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The Awareness and Knowledge on Artificial Intelligence among Accountancy Students

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Abstract

Artificial intelligence (AI) has impacted many sectors such as education, healthcare, political, social and economic that can give either positive or negative side effects. According to research by Accenture on the impact of AI in 12 developed countries, it concluded that AI has the potential to double annual economic growth by 2035. Another research by PricewaterhouseCoopers (PwC) claimed that global GDP could be up to 14% higher in 2030 as a result of AI. Since AI plays an important role in our daily lives, the awareness and knowledge about this technology must be updated from time to time. Therefore, the aim of this study is to analyze the awareness and knowledge on AI among accountancy students with the main intention to instil and develop their interest towards AI. For data collection, all accounting students in UiTM Tapah were selected to be respondents of the study that used questionnaires as the survey instruments. The results revealed that accounting students aware about AI with moderate knowledge about it. Nevertheless, majority of the respondents agreed that AI has greater impact and benefit people in many areas. The findings of this study provide some insights and value added in shaping the interest and knowledge especially among accounting students towards AI technology.

Keywords: Artificial Intelligence, Awareness, Knowledge, Technology, Accounting Students

Introduction

Nowadays, the emergence technologies under the Fourth Industrial Revolution (4IR), such as Artificial Intelligence (AI), Internet of Things (IoT), Cyber Security, and Unmanned Aerial Vehicle (UAV), can bring technological qualities which can revolutionize the trend people executed things in daily work (Raska, 2019). Silfverskiöld *et al* (2017) highlighted that IoT technology is the core enabler of the development of Big Data and AI technologies. While people scramble to keep update with the world technology, it is imperative that every people should be aware of AI and its scope. For example, in Delphi study conducted by Leitner-

Hanetseder *et al* (2021) they found that cloud computing and blockchain technology are drivers in technological empowered accounting. Their findings showed that AI-based technology such as smart robots, automated feature tools and business intelligence (BI) tools will have the power to replace humans as an actor and change processes in accounting. Meanwhile, Frey and Osborne (2017) reported that hotel desk clerks face high risk of being replaced by robots. Two examples of hotels which are Henn-na Hotel in Japan and Alibaba Future Hotel in China are staffed by robots (Northfield, 2015).

In realizing the importance of AI, the drawbacks or side effects of AI must be pay attention too. Based on the survey done by Anderson and Smith (2014), out of 1,896 participants half of them predicted that AI would displace a significant number of jobs by 2025. This situation may lead to unemployment issues and social order disruptions. In addition, Vinichenko *et al.* (2021) highlighted that AI contributes to the exacerbation of ethno-social conflicts whereby there is a tendency of a more extensive introduction of AI will lead to increasingly stable dependence of people on AI and can seize the initiative that eventually begin to control the natural intelligence in people. AI also can cause inconvenience in personal life with the personal data that can be stored in various databases and be used by various unauthorized structures. Moreover, the interference of AI in personal life negatively can affect the human psyche which can lead to mental disorder (Vinichenko *et al.,* 2021).

The knowledge on AI is vital as AI will shape our future and affect all sectors across the world. Nevertheless, little studies have been done to explore the awareness and knowledge about AI in daily lives. Therefore, it is our intention to fill up the gap by conducting this study with the main objective is to assess the awareness and knowledge about artificial intelligence particularly among accounting students. This study aims to contribute value-added insight and concept exploration on artificial intelligence that can be helpful in promoting progressive development of technology in Malaysia. This study also initiates the attempt in understanding the awareness and knowledge regarding the impact of IA in various industries and fields. Thus, it will assist new researcher to dive into more details on these associated topics and provide ample innovative ground for future research. The findings of this study might be helpful in providing productive knowledge for public, industry, academia as well as government in Malaysia towards AI technology to further determine future strategic, policy and initiatives to expand its applications.

Literature Review

Definition of Artificial Intelligence

According to founder of discipline of AI in 1956, John McCarthy, he described it as the science and engineering of making intelligent machines. Smith (2020) mentioned that artificial intelligence is either a computer program or suite of programs that can either augment or eventually replace the need for human engagement and oversight in entire processes or at least portions of processes. He also classified AI into different types which are (1) computational AI, (2) linguistic AI, (3) spatial AI, (4) reactive computing, (5) limited memory, (6) theory of mind and (7) self-awareness. Example of artificial intelligence technology include face detection and recognition, text editor, social media, chatbot, recommendation algorithm, search algorithm and others. IA applications are operated in various fields like manufacturing units, business entities, medical sciences, defense security, transportation and in the field of law and technology.

