Impact of Artificial Intelligence as a Disruptive Technology on Accountancy

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ABSTRACT

The impact of artificial intelligence as a disruptive technology on accountancy is an in-depth research on how this particular innovative technology can affect the field of accountancy, discussing its advantages and disadvantages. In order to gather reliable responses to the questions connected to artificial intelligence on accountancy, the researchers held one-on-one interviews with professionals who are decision makers and accounting professionals with reputable working experiences. This study determines the emergent themes surrounding the perception of these individuals with factors pertaining to awareness, knowledge, applicability, and potential. Focal points as to what professionals and students under the said field should prepare for in order to adapt to the evolving technology of this generation is also discussed. In order to provide a complete knowledge of reasons, opinions, and insights while maintaining a position of neutrality in the research process, the researchers used the qualitative study process. The researchers were suitable to identify how AI can be an advantage to the field of accountancy in terms of efficiency and effectiveness. Despite the improvement of artificial intelligence, human intervention is still a necessity. Gathered from all the respondents, artificial and human intelligence can both work hand in hand in order to obtain best results.

Keywords: Artificial intelligence, disruptive technology, accountancy

INTRODUCTION

This generation has been emerging fast in expression of technology and as most people say, we are now living in the information generation that is also distinguished as the computer age, digital age, or new media age, in which the economy is supported by intelligent technology found readily through the access of the internet. Nowadays, there is this word called disruptive technology. It is an innovation or an established technology that is composed of a new world market that trill the industry by replacing established market-controlling firms, products, and services. There are plenty of types of disruptive technology but the most threatening of them all is artificial intelligence (AI). Artificial intelligence is one of the most concerning innovations in our world now. According to John McCarthy who is known as the father of artificial intelligence, "it is the science and engineering of making intelligent machines, especially intelligent computer programs." The objective was to explore ways to make a machine that could reason like a human, was capable of abstract thought, problem-solving, and self-improvement. An AI Solutions Organization (which is SAS Institute) also proclaim that, "artificial intelligence has the possibility for machines to learn from experience, adjust to modern inputs, and do human-similar work. Using these technologies, computers can be educated and programmed to fulfill particular tasks by processing huge amounts of data and acknowledge patterns in the data." The researchers believe that this matter is very important for accounting professions. This generation is increasingly evolving, and everyone should be aware, informed, and educated of how these technologies can impact respective professions and careers. The result and impact of artificial intelligence on accountancy can serve both as advantage and disadvantage at the same time. With respect to accounting, it can potentially be an absolute aspect as to auditing and financial statements can be done more precisely and efficiently. On the other side, it can be threatening because a multitude of people preview that over time, artificial intelligence may replace and take over some positions of accountants. This study proposes an in-depth research on the impact of artificial intelligence on the accounting profession.

Objectives of the Study

The basis of this research is to be able to do an in-depth study in the impact of artificial intelligence on the accounting profession while determining the emergent themes through the data gathered from respondents in dealing with artificial intelligence in the accounting profession. This will answer the following objectives for this research it will able to discover the recognition of the professionals under the accountancy field about artificial intelligence on accountancy with factors pertaining to awareness, knowledge, applicability, and potential: to determine the possible effects pertaining to the disadvantages and advantage of artificial intelligence on the accounting occupation; to determine the major emergent themes surrounding the perception of the respondents regarding AI in accountancy and to determine the focal points as to what the professionals and students under the accounting field should prepare for in order to adapt to the advancing technology of artificial intelligence.

