will always be threats that will have a negative impact on an opportunity. This threat is in between others are the lack of skills that need to be possessed, threats to information technology security, stability of production machines, stakeholders who are unable to change and automation systems that have resulted in many job losses. Of course, these threats need to be anticipated so that they do not arise and harm many parties. National Officer from Microsoft Indonesia, Tony Seno Hartono said that the biggest threat from the digital revolution is regarding individual privacy, for example the privacy issues that occur in the European Union. Furthermore, with the development of technology, the threat of crime related to technology is also increasingly complex. Perpetrators do not have to be physically present at the scene, but through their internet connection they can damage the system which will affect all machines and technology on the network.

The more developed the use of technology, the more the existing professional fields, especially accounting. This development is marked by the changes that have occurred such as the actual digital accounting does not have a standard because this change only refers to the technological developments that occur. Digital accounting itself is a shift in the representation of accounting information into a digital format that can be transmitted and manipulated electronically (Deshmukh, 2006).

Digital formats in accounting can be characterized by their presence big data is used as accounting records that are no longer done manually, but have been transformed into digital records. New opportunities in big data make it possible to become a source of accounting information, even this big data can also be an analytical tool in conducting audits and can also have an impact on audit judgment (Vasarhelyi et al., 2015). In Indonesia, the big data program has also begun to be implemented in audits, although big data has not been fully implemented as an interaction tool, but big data itself has become one of the tools to give confidence to others. For example, when the audit process is running, examination of asset ownership certificates still has the possibility of suspicion because documents that are presented manually have a tendency to be manipulated, but when there are several records, as well as digital documentation when purchasing assets, or a cooperation agreement between the two parties is made, then the auditor's confidence will increase because there is convincing evidence. This is how big data works that provides confidence in the digital footprint it can do. In addition, big data can also be an analytical tool to see opportunities and threats for the accounting profession because big data can fulfill the skills and knowledge of accountants who were previously limited to problem analysis from structured data (Richins et al., 2017). However, when there are several records, as well as digital documentation when purchasing assets, or a cooperation agreement between the two parties is made, the auditor's confidence will increase because there is convincing evidence.

Cao, et al., (2015) revealed that Big Data Analytics is a process of inspecting, cleaning, transforming, and modeling Big Data used to find and communicate useful information and patterns for accountants, suggest conclusions, and support decision making. Cao, et al., (2015) in their article tried to see how Big Data analytics will be able to improve the efficiency and effectiveness of financial statement audits.

Furthermore, the shift in accounting to digital accounting is marked by artificial intelligence accounting which is artificial intelligence where this artificial intelligence can be created through technology. This artificial intelligence is an integral part of decisions that are

continuously being developed and widely adopted in both technical operations, modern business managerial and professions including auditing (Omoteso, 2012). In auditing, artificial intelligence is of course very helpful for competitors, because with artificial intelligence, auditors do not need to spend time in performing some tests in an audit such as manual substantive tests. AI in auditing will provide convenience and can cut time in conducting audits which usually take quite a long time.