Application of Artificial Intelligence

Application in Accounting and Auditing Process

According to Neely and Cook (2011), the new technologies especially related to AI will have a major impact on the overall structure and processes in accounting. It also able to transform existing professional occupations and task profiles shortly. Soon, software robots able take in charge in fraud detection and liquidity planning that will improve the effectiveness of accounting organisations in addition to the current technologies used such as in enterprise resource planning and accounting information system. In terms of auditing field, AI able to replace traditional accounting audit with those electronic and digital transactions that led to the emergence of E-Accounting Audit (Zakaria, 2021) that very helpful in auditing process such as recording, tabulating, posting, summarizing and reporting. In addition, Hassan (2022) examined the Big 4 accounting firms' use of AI technologies and came out with distinct tendencies (1) the accounting profession is steadily investing in AI and integrating it into key business processes, (2) the Big 4 claim that the success of future accounting will be significantly influenced by AI. As accounting has finally caught up with technology, making it crucial for businesses of all sizes to stay current with technological advancements in order to remain competitive.

Application in Defence Industry

One of the AI applications is UAV which also popular with the name drone, is being the focal point of technologies for civilian dan military use lately for monitoring and surveillance purposes because of its attributes of quick deployment, adaptive elevation, and versatility (Barbosa *et al.*, 2020). UAV offers high-resolution video or picture, flexibility of autonomous flight, and real-time data collection streaming that enables further exploitation for diverse use. The proliferation uses of UAVs in commercial and military offers a good value proposition for the local defence industry to invest in. In 2019, the UAV business industry in the worldwide market was worth US$127.3 billion, according to a report by PricewaterhouseCoopers (Rozaidee, 2019). Moreover, the important future direction of UAV as a mobile communication terminal can bring a potential multipurpose application to be explored that is reliable and cost-effective for domestic and military use (Mozaffari *et al.*, 2019).

Application in Healthcare Field

Machine learning that uses AI technology plays an important role in diagnosis and treatment planning (Lee *et al.*, 2018). With the application of AI, it can increase the effectiveness of diagnosis (Dawes *et al.*, 2017). Besides that, AI also useful in nursing and palliative care of cancer patients (Schmidt-Erfurth *et al.*, 2018) that need constant and regular monitoring. This is supported by Ashwin and Muralidharan (2015) mentioned that AI has the potential to ease diagnosis, treatment and care of patients. In terms of awareness and knowledge, Samyuktha *et al* (2020) claimed that there was an overall positive response from the medical and healthcare professionals whereby 92% of them believed that AI is the future of medicine. They concluded that the participants had a moderate level of knowledge about AI and its scopes which can be improved later.

Application in Higher Education Sector

AI and robotics bring potential innovative solutions to change how education itself works, altering the current learning process, redesign the role of teachers and researchers as well as change how universities work as institutions (Cox, 2021). Examples of AI tools in education

such as intelligent tutoring systems (ITM) which has been introduced to teach course content step by step. Beside that, automatic writing evaluation (AWE) which are tools to assess and offer feedback on writing style such as Grammarly, QuillBot and Turnitin's Revision Assistant. According to Winkler and Sollner (2018), the use of conversational agents also known as Chatbots or virtual assistants which are AI tools that useful in short-term or long-term interaction and could act as tutors, engage in language practice, answer questions, promote reflection or act as co-learners.

AI Innovation Ecosystem (AI-IE) Model in Malaysia based on Quadruple Helix Approach

For AI to be successful, it must be supported by a healthy, purpose-driven, open-data ecosystem. For that purpose, the Malaysian Government together with the National Tech Association of Malaysia (PIKOM) and Microsoft Malaysia have bring initiative to develop the AI Innovation Ecosystem (AI-IE) model based on quadruple helix approach in encouraging participation and collaboration. The primary factor to consider is Malaysia's socioeconomic drivers. These applications of AI show how they might generate demand and profit from improvements in AI solutions in industries and services that will benefit the entire community. All industries can be benefited from AI; thus, it is up to organizational leaders on how to implement it in their own way. Another factor to be considered is industry, looking at who can supply AI technology and expertise. While there are many well-known companies operating in the AI field offering top-notch services to support companies using cutting-edge AI technologies, it is equally crucial to work with startups. Startups are a hub for innovation and have a significant impact on how economies are changed (Dzaharuddin, 2021).