METHODOLOGY

In order to provide an in-depth understanding of reasons, opinions, and insights while maintaining a position of neutrality in the research process, the researchers used the qualitative research method. This method is a key instrument involved closely with data collection and analysis that values openness and flexibility of data. Qualitative research method produces a much-detailed information pertaining to a smaller group of people that will relevantly result in a rich understanding that reduces generalizability at the same time. The common assumptions in a qualitative research are that knowledge is more on the subjective side rather than objective, and the researchers learned from the respondents in order to understand their perspectives thoroughly. The researchers attempted to maintain a position of neutrality while engaged in the research process in order to ensure the study stays objective. This study was conducted in Region IV-A (CALABARZON). It is located at the south-western part of the Luzon island. The researchers chose Region IV-A because a number of professionals in the field of accountancy are willing to help the researchers with this study. These professionals have background knowledge on the study which is about the relation of artificial intelligence and accountancy. The researchers communicated and gathered information from the respondents through an interview. The research instrument implemented in this study is the interview approach wherein the researchers held one-on-one interviews with the respondents. The interviewees' answers were recorded and written for data collection. The perceptions of the respondents about the topic are significant because this information served as data to get major emergent themes required in the research.

RESULTS AND DISCUSSIONS

Awareness and Knowledge
Accountants' awareness on artificial intelligence

The researchers asked the respondents if they are aware or have an idea of what artificial intelligence is. A literature by Bernard (2018) stated that, "we live in the time of presence identification, robotic encounter, sci-fi movies, machine learning and it is time to substitute human interaction with human-like interactions, just like that of artificial intelligence that removes all human errors and doubles the efficiency, quickness, and correctness." All of the respondents have heard about the development of artificial intelligence.

Applicability
Embrace specialization and use of technology

Applicability is about embracing specialization and use of technology for the accounting profession and its effect on decision makers and accountants. Coming from them, AI improves fraud detection through more sophisticated machine learning models of normal activities and better prediction

of fraudulent activities, it can be extremely accurate which at times replaces and in, some cases, far supersedes human efforts making it clear that AI can be a powerful tool for accuracy that surpasses human efforts, improving the quality of work. In order to make a positive sight of the future, we need to evolve a deep knowledge of current evolving technologies in order to adapt. Businesses are now adapting and accomplishing advanced technologies to streamline their operations, and one action that is on top of the slope is accounting. This is since AI is giving full positive outcomes similar to reducing costs and time, growing productivity, and improving correctness. All of the respondents agree that since we are currently in the modern era, accountants need to embrace specialization and use of technology because it helps improve efficiency and effectiveness of their work, according to the accounting associate.

AI's advantage and disadvantage on accountancy

As stated in the previous related literature, Marr (2018) explained that as artificial intelligence retains to grow and impact financial responsibilities, human professionals have a chance as well. Not only will they be more productive and well-skilled, they will also be fitted to control more clients and commit more worth since they can determine actionable perception rather than just grind numbers. According Mehta (2018), by the year 2020, artificial intelligence would be clever to fully automate accounting tasks and other financial tasks.

Elimination of human error by AI

The researchers asked the respondents if they have experienced any human errors that they think an artificial intelligence can avoid. The respondents had similar answers stating that many human errors are eliminated by computerization. That is why every company uses an accounting software, and for big ones, they have ERP solutions. In order to achieve best result, however, both AI and humans need to work hand in hand. AI helps in the elimination of human biases and computation errors while human intuition, logic, and reasoning provides more satisfactory and justifiable results.

AI's limitation on accountancy

This explains the respondents' opinion on what artificial intelligence cannot do as an accountant. According to the researchers' literature, despite AI being a very powerful technology, Gillon (2017) said that it still cannot replace human intelligence. The respondents were asked by the researchers on what an artificial intelligence cannot do as an accountant. Though this technology may have a number of strong points, it still has its limitations. The respondents had different answers but all comes as one significant answer. They explained that processes can be automated via artificial intelligence, but in the end, you need a human's intuition and logical reasoning to analyze financial data and reports that will lead to correct decision making.

Artificial intelligence on decision making

This explains the respondents' perspective on what artificial intelligence can and cannot do in relation to decision making. According to the researchers' literature, an article from Florida Tech Online (2018) made a point that AI and humans do not reach into decision making the same way, that humans simply decide on matters and concerns based on intuition and reasoning. These were the responses gathered by the researchers. While AI can be a very helpful tool in presenting and giving exceptional reports and financial data, AI lacks the required qualitative analysis of which a decision also requires aside from quantitative elements. AIs cannot exercise professional judgement in the appreciation and effective communication of financial information. An example is whether you will enter into a new line of business or not. AI can give you computations but, in the end, humans must make such decision. The researchers were able to get identical answers from the respondents that matched the related literature stating that artificial intelligence's limitation is the inability to analyze data and make decisions.