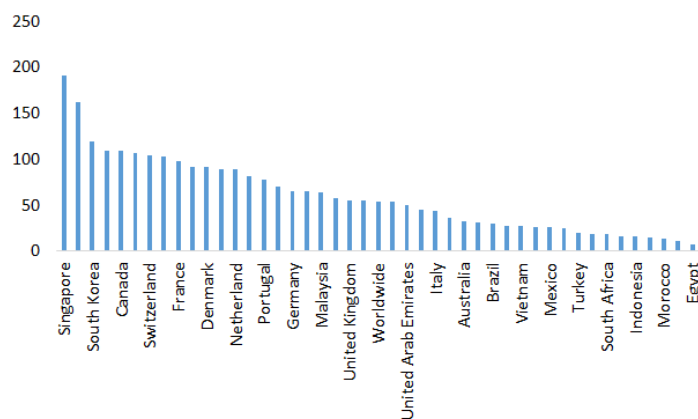
The industrial revolution 4.0 emphasizes IoT where everything that is done in daily activities is digitized. For example, changes in habits that occur in human activities such as shopping habits at the mall then turn into online shopping habits, or a habit that is deeply felt is when now everyone no longer stores photos in albums, but switches to storing memorable photos. to social media platforms like Facebook, Instagram which are getting easier and more practical. Likewise with changes that have occurred in the accounting sector, if in the past the auditors were busy collecting transaction evidence for vouching, today with the convenience of technology all forms of transactions can be traced through the block-chain system.. Digital modernization then makes many things change and demands that we must be ready to face every change that occurs, including accounting which will sooner or later change with the current development of the times and this certainly requires professions in the accounting sector to be ready with all the consequences, even more so. for auditors. It is very important to emphasize the readiness of auditors for changes that are getting more obvious in front of their eyes so that this profession will not be replaced by an increasingly capable robotic system. This research then answers all the readiness of auditors in the current industrial revolution era. Researchers try to reveal the reality of the readiness of auditors in facing technological developments in the IoT era where this research was conducted in the public accounting firm of each informant, both from local KAP, KAP big four, IAI offices and at state universities. All 7 informants in this study work as auditors or have been auditors, both internal auditors and external auditors in their respective agencies. The interview and observation stage was carried out for 3 months from August 2019 to October 2019 randomly to informants who had been selected by the researcher to obtain accurate findings regarding the facts of auditors' readiness in facing the industrial revolution era and then from these findings explained the "why" of that fact. happens, as well as "how" to deal with it. both internal auditors and external auditors in their respective agencies. The interview and observation stages were carried out for 3 months from August 2019 to October 2019 randomly to informants who had been selected by the researcher to obtain accurate findings regarding the facts of auditors' readiness in facing the industrial revolution era and then from these findings explained the "why" of that fact. happens, as well as "how" to deal with it. both internal auditors and external auditors in their respective agencies. The interview and observation stages were carried out for 3 months from August 2019 to October 2019 randomly to informants who had been selected by the researcher to obtain accurate findings regarding the facts of auditors' readiness in facing the industrial revolution era and then from these findings explained the "why" of that fact. happens, as well as "how" to deal with it.

In the aduit revolution described by Vasarhelyi (2016), audit 4.0 will support the existence of Industry 4.0 technology, especially the Internet for everything (IoT), Internet for services (IoS), physical systems cyber (CPSs), and Smart Factory, to collect financial and operational information, as well as data related to audit activities. Audit 4.0 can analyze, model, and visualize data to find patterns, identify anomalies, and extract other information to provide effective, efficient, and real-time assurance. Audit 4.0 is an overlay of Industry 4.0 business management processes that use a similar infrastructure, but audit 4.0 is used for underwriting purposes.

<b>Table 3</b>			
<b>THE GENERATIONS OF THE AUDIT</b>			
<b>Audit 1.0</b>	<b>Audit 2.0</b>	<b>Audit 3.0</b>	<b>Audit 4.0</b>
Manual auditing, tools: pencil, calculator	IT auditing, tools: Microsoft Excel, CAAT software	Inclusion of big data in analytical auditing, tools: analytical applications	Semi auditing and progressive automation, tools: sensors, CPS, IoT / IoS, RFID, GPS

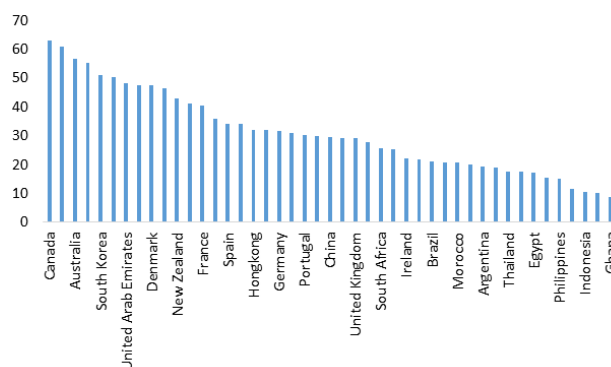
The readiness of human resources in Indonesia in facing the industrial revolution is an undeniable polemic. The reason is that many human resources claim to be capable and ready to face this industrial revolution, but in fact, in practice, there are still many who are "null and void" (not applying). The habit of Indonesian human resources to take a problem lightly has become one of the factors for the slow development and growth of Indonesia in dealing with changes that occur. This also applies to auditors, based on the results of interviews that researchers conducted with auditors at local KAP, they feel they need not worry too much about this change, because they consider themselves unprepared but their country, so they will upgrade their new skills when the decision to change they have got from the government,