The third component of the quadruple helix model is academia, representing the need for education and skilling among Malaysians to produce a workforce that is future-ready and capable of utilizing AI to its fullest potential. To unleash the next generation of AI advancement, AI and data science skills will be crucial in both supply and demand, hence it will be important to educate future generations of workers while upskilling the current workforce. The last component of the model for the AI Innovation Ecosystem is government. Government will oversee coordinating major initiatives to launch and develop the ecosystem, unlock its potential through enabling regulations, and guarantee that key ethical and trust values are scrupulously upheld. The government must set the course for the future, encouraging broad change, and launching crucial initiatives intended to promote each component of the quadruple helix model with a focus on public and private partnerships.

Research Methodology

Data Collection and Selection

The population of this study is accounting students in UiTM Tapah. They have been chosen as the sample of respondents as they represent a large population of accountancy diploma students as compared to other Private Finance Initiative (PFI) campuses. In addition, they come with a different background for example with Diploma in Accountancy (DIA) and Diploma in Accounting Information Systems (DAIS) which normally use accounting software that related to AI technology during their study as well as applying it when they start their career in accounting or auditing field in the future. The students were selected during the October 2020 to February 2021 academic session where the total population number of accounting students was 1,892 students. For data collection, survey questionnaires were utilized and circulated through an online survey using Google Form. In terms students'

selection to be included as a sample in this study, a simple random sampling technique was used. As the respondents are randomly selected from the sampling frame, all students have an equivalent chance to be participated in the survey. Overall, 241 valid responses were accepted, and this sample size is sufficient since according to Sekaran and Bougie (2013) who stated that sample size in social science research should be between the ranges of 30 to 500.

Measurement of Variables

All the questions in the survey were ordinarily adapted from global consumer survey conducted by Northstar Research Partners Ltd on behalf of ARM which is later been revised suitably in the environment of UiTM Tapah accounting students. This study uses questionnaire surveys that consist of two parts. Section A needs the respondents to fill up their demographic information for instance program, age and gender. Section B consists of 6 questions, the first three questions ask about the awareness of AI while the last three questions ask about the knowledge of AI where the respondents need to answer the questions based on five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree.

Results and Findings

Demographic Information

Based on the analysis of demographic and preferences information in Table 1, most of the respondents are undergraduate students taking a course of study Diploma in Accountancy (82.2%) as compared to Diploma in Accounting Information Systems (17.8%). In respect of gender, the respondents are mainly among female students (80.5%) whereas the remainder are among male students (19.5%). In terms of age, majority of the respondents are under 20 years old (64.7%) and the balance (35.3%) are between 20 to 25 years old.

Table 1
Summary of Demographic Profile

Variables	Sub	Frequency	Percent
Gender	Male	47	19.5
	Female	194	80.5
Age	Under 20 years old	156	64.7
	20 – 25 years old	85	35.3
	26 – 35 years old	0	0
Program enrolled	Diploma in Accountancy (DIA)	198	82.2
	Diploma in Accounting Information Systems (DAIS)	43	17.8

Descriptive Analysis

The first question that we asked to the respondents was whether they know about the AI. Based on the results from Figure 1, most of the respondents knew a little about AI (73.9%). Only 19.9% knew well about the term AI. Surprisingly, there were also some accounting students who never know about the term AI (6.2%) in their daily lives.

