



PERCEPTION OF ACCOUNTING LECTURERS ON THE FUTURE OF ACCOUNTING PROFESSION IN THE ERA OF EMERGING TECHNOLOGIES

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Abstract

The emerging technologies have reshaped processes and procedures in many professions including accounting to the extent that no profession could afford to be left behind in adopting these technologies. This study determined the perception of accounting lecturers on the future of accounting profession in the era of emerging technologies. Three research questions guided the study and two hypotheses were tested. Descriptive survey research design was adopted for the study. The population for the study comprised accounting lecturers in polytechnics and colleges of education in Osun state. The sample for the study consists of forty (40) accounting lecturers purposively selected from polytechnics and colleges of education in Osun state. Data for the study were collected through a structured questionnaire on a four-point Likert scale. Internal consistency of the research instrument was tested using Cronbach alpha and a reliability coefficient of 0.87 was obtained. Data collected were analyzed using mean and standard deviation for the research questions, while t-test was used to test the hypotheses at 0.05 level of significance. Findings from this study revealed that emerging technologies have greatly influenced accounting procedures and practices. The findings also revealed that the emerging technologies provides opportunities for improvement and efficiency in the discharge of accounting duties. The study recommended that curriculum of accounting courses must be upgraded and redesigned to accommodate new skills required by the emerging technologies.

Keywords: *Accounting Lecturers, Accounting Profession, Future, Emerging Technologies*

Introduction

Emerging technologies have redefined operations of many institutions around the world to the extent that digitalization is being embraced by people in daily activities. These technologies are accessible now than ever. They have significantly improved people's way of living and brought tremendous improvement in business operations and human activities. Many professions including accounting professions are now adopting these technologies in their daily engagements with many tasks being automated. Accountant routine tasks are daily performed by robots. Since the role of accountants will continue to be decisive for organisations, despite the emerging technologies, accountants should endeavour to enrich their creativity and sense of improvisation (Hoffman, 2017). Gulin, Hladika and Valenta (2019) stated that accounting profession will be much affected by technological advancements and globalization to permit updates and improvement as a cutting-edge profession. Technological advancements have enabled the collection and analysis of large amounts of financial data, leading to enhancement of business strategies and financial planning. Scholars in the accounting profession believes that new technologies will attract many benefits and lead to advancement in the profession. According to Gulin et al (2019) the risk of automation may influence 702 jobs, and the accounting profession is at the top of list, which indicates that it has a high probability of being automated and digitalized in the near future. However, application of new technologies can lead to many opportunities to improve the performance of the accounting business but professionals must be conscious of its usage.

Accounting profession renders the services of: compilation (bookkeeping) services, external auditing services, internal auditing services, forensic services, taxation services, valuation services, human resource services, financial advisory services, bankruptcy and insolvency services among others. However, accounting profession is faced with challenges such as: human error, lack of management integrity, and failure of new accounting rules and regulations to curb accounting frauds. Over the past few decades, technological innovations such as accounting software, electronic data interchange (EDI), robotic application, artificial intelligence, cloud computing, blockchain and big data technology, have revolutionized traditional accounting practices. These innovations have streamlined processes, enhanced data accuracy, and enabled real-time reporting. Automation through technologies like robotic process automation (RPA) and artificial intelligence (AI) has led to improved efficiency by automating repetitive tasks, reducing manual



errors, and speeding up data processing. Robots that have more sensory capacities than humans are being developed today to assist in performing most of the human tasks, through artificial intelligence (AI). The simplification of accounting procedures while enhancing their efficiency and effectiveness due to the use of information technologies has enabled businesses to expand their commercial deals and enhance public confidence in them. Mosteanu & Faccia (2020) listed the main benefits of IT as being: reduction of error (especially human error), low risk of fraud, system automation, big data analysis, huge cost savings, increased reliability in financial reports and reduced workflow. However, to obtain these benefits from digital transformation, organisations must guarantee the interoperability and integration of IT solutions (Lehne, Sass, Essenwanger, Schepers, and Thun, 2019).

Blockchain technology is a series of encrypted data items. It contains details of the transactions that have occurred with a set of crypto currency coin(s) (Ince, 2019). They create the whole chain by the time they are produced, and save in all the servers. Transactions are automated without the participation of third parties to reduce the mistakes from intermediaries and no single individual on the network can make any change without the agreement of more than half of the users. This make it safer to save information by using blockchain technology and as such responsible for the widely use of the technology in accounting. According to the Price Waterhouse Coopers Global (Pwc) blockchain survey, 82 per cent of blockchain cases were used in financial services in 2017 and 46 per cent in 2018, from which a large range of the usage of blockchain technology in the accounting and finance industry can be seen (Pwc, 2018). Blockchain is a decentralized ledger or database that is maintained across a network of computers. The exploration of blockchain in the accounting profession will make great contributions to the revolution of finance and accounting practices of healthcare, public institutions, manufacturing, energy, and financial companies in a disruptive manner (Demirkan, 2020). Meanwhile, blockchain technology tends to be susceptible to security threats like cyber-attacks which could probably lead to financial fraud. Richins, Stapleton, Stratopoulos and Wong (2017) reported that fraud detection may be mainly rules-based if it is going to become fully automated. It might be easier for fraudsters who recognize these rules and alter their behavior accordingly, so that fraud models fail to detect their activities. There are three main types of cloud computing: Infrastructure-as-a-Service (IaaS), Platforms-as-a-Service (PaaS), and Software-as-a-Service (SaaS). Adjei, Adams and Mamattah (2021) pointed out that some researchers describe cloud computing as an innovative and promising technology, and it has become a part of people's daily life and their future development. Al-zoubi (2017) stated that in companies that perform selective outsourcing, cloud users indicate higher improvement levels in their accounting processes than non-cloud users. The cloud computing is also used as e-accounting books to record daily operations, save, copy, retrieve and update documents. This saves time and cost of managing data. Other advantages include: real-time services to clients-financial reporting and other services, increased collaboration between accountants and their clients and files can be viewed, shared, edited from anywhere and