The fact that Indonesia is not ready to face this industrial revolution is also indisputable and cannot just be justified because basically Indonesia itself is less "aware" of this change. We can see the fact that the facilities and infrastructure needed to "change" in terms of digitization are still far from perfect. For example, such as the problem of internet speed, we ourselves know that the digitization system requires reliable internet speed, especially if we apply big data, AI, cloud computing, of course, the speed to access data is very much needed, we cannot just rely on the internet which has an average speed, but instead this is the problem. Quoted from the CNN Indonesia page, Indonesia is in the second lowest position for internet speed of 45 countries for mobile cellular connections. In addition, the average internet speed in Indonesia is ranked fourththe bottom of 46 countries. The following is world internet speed data taken from the CNN Indonesia page Figure 2.



**FIGURE 2**  
**INTERNET SPEED DATA**





**FIGURE 3**  
**MOBILE INTERNET SPEED DATA**

From the data quoted above, we can see the graph of the average internet speed in 45 countries in the world, where Indonesia is in the 43rd position with the average Indonesian mobile internet speed recorded at only around 10.5 Mbps, while the world's cellular internet speed is recorded. is at 25.1 Mbps and is increasing by an average of 18% each year. This indicates that Indonesia's readiness to provide the main facilities and infrastructure in terms of the internet to support the industrial revolution 4.0 is still lacking Figure 3.

If the internet as one of the facilities and infrastructure in Indonesia that supports the realization of technological developments is still lacking, then how are auditors prepared to face this era of industrial revolution 4.0? This question the researcher answers in the results below on research on the readiness of accountants in the face of the revolutionary era 4.0. In this study, researchers conducted interviews with several informants regarding the readiness of academics and practitioners in facing the 4.0 industrial revolution.

The informants above are people who will directly feel the impact of the 4.0 industrial revolution for the development of accounting, especially for auditors. In the free interviews the researchers conducted, the researchers asked questions about their opinions about the industrial revolution 4.0 in the accounting field which included their readiness and understanding of technical issues that must be mastered in this 4.0 era.

Participant 4, who is an auditor at a local KAP, implied his unpreparedness in facing the 4.0 industrial revolution when asked his opinion about this digitalization era. The following is the opinion conveyed by him;

"Again, how do we understand the 4.0 industrial revolution. I think if in Indonesia the implementation of the 4.0 industrial revolution is indeed a bit difficult, because the majority of Indonesians themselves cannot be independent. For example abroad they can be better prepared to face this industrial revolution because basically they can be independent and are used to being assisted by systems and robotics, if not in Indonesia, we are accustomed to using human assistance, simply put, in developed countries just fill up gasoline by themselves, pay yourself, now if in Indonesia, fill up the gasoline, pay for it too. So in my opinion, basically Indonesia is still not independent and is not used to automatic things like that so it will be difficult. "

In line with Participant 4, Participant 3 also argued that this industrial revolution would be quite difficult to deal with if no changes were made on oneself, because according to him the abilities and skills that were not only limited to accounting science were very important to be developed so that they could compete and be strong. face this era;

"Yes, that was a skill, sir, besides willingness, and the most important thing is to broaden knowledge because people are outside the basics accounting can you study accounting in our period when accounting people cannot learn other sciences? "

The opinions of all the informants actually always lead to the unpreparedness of the auditors in facing this industrial revolution era. They consider that the demands of being able to face this digitalization era are too fast and as if they must be implemented today, while those who are technologically literate (auditors) cannot automatically apply other technology systems without training and facilities and infrastructure. sufficient so that it will be difficult for the development of accounting in Indonesia. Unpreparedness in implementing computerized audit technology is an obstacle faced by every auditor. Referring to the idea of Parasuraman (2014) regarding individual readiness in facing new technology through TRI with 4 variables; optimism, innovation,

"In facing new technology in this era, we should be optimistic and have innovation, because being optimistic without innovation is not enough. Likewise, when we innovate but are not optimistic, everything will fail. For example, if we want to make a paperless audit system, that's an innovation, right, but if it's not optimistic, then the innovation won't work. It's the same when we are optimistic that we can use an audit system that doesn't need paper and manuals anymore but don't think about innovating with a paperless system, it's useless. Of course, there must also be a sense of discomfort and insecurity, because when we are faced with something new, we don't immediately feel comfortable, and there must be a sense of insecurity. For example, when the auditor is a senior, already familiar with the manual system, it is certain that he feels uncomfortable with the new system.