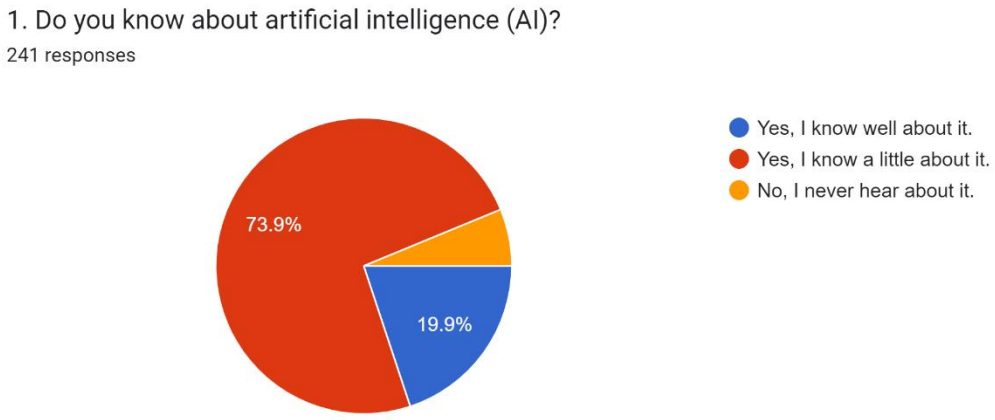

Figure 1: Awareness on the term of AI

The second question that we asked to the respondents was whether they are aware IA is affecting their everyday lives. Based on Figure 2, half of them were aware about that (55.6%) while 35.7% were not so aware about AI and the remaining 8.7% of the respondents were not aware about AI at all. These results showed that even though AI technologies have been widely used and applied, some students might not aware because they did not understand about the term AI itself and its applications in their daily lives.

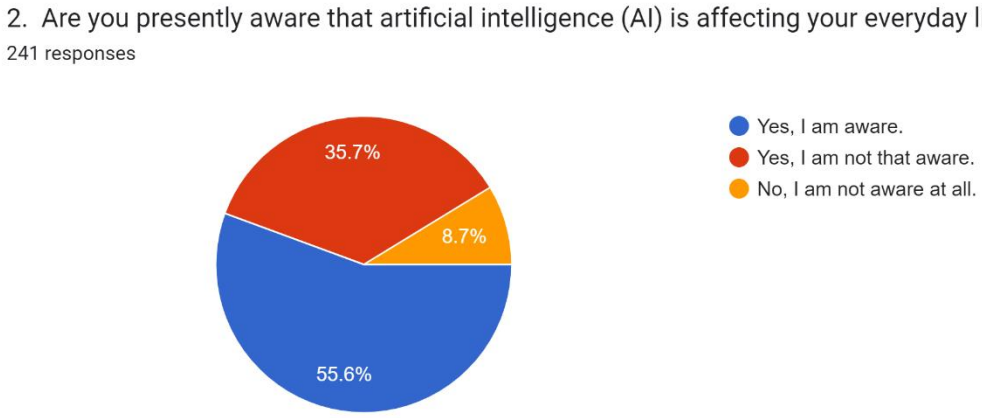

Figure 2: Awareness on AI in daily lives

The third question of the survey was whether the respondents aware about some applications that used AI technologies. Based on the results from Figure 3, majority of them aware about AI applications such as Siri, Amazon, Facebook, Netflix, Spotify, Waze and Shopee. However, for application of AI in Nest and Turnitin, majority of them did not aware about that. This probably because they did not familiar and seldom used these two applications in their daily lives.

3. Were you aware that some/all of the following applications use AI-style technologies?

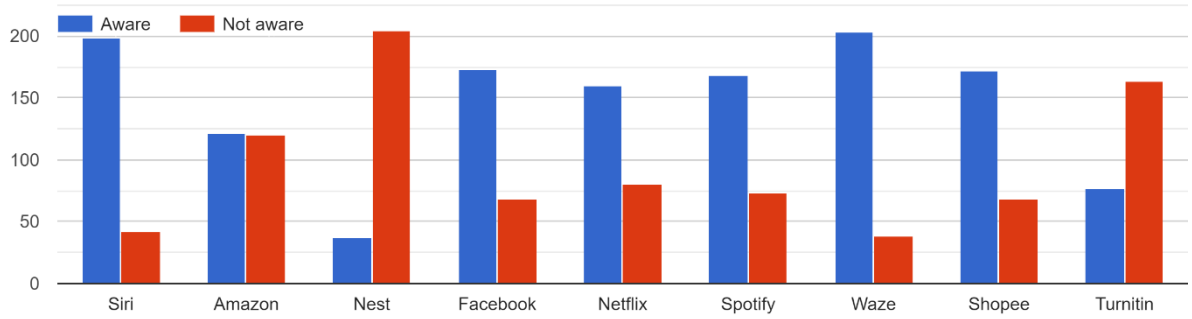

Figure 3: Awareness on AI applications

The fourth question was asked to know the knowledge of respondents about the benefits of AI across different aspects. Results from Figure 4 implied that most of the respondents agreed that AI could benefit people in several ways such as (1) improvements in home energy efficiency, (2) faster diagnosis of disease, (3) make diagnosis more accurate, (4) enable families to better care for elderly relatives and (4) reduction in driving accidents. Nevertheless, due to lack of understanding on the term of AI, there were still some students who did not know about these benefits of AI.

