

Artificial Intelligence in Financial Management and Accounting Profession

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Abstract

In this work, artificial intelligence as a veritable tool in the deployment of financial management services by accounting professionals was studied. Extensive literature analysis with a robust constructive discussion was used to x-ray the impact artificial intelligence is having in financial management and accounting profession. The outcome of the discussions revealed that artificial intelligence has created sustainable financial productivity and more employment opportunities for the engagement of accounting professionals in providing cutting edge solutions in the delivery of quality financial services in different organizations.

Keywords: *artificial intelligence, financial management, accounting profession, etc.*

1.0 INTRODUCTION

Artificial Intelligence (AI) basically means intelligence demonstrated by machines and may be viewed as the simulation of natural intelligence in machines that are programmed to learn and mimic the actions of humans, <https://www.mygreatlearning.com/blog/what-is-artificial-intelligence/>. It has steadily continued to gain global popularity, attention and patronage. As a trending technology, AI is increasingly impacting positively every aspect of human endeavor and profession hence, the natural quest and inclination to associate and identify with AI. Financial management and accounting profession are not left out in this global embrace of artificial intelligence.

Presently, daily human life without the engagement of artificial intelligence solutions Stancheva-Todorova (2018) opined seems imaginary. As was noted by Makridakis (2017) smart-phones have the capacity to comprehend speech, complete words during text writing and offer advice in correct spoken language. Parloff (2016) attributed the ability of modern day computers like Watson, AlphaGo and DeepMind computers to teach by them based on a “software writing software” principle to the advancement in AI.

Much research has been carried out on AI application in financial management, auditing, taxation, financial accounting, management accounting and personal financial planning. However, as was noted by Baldwin et al. (2006) development and use of expert systems (ESs) in

accounting discipline tops the most studied area. Sutton, et al. (2016) explained ESs, as software programmes attempting to replicate human experts' behaviour and expertise, store human knowledge and experience and transform it into rules hence, trying to solve accounting problems and perform some accounting tasks. In the financial industry, financial management is viewed as integral and essential part of promoting sustainable, practices, procedures and development in an organization. Therefore, to achieve effective financial management application inclusion in terms of measuring, evaluating, and disclosing the extent of progress achieved in a given time, Al Ameri, and Nobanee (2021) posited that organizations have embraced the use of Artificial Intelligence (AI) in major financial management practices. Consequent to this, Al Ameri, and Nobanee (2021) further stated that different AI approaches have led to an improvement in some of the financial procedures like the fiscal diligence employed by organizations to modernize and enhance credit decisions. Such an approach Al Ameri, and Nobanee (2021) concluded has been effective for the financial managers to monitor and manage all administrative roles and transactions within the organizations.

Johnson et al., (2019) observed that artificial intelligence has contributed immensely in technological advancement in financial institutions assisting to cut costs and added values in service delivery with faster assistance. Therefore, consistent application of AI has greatly resulted in the development of business models that have greatly transformed financial management service delivery in organizations.

Despite the attempts for automation using artificial intelligence, contributions of accounting professionals to improve efficiency and effectiveness of their work and deliver more value to businesses cannot be underestimated. In the light of the aforementioned, the recent technological breakthroughs in AI are now ushering a new era in accounting profession, hence, refocusing research interests from ESs applications to new perspectives towards accounting practitioners. Therefore, detailed analysis of different literature materials and robust discussions on applications of AI in financial management and accounting profession would in no small measure help to elucidate the evaluation of the general effectiveness of AI in improving financial transactions in organizations.

2.1 Artificial Intelligence in Financial Management

Cash management is a critical issue in any organization. The fundamental goal of any organization is to make and maximize profit and this cannot be achieved without proper, effective and efficient financial management. Hence, achieving the financial objectives of any organization anchors on adequate planning, organizing and controlling the cash assets of the organization to earn and maximize profit.

Irrespective of the size of any organization, financial is very critical. Phillips, (1997) noted that the more complex an organization becomes, the greater need for proper cash management and forecasting.

For survival and sustenance, Donepudi et al. (2020) argued that every organization needs better forecasting to succeed. This however, poses a difficult task for large organizations in managing transactions across different locations and time zones while working with different international banks. This Donepudi et al. (2020) continued makes tracking and accessing of cash flow information cumbersome. Cash management Donepudi et al. (2020) further stated will be more

difficult in the future, hence, the need to employ AI and machine learning to perform these tasks efficiently since organizations want better accuracy in cash forecasts. Man, unaided cannot effectively perform this onerous task efficiently Donepudi et al. (2020) asserted.

Emphasizing on the relevance of artificial intelligence, Donepudi (2017) argued that many organizations are employing AI to help reduce the cost of product and service delivery and hasten business processes. Corroborating the work of Donepudi (2017), Mendling et al., 2018 hinted that automation using artificial intelligence helps to manage the challenges of cash flow in organizations.

Donepudi (2017) also observed that the work load of an organization keeps increasing and accomplishing all the work load by man unaided is a difficult and time consuming. The speed and accuracy at which human effort can accomplish any given task is not comparable with the application of AI to the same task. Hence, there is a need for expert systems with artificial intelligence Donepudi (2017) insisted.