Furthermore, regarding the reasons for the development of accounting, according to Participant 6, accounting activities do not necessarily transfer directly to the system on the grounds of accounting developments. The following is his explanation;

"The development of accounting can actually be more digital in fact, but how does digitalization make it easier, sir, or even with the development of technology that directly impacts the development of accounting it can become difficult because in principle accounting is an art, the art of taking notes, reporting in order to provide information. The right finance as a decision-making tool is called art, it requires human thinking, it will be difficult if it is transferred directly to the system or robot. "

When the researcher tried to ask how the strategy was to face this industrial revolution era, because according to some informants it would be quite difficult to deal with and the auditors also tended to be unprepared to face it, Participant 7 gave his opinion as follows;

"Wow, it's also difficult when talking about strategy because we are also talking about systems, 4.0 is a matter of digitization, technology and a more sophisticated information system. So actually we can only talk about the system when the human resources and infrastructure are ready and supporting performance, in my opinion, if it can be done simultaneously, the infrastructure is fixed and prepared, then the human resources must also be ready, then we must change the system, not the first system that is ready for new HR is required to be able because the study time can be longer. Moreover, in fact these Indonesians find it difficult to accept change. If you are comfortable in a zone, why change? "

Slightly different from other informants, Participant 2 argued that whatever happened there was no reason to be unprepared because this condition was a condition the auditors had to go through;

"Ready or not ready, actually, you have to be ready, the name is that they are definitely still young. They are still good at the performance of their brains to learn many new things, especially if they are students who have a strong determination to learn in the future, any challenges can be overcome. Companies, especially those in the form of MNCs, are all based on the internet and digital technology, so no matter what All accountants, if you want not to be overwhelmed by time, have to be proactive in finding and studying all independently, so now learning doesn't have to be from campus alone, there are already many learning facilities that can be accessed so there's no reason not to have learning resources

because it's not like our past days, looking for books is difficult and expensive, sir. Now any knowledge is easy to find. However, the internet and digital society must understand and follow sir, many platforms can only be used for one thing, for example for communication, in the past we mostly called and texted, which used pulses, so we used to think twice about communicating. But in today's era, all we need to think about is that there is still a data and signal quota ... around us ... there is WhatsApp, there is telegram, video call both WhatsApp and other things, so whatever, if we want to survive as accountants, we have to be able to follow and learn the new way .... "

On another occasion, the researcher also asked Participant 5, as the company's SPI staff, where as we know, the industrial revolution with basic accounting did not only occur among auditors but also had an impact on company practitioners with the same background. Researchers asked about technicalities in company management regarding cloud computing which must currently be applied in the 4.0 industrial revolution. The following is the statement of Participant 5;

"Cloud computing is as if it can be accessed easily, yes, we can simply say it is like Google Drive, or there is a Google sheet whose system works exactly like Excel but with conditions that are more accessible, data is not lost, and of course more. open. But behind all the conveniences, of course, there are risks. For example, data can be stolen because if Google just turns a little and there is data leakage, of course the financial data that we have been storing will be scattered. There's no need for Google to turn away. Now we write down the transaction numbersPT. X, for example, on sheets, Google people will definitely know, even though it's privacy, even though the financial data that we record doesn't affect Google, but it's the same as leaked data, and people today are much more sophisticated, they'll be smarter hacking data stored in the information system rather than data that we have stored safely in the Excel folder so far. "

Cao et.al (2015) argue that big data analysis is a process of inspecting, cleaning, transforming, and modeling Big Data which is used to search for findings and communicate information and patterns used to provide suggestions in the form of conclusions that support the decision-making process. Cao et.al in their article tries to see the effect of using big data analysis in increasing efficiency and effectiveness financial report audit by explaining the characteristics big data analysis that differentiates it from traditional auditing in general.

Meanwhile from the auditor's side as an informant in this research, according to Participant 6, implementing digital systems in conducting the audit program is still difficult to implement, because taking examples through paperless audits, according to him, cannot be done only from one side (in this case auditors only) but there must also be synergy from the company to be audited. Participant 3 gave the following opinion;

"In my opinion, from the practitioner's point of view, especially the auditors, as long as the paperless system is synergized between the two parties, I don't think it's ready. Because changing a paperless audit system is a bit difficult. For example, as auditors, we are ready and have implemented a paperless system, the auditee is not necessarily ready. What's more, currently the audit curriculum for all evidence of transactions, agreements, contracts, etc. still uses signatures as proof of authorization so it will still be difficult to deal with this. Even if it's ready, it can be ready but not in the near future, because it will take time. Changing the system takes time, effort and money to change, let alone changing attitudes ... that's the hardest thing ..."