Potential
Jobs/professions to be affected by AI

Potential is about what jobs or professions may be affected with advancement of technology, specifically, artificial intelligence. The researchers asked the respondents' point of view as to what jobs or professions may be affected by the advancement of artificial intelligence and another question that entails if AI is critical to the future of accounting and auditing professions. All respondents agreed that AI is definitely critical to the future of accounting and auditing professions. They also believe, however, that not only accountants and auditors are to be affected by the advancement of artificial intelligence, any profession and job can be affected by this technology.

Possibility of AI replacing humans

This is about the respondents' comments on what will happen if AI takes over humans. The researchers got mixed answers for there are those who agreed and disagreed. The literature by Kellner (2017) supports the answers of the respondents by elaborating circumstances about how they are using artificial intelligence. They were not using AI to replace humans, but rather to advance their work. He cleared up this statement by saying that they use AI to work alongside humans to provide suggested responses to customers. When used correctly and efficiently, artificial intelligence and human intelligence can be such a good compliment and balance to each other's weaknesses resulting to a very effective process that will largely be a significant impact to help the business move forward. This creates a more efficient procedure and consistent learning from both integrations. All of the respondents had the same answer saying that they do not believe that humans can be fully replaced by artificial intelligence. Yes, it can have its huge and significant impact on society but human intervention would still be very necessary. In order to achieve the best result, both AI and humans need to work hand in hand.

Accountants' favor on the development of AI

The researchers wanted to know if the respondents who are practicing accountancy are in favor of developing artificial intelligence relative to accounting. A lot of the interviewees agreed except for one.

CONCLUSIONS

In this study, the researchers found several aspects as to how accountancy can be affected by artificial intelligence. Based on interviews conducted by the researchers, the main themes formulated and analyzed are awareness and knowledge, applicability, and potential. All respondents were sensible of what artificial intelligence is. They had similar answers as to how AI can potentially affect their field of work and that is providing efficiency and accuracy of data provision. Under applicability, the respondents all agreed that the specialization and use of technology is a must and is a long-term partner in almost all financial organizations. Coming from the responses, the use of technology and computerization is a necessity as timeliness is a key issue. Fraud detection improvement, elimination of tedious repetitive tasks, error detection, and outputs produced in a more accurate and timely manner are the advantages of AI, according to the respondents. Artificial intelligence takes many forms and Enterprise Resource Planning is one of them which is being used by big companies nowadays according to one of the respondents. Despite these positive effects of artificial intelligence on accountancy, its limitation is the human's ability to make decisions that includes analysis, intuition, and logical reasoning. Artificial intelligence cannot exercise professional judgment with its lack of required qualitative analysis of which decision is required aside from the quantitative elements. In terms of this technology's potential, any job or profession may be affected by the improvement of AI as it will need less people for routine tasks that will lessen clerical functions. Elaborated from one of the respondents, however, accountancy will be affected to some degree due to manpower reduction and automation. Coming from the perspective of a Chief Financial Officer and Senior Vice President of a reputable company in the Philippines, the innovation of artificial intelligence may be costly but those in the top position will always look at what

costs are to be saved as a result of investing in computerization firmly saying that manpower reduction is always a source of savings. Having that said, an effect of this potential is the upgrade of work and skillset for accountants to further enhance and focus on developing decision-making skills, analysis, and logical thinking which are the main vital roles of the profession. The key term is to adapt and to develop. A lot of the respondents were in favor of the development of artificial intelligence technology. Human intervention, however, is irreplaceable by this innovative technology. The best strategy that can be implemented is the relation of artificial and human intelligence, wherein both sides work hand in hand in order to achieve best results. It is very essential to work with machine learning techniques in order to make the best use of business information while humans will be more focused on logic and reasoning that will provide satisfactory and justifiable results.

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