Singh et al. (2020) summarized the impact of artificial intelligence on financial management on four cardinal areas thus: Personalized financial services, The reduced cost of Artificial Intelligence in finance, Business acceleration and The Future and observed that all Artificial intelligence in financial management is beneficial for the economy and has brought a new and easy work structure for people engaged in finance with various options available to them.

Geetha and Vimala (2012) investigated the role of AI in asset valuation, risk management securities trading and monitoring and customer relationship management (CRM) and identified the benefits of AI techniques as helpful in reducing the risk of frauds.

Kashiwagi (2015) in their study explored the use of Artificial Intelligence (AI) in finance sector and highlighted that the impact of AI in financial management in areas like Text mining, voice recognition of financial reports, Anomaly detection through pattern recognition, Market analysis through data mining and Formulation of investment strategies.

Lagarde, 2018 reported that Central banks can apply innovations to their banking practices and policies to obtain transparency and a framework facilitating improvement in efficiency and to curb fraudulent practices.

Attaran, (2004) viewed information technology as highly successful when applied in the area of business process re-engineering to ensure the capabilities of its sustainability to compete and create an edge over others.

Johnson et al., (2019) recommended that in deploying AI applications, innovations such as trading algorithms should be employed in integrating information with respect to the changing market dynamics and price levels. This Johnson et al., (2019) can be achieved with the proprietary algorithms that make trading rapid and effective. Therefore, before implementing the AI features in an organization, the financial management team should ensure that the main tasks which include risk recognition, assessment, and prevention are identified and captured in the system for better market improvements.

Artificial Intelligence is helping many organizations to serve the customers better and offer more relevant products through the appropriate channels. Chat-bots are currently applied by different industries which are automated service assistants offering customers, the convenience of resolving their queries via online messaging system through devices like Personal computer, laptops, and smart-phones eroding the personal visit to their branches.

2.2 Artificial Intelligence in Accounting Profession

In the views of American Accounting Association, accounting basically deals with the process of identifying, measuring, and communicating economic information with the hope to influence perhaps positively, the decisions of the users of such information in effecting socio-political and economic changes within a system and beyond. The role of accountancy profession as a fulcrum on which the shaping and supporting of businesses, organizations, and global economies anchors cannot be overemphasized. The accounting profession Kaidonis (2008) observed, is pivotal in any aspect of every economy ranging from serving the state's and the individual's interests. The views of Kaidonis (2008) was further supported by Jindrichovska and Kubickova (2016) as reported in Kwarbai and Omojoye (2021) where it was noted that qualified accounting professionals function in various capacities within an organization, providing book keeping, data management and reporting services as demand requires.

Generally, as was pointed out by Agnew (2016) accounting profession is undergoing a fundamental change due to advances in data analytics and artificial intelligence (AI). The involvement of artificial intelligence (AI) in accounting profession Kwarbai and Omojoye (2021) acknowledged has ushered in a new era and continued to change the narratives in this noble profession by shifting the long-age known paper and pen tradition entry mode to computer and software based era. According to Keenoy (1958) as reported by Kokina and Davenport (2017) the idea of employing artificial intelligence in accounting and auditing is certainly not new; hence, there is every reason to expect that its impact on the field will be more substantial in future years because of recent developments in information and technology. Currently, Kokina and Davenport (2017) noted artificial intelligence requires both substantial data and processing power, and both are available in large quantities.

It should be recalled that the University of Oxford in 2015 forecasted that accountants have a 95 percent propensity of losing their jobs in the light of recent technological revolution in the industry owing to AI as machines take over the role of data analytics and number crunching, Griffin (2016). Reinforcing the stance of the University of Oxford in 2015 Kwarbai and Omojoye (2021) hinted that improvement and advancement in technologies, artificial intelligence in perspective, has eaten deep into the accounting profession, hence, posing a risk to the relevance of the accounting profession in modern day world. Greenman (2017) and FSB (2017) however, countered the positions of Griffin (2016) and Kwarbai and Omojoye (2021). While Greenman (2017), believed that technological advances eliminates and creates jobs as artificial intelligence assists in reducing rigorous, tedious and painstaking nature of accounting profession, thereby, making other accounting processes more efficient and reliable; FSB (2017) simply viewed artificial intelligence as the application of computational tools to address tasks traditionally requiring human sophistication. The basic strategy of Artificial intelligence has always been to seek out progressively more complex human tasks and show how computers can do them in humanoid ways. Lombardo (2015) observed that the technological power of the computer lies in its versatility, intelligence, connectivity and complexity rather than in its energy trust. Dilek et al. (2015) stated that artificial intelligence (AI) has an outstanding feature such as Computational Intelligence, Neural Networks, Intelligent Agents, and Artificial Immune which has made it to become an essential part of technology industry providing the heavy lifting for many of the most challenging problems in computer science. Therefore, accounting professionals are required to seek and acquire relevant skills that will aid adaption to recent technological evolution in the profession occasioned by AI. Odoh et al., (2018), observed that the greatest

danger of Artificial Intelligence involves ignorance on the part of individuals professing complete understanding of AI, whereas otherwise. As was canvassed by Kwarbai and Omojoye (2021), the recent technological breakthroughs in AI are now opening a new page in accounting discipline refocusing the research from ESs applications to some new perspectives towards accounting practitioners with the posers: how can accountants benefit from the use of AI capabilities and what is the long-term vision for AI and accounting profession?