In addition, when the researcher asked Participant 4 who is the auditor about the principles of the industrial revolution in which there is the use of a robotic system, Participant 4 said that;

"Again, in our opinion accounting is an art, yes, while according to other people, maybe accounting is just a science of taking notes, nothing more than that, so what must be

prepared is our ability as practitioners, then how can our cognitive abilities take part in making decisions in making that report. alone. Robots can't categorize a transaction, whether it's a purchase of assets or equipment, sir, because robots only work according to orders, so of course human abilities are still needed. Robots can only record and help take notes, but they cannot be ordered to participate in thinking and finding solutions if the financial position report is not balanced. "

Furthermore, when asked about the obstacles in the era of this industrial revolution, Participant 2 gave a statement that slightly industrialized accounting practitioners who he considered were still too conventional, along with his statement;

"The current problem I think for practitioners is that accountants are still conventional, so it is still difficult to be open to the things above. For example, just like the paperless problem, it is still very difficult to implement it because the human mindset itself is still reluctant to change and in Current conditions also need people with conventional thinking, yes, unless later if there are new rules everything must be out of the box, you have to be creative and innovative if you don't cut your salary by 50%, then people will be busy cleaning up. Now, because it's still comfortable and won't be displaced by the conventional system, it's still relaxed. So the obstacle is back in the mentality of the human resources, as well as the ability of the human resources itself.

Regarding the opinion of President Joko Widodo who was expressed during his speech at the Inauguration of the Opening of the Campus Convention XIV and the XX Annual Meeting of the 2018 Indonesian Chancellors Forum at Hassanuddin University Makassar to take advantage of opportunities that exist in the era of the industrial revolution as a way to improve the progress of the nation, and he will also continue to monitor the implementation of digitalization in the era of this industrial revolution through "Making Indonesia 4.0" as an integrated roadmap to apply a number of strategies in entering the era of the industrial revolution 4.0, Participant 6 bluntly answered;

"In my opinion, it depends on what field of work is being monitored first, for accounting, why is fatigue being monitored continuously anyway, it takes a lot of time to change the entire financial system into a digital-based system. How do you want to change the accounting system with basic robotics, if until now, we are still confused about which accounting principles to use for technology-based businesses. "

Regarding the solutions that can be given by Participant 1 as an academic, he can only suggest that he always upgrade himself, strengthen his skills and be more diligent in studying because changes are happening more quickly.

"The solution is to be ready to learn, to be ready to face all risks because Indonesians tend to be risk averse rather than risk takers, although not all of them, yes, but often Indonesians think that if you can play it safe, why take risks? So yes, we can't apply this mindset anymore because if not, we will lose to the conditions that continue to develop, we also have to always be ready to upgrade knowledge, especially millennials who will directly face change for the sake of change, don't keep people lying down hehehe. "

The informants above outline that there are obstacles in facing the industrial revolution 4.0, especially for people who have an accounting background, in this case auditors. These obstacles include the lack of thorough preparation in facing the 4.0 era, facilities and infrastructure that are still minimal and less supportive, and human resources who are not ready to face this era of digital change. In the era of digitalization 4.0, it can be said that everything seems sudden. Information about this era was also reported suddenly where all elements or layers of society were busy reporting that at this time we were in a different era. In fact, the abilities or skills that everyone has are still at the same point, although the state of human being blind to technology has drastically decreased. However,

this condition certainly cannot be generalized whether the decline in technology-blind people is the basis for everyone to be ready to face the era of digitalization 4.0.

The Technology Readiness Index, which can be used as a measuring tool for auditors' readiness to face new technology, also addresses this unpreparedness. According to informants, Indonesians tend to be unprepared for anything new, including technology. Every individual, including the auditor, is rarely the one who can accept very sudden changes. The mindset of the Indonesian people is still very "text-book" Becomes an obstacle to change that demands to have an "out of the box" mindset.