4. Artificial intelligence (AI) could benefit people in a range of ways as follows. Please select the best answers to reflect your opinion.

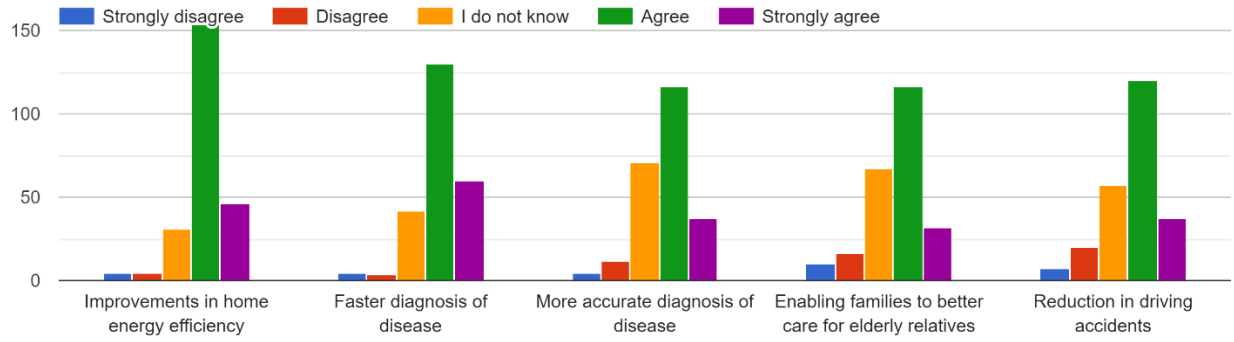

Figure 4: Knowledge on benefits of AI

The fifth question in the survey was about the knowledge on possible impact of AI. As shown in Figure 5, most of the respondents have knowledge on these. Majority of them agreed and strongly agreed about the impact of AI in (1) job creation, (2) country's economy, (3) opportunities for new talents that can create, apply and optimize new AI technologies, (4) increase requirements for creativity, emotional communication and complex problem-solving and (5) improve environmental planning, pandemic disease prevention, disaster management and crime prevention.

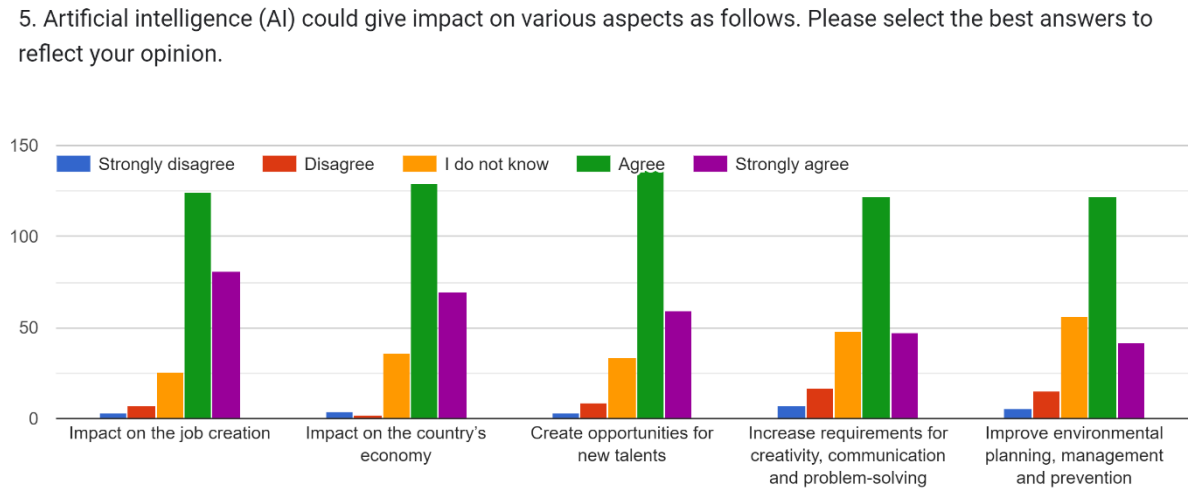

Figure 5: Knowledge on impact of AI

The last question that we asked to the respondents was about the future prospects of AI. Results from Figure 6 concluded that most of the respondents agreed (1) they were interested in a career or work using AI technologies, (2) more research is needed into the use of AI in everyday life, (3) they were excited to see what AI can do in the future, and (4) they would like to see more investment in AI technologies. However, majority of them did not know that their current work or study is benefit from AI. As have been mentioned before, this situation could be due to lack of understanding on the concept of AI. Most of them also did not realize about AI applications which they used every day in their study such as accounting software like UBS Accounting and Mr Accounting.