Therefore, it becomes imperative that businesses maintain their competitive advantage by constantly seeking to develop and achieve optimal efficiency. To align with aforementioned, accounting professionals should as a matter of necessity and urgency redesign its training and development programs to accommodate the current trend AI has brought into the profession to remain relevant with a competitive advantage in a globalized financial management system.

3 Discussion

Having reviewed extensively on artificial intelligence in financial management and artificial intelligence on accounting profession, it becomes important to x-ray how AI is creating more opportunities in financial management and accounting profession for accounting professionals. This discussion will also, explore on the innovation in terms of ease of doing work and flexibility (speed and accuracy) application of AI has introduced in financial management and accounting profession.

Artificial Intelligence as was coined by John McCarthy is an experimental branch of computer science that pursues its goal of creating an intelligent machine that can perform diverse tasks by using its intelligence Yadav et al., (2017). Odoh et al., (2018) viewed AI as academic field of study which studies how to create computers and computer software that are capable of intelligent behavior. In the views of Elaine (2000), AI as a field of study, centers on how to make computers do things better than humans; hence, systems that think like humans (system that thinks rationally) and systems that act like humans. This simply means that AI is the capability and capacity of an artificial (electronic) device(s) to carry out the functions of a human brain i.e. expert systems, considered as software programs attempting to replicate human experts' behavior and expertise, store human knowledge and experience and transform it into rules thus trying to solve accounting problems and perform some accounting tasks. Accounting profession, Kwarbai and Omojoye (2021) noted is a profession that is responsible for collecting, classifying, and recording, summarizing, analyzing and interpreting of information to users of financial statement. It provides qualitative financial information about economic entities that is intended to be useful in effecting economic decisions. Such financial information assists users of the financial information to articulate informed financial decisions among alternative uses of scarce resources in the conduct of business and economic activities.

Professional accountants are trained personnel by approved and organized institutions of learning who have also obtained additional training from recognized professional accounting bodies. The professional accounting bodies accord recognition and award license to professional accountants to render accounting and financial services to the public. These accounting bodies monitor, supervise, reward and reprimand where and when the need arises professional accountants to ensure strict adherence to the principles of best practices and ethical conduct of the accounting profession.

Upsurge in the use of AI in financial management and accounting profession is characterized by forces of demand and supply. There are also many situations in modern business transactions in

which traditional human approach to analytics and decision-making is practically unachievable. In such situations, decisions making involves much data and the time frame too short for humans to be accurately used in the process. Digital advertising, medical diagnosis, predictive maintenance for industrial equipment, and a detailed audit of all company transactions fall into this category Kokina and Davenport (2017). AI is applicable in almost every area of accounting operations. The implication is that AI will reduce the rigorous, tedious and painstaking nature of accounting profession and make it more effective and efficient while rendering financial services. With the infusion of artificial intelligence and computer technology into other technologies and its attendant transformation in the mode of carrying out business activities, most organizations large, medium and small scale are now technology based in one form or the other. This to a good extent confirms FSB (2017) position that both public and private sector institutions use artificial intelligence technologies for regulatory compliance, surveillance, data quality assessment, and fraud detection. The accounting systems and operations moved out of the arena of paper journals and ledgers into computer-based formats with the advents of computers which has powered the artificial intelligence in applying the methods of self-management, self-tuning, self-configuration, self-diagnosis, and self-healing to achieve optimum result in accounting operations FSB (2017) hinted further.

As Odo et al., (2018) argued the evolution of accounting software's and the recent developments in artificial intelligence has completely transformed the accounting systems. Murungi and Kayimba (2010) contended that non-application of software/expert systems technology in business literally suggests that financial information of such organization may not be accurate as the utilization of computer technologies allows companies to maintain a competitive advantage over others. Ravi (2018) indicated that the incorporation of AI in rendering financial management services have engineered innovation used to increase the overall productivity of the organization. AI enhances efficiency and productivity through the provision of automation that reduces biases and errors caused by psychological or emotional factors Ravi (2018) noted. Therefore, elimination of this bias ensures transparency and reliability in the organization making informed decisions. The findings further demonstrate that with the developments experienced in Fintech Development, the financial institutions have been able to reduce costs, manage risks, and improve quality of service while increasing the profits accrued by the use of AI and machine learning (Giudici, 2018).

4 Conclusion

Robust literature analysis and constructive discussions adopted in this research revealed that engagement of artificial intelligence, (AI) in financial management and accounting profession has created much positive impact on the duo. AI breeds sustainable financial productivity for accurate financial decisions and creates diverse professional opportunities that have resulted in a surge for more demands in the services of accounting professionals in meeting the growing challenges in today's complex financial industry.

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