The increasingly diverse complexity of technology becomes the responsibility of each individual because currently auditors who have expertise in their fields are not sufficient to only master accounting knowledge but are also required to be able to master technology knowledge about more complex information systems. For this reason, careful preparation should have been carried out long ago so that the era of the industrial revolution 4.0 does not seem like a hoax. The absence of mental readiness and thorough preparation is a difficult obstacle to face, because as long as we are not ready or not from any side, it will be difficult for us to develop. This is what causes Indonesia to always be stuck at a certain point and seem too comfortable in its own zone so that it is difficult to compete and adapt to global changes. Therefore,

Barashyan (2017) reveals that digital accounting is a representation of accounting information into digital format, which can then be manipulated electronically and transmitted temporarily, Deshmukh (2006) reveals that digital accounting does not have a standard definition but digital accounting refers to changes in accounting due to computing technology and network. With the existence of digital accounting, of course this will have an impact on the digitization of audits which have begun to be seen in this era, although there are still many obstacles that pose challenges in the digitization process. Keneley, et al., (2016) in their article informs the perspective on managing archives in the digital era as well as the benefits and challenges that exist in digitization. He uses a case study from the CPA in Australia,

Lewis, et al., (2014) in their article tells about the development of the auditing approach in government financial reports. Lewis, et al., (2014) explained that digital audit is not just a technology-based audit effort. This involves the expectation of a change in audit tailored to the knowledge, skills and abilities of auditors. Digital auditing provides an opportunity for auditors to be able to see trends, problems, and relationships in a broader stretch of data, and provide more meaningful and insightful assessments for government leaders and stakeholders to improve government performance.

Birt, et al., (2018) in their article tries to reveal the issues for the accounting profession in the development of digital technology. In their articles they focus on the challenges, including cybersecurity, outdated accounting systems, changing professional roles, and job mobility, which arise from changing technology. Birt, et al., (2018) argue that the disruptive potential and the increasing rate of ICT development, including intelligence systems, data mining, and predictive analysis, to exploit big data will change the operational and interpretative aspects of the accountant's role.

In Indonesia, less supportive facilities and infrastructure are also an obstacle in facing the digitalization era 4.0, including the lack of availability of computer devices with a much higher system so that it can make it easier for everyone to learn. Currently, there are still many computer devices with old versions that are very far behind the current technological sophistication. The unsupportive facilities and infrastructure are also supported by the users who are still comfortable with all the limitations of these facilities. Often we find company employees who claim to be knowledgeable and comfortable with this situation when asked why they are not using a new version of the computer device. Furthermore, high prices for

these facilities are also difficult to follow, so people still choose not to "change" or even not "develop".

In fact, in addition to being motivated by themselves to make these changes, company owners, government and stakeholders should also think about how all these challenges can be handled properly, not only urging the community to clean up, and giving "threats" as if it would be difficult to get a job if only be at one skill. Auditors' knowledge of the concepts of using new technology also still needs to be updated, for example when informants asked about paperless audits, auditors said that they were not really ready to do it because there were many things that had to be done manually, even though according to Participant 2, currently the blockchain concept has begun to be applied. For example, when we use GoPay as a means of payment at a restaurant, the recording will be directly carried out by the restaurant, GoPay, and in the accounts we have. This transaction will be automatically recorded so that further this condition can serve as evidence of transactions in auditing. In this condition, of course the auditor does not need proof of the transaction in the form of notes, invoices, receipts, etc. to prove the correctness of the transaction because this transaction has been recorded in the transaction reports of three users, be it the GoPay account owner (who made the transaction), the GoPay party (who help make digital payments) and restaurants (which accept payments).

Several things related to the audit process such as confirmation can also be reduced to do, because with this digital process all transactions will be automatically confirmed without the need to manually confirm, as is usually done by auditors. This is what forms the "paperless audit" concept. Of course this will greatly facilitate auditors, if auditors can accept these new technological changes well.

In this revolutionary era, of course accounting also has a serious impact and threat, namely cyber risk accounting. Basically, all segments affected by the digital revolution will have their respective threats and risks. Likewise with accounting. Data theft, leaking of financial data, or anything related to this situation are risks that must be faced considering that accounting data is very vital and crucial data or information for the company. Therefore, the thing that should be considered and become the focus for digital companies is how to deal with cyber risk accounting that will occur.