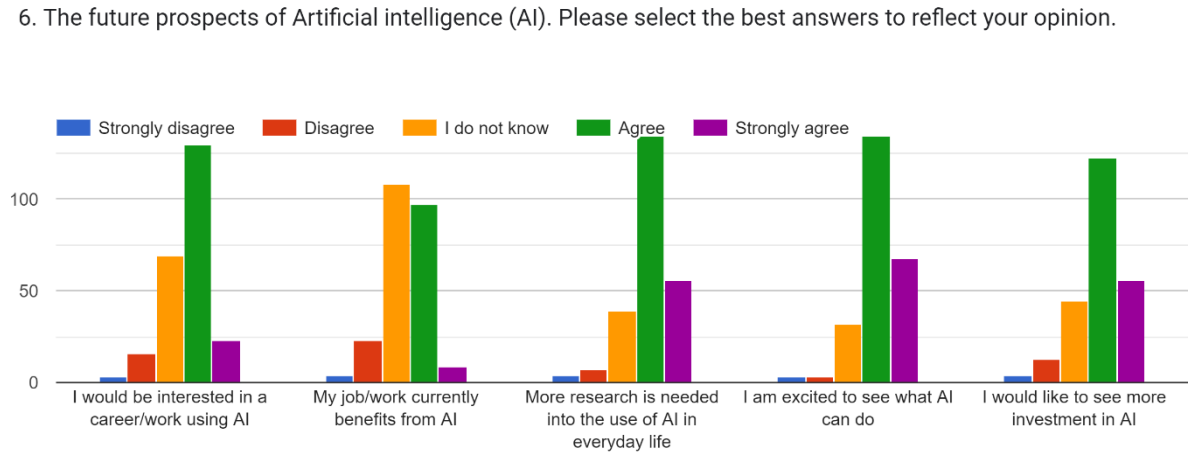

Figure 6: Knowledge on future prospects of AI

Discussion of Results

Using descriptive approach, all the results and findings presented earlier suggested that most of accounting students aware and have knowledge about AI and its applications. Only a few of them did not aware the term and the concept of AI due to lack of knowledge and understanding. To some extent, there were some respondents who did not realize that they use AI applications in their daily lives. Additionally, some of them might think that AI is a new

concept for them. Overall, based on the results we can conclude that accounting students have moderate awareness and knowledge on AI technologies. Correspondingly, the findings were in line with the previous study by Samyuktha *et al* (2020) that found that medical professionals had moderate levels of knowledge about AI, which can be improved. More specifically, these recent studies also advised that everyone, particularly students, should be made aware of and knowledgeable about AI, as they will use this technology when they begin their careers in the future.

Conclusion, Limitation and Recommendation

AI plays an important role in society and thus, has attracted vast interest among the public, academia and government in the last few years (Cox, 2021). Within the limits of the study, awareness and knowledge of scope of AI was evaluated. Upon evaluation, it was found that the accounting students had moderate levels of awareness and knowledge about AI. This study offers fresh perspective on how AI is used in numerous fields and in daily life. The findings of this study provide some insights and value added in shaping the interest and knowledge especially among accounting students towards AI technology. This research is considered as a new leap in AI technology study, where extensive research and knowledge about AI and its scope must be further explored for the future reference. Some limitations were found in this study. Firstly, the selection of students particularly in accounting courses in UiTM Tapah may restrict the generalization of the results. Upcoming research should widen the opportunity of the sample selection outside the sample of UiTM students to create a true representative of the overall population. Secondly, this study only focusses on awareness and knowledge among accounting students. It is recommended that potential research studies consider other contributing variables such as the issues of negative effects of AI with the aim to generate more comprehension about AI. The other one is the unwillingness of the respondents to answer specific questions honestly. Therefore, to prevent respondents' responses from being biased, future research should keep an eye on how questionnaires are distributed, maybe using face-to-face surveys.

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