To deal with this risk, No and Vasarhelyi (2017) argue that cybersecurity is a way to deal with this risk because according to them one of the risks that must be faced is the problem of data security, so companies must understand and understand how to keep their financial data safe and secure. not detected. This is also emphasized not only for companies but also for auditors who must have sufficient skills and knowledge about cybersecurity in order to anticipate risks and threats that may occur in the era of 4.0.

The next obstacle is the problem of human resources, which researchers have only touched on in the above paragraph. Human resources in Indonesia tend to feel comfortable with what they have done so that when someone feels comfortable in a position, they are reluctant to change and move to another position even though in these other positions there is a greater opportunity to develop and change into better. This condition certainly makes it difficult for us when we have to be faced with the changing times in the era of digitalization. The mindset of "taking it lightly" considers things easy to go through into a bad mindset that makes it difficult for Indonesians to compete with other countries. This is also the fault. One factor is Indonesia's unpreparedness in facing the digitalization era 4.0, even though Indonesian people actually have sufficient ability above average to learn everything quickly. That is why there is always a saying that someone will not be able to change and develop if they do not start from themselves so that it will be very difficult for us to face digital change if we ourselves do not try to learn harder by adding to the skills that are required today. Moreover, in the field of accounting where accounting is always developing continuously and

is increasingly supported by information technology because the business world will always need accounting as the language of their business. For example, practice so as to increase their skills, even though this is an added value because ERP itself is a product of digitization.

Indonesia, is not completely unprepared for this digitalization, it's just that it is not "aware" of the existing reality. Still underestimating things that need to be addressed to change things for the better. This condition can be seen through companies that have actually started to implement digitalization in their operational activities, but again if the implementation has been carried out but HR is still not aware and ready to go through with it (in this case especially auditors), how can the industrial revolution be conquered? Therefore, auditors' awareness and readiness must really be built if they don't want to be crushed by the times.

Various obstacles in facing this era of digitalization 4.0 can of course be overcome in various ways to improve one's quality, but the most important thing above all is self-awareness to continue to improve and continue to learn in order to face the challenges that exist in the new era of digitalization. This. In facing this new era of digitalization, there are some basic skills that accountants must possess, namely, being able to think critically, logically, systematically, creatively and innovatively in developing or applying science and technology, mastering techniques, principles and knowledge about the use of information technology. Furthermore, the thing that needs to be mastered is designing business processes independently in an information system that supports the provision of information technology-based information.

Furthermore, in terms of technical, accountant's skills that must be developed include technical skills, namely data processing, statistics, and visualization, while in terms of soft skills, accountants must be able to think critically, have good communication skills, be able to experiment with learning by doing, and be brave in expressing opinions and asking questions. In addition, accountants must understand something, namely business understanding skills. Business understanding skills is an ability to understand how a business can run so that from this understanding accountants can describe the life cycle from the business itself to its sustainability.

Some of the things above are of course our common concern, not only for individuals, accounting students, practitioners and even academics, but there must also be good synergy between every element of society and government in realizing success to face this digitalization era. The unpreparedness of accountants in facing the era of the industrial revolution 4.0 becomes a task that we must solve together because the increasingly sophisticated developments will continue to require us to develop and change, and if we do not make changes by continuing to learn to improve our quality, the statement is that 95% of performance auditors will also be replaced by robots will have a great chance of happening.

## CONCLUSION

The era of the industrial revolution 4.0 is a challenge in itself for auditors, where this profession in its position in the company is predicted to be replaced by the system in general, even though the cognitive abilities possessed by accounting practitioners and academics will of course not be attached to systems and robots which are man made. This then becomes a dilemma, because in essence, accounting practitioners and academics are not really ready to face this industrial revolution era. From the research conducted, it turns out that in general the auditors are still not ready to face this industrial revolution era. There are several obstacles that hinder the readiness of auditors, including the mental unpreparedness of human resources in dealing with this condition,

Judging from the TRI initiated by Parasuraman, auditors in Indonesia actually already understand this change, but tend to be unprepared because they are not used to sudden changes. Innovation, which is one of the variables in TRI, actually already exists within the auditor, but lack of optimism is a major obstacle in implementing new technology. But at this time, auditors are ready or not ready to survive in this digital era. In order to survive, of course there are several things that must be considered by auditors, including strategies that must be implemented. Strategies that can be carried out in the face of the industrial revolution era are a strong will and determination to continue to learn and practice, strive to be able to learn various sciences, not only accounting but other sciences that can be the main capital to compete in this digitalization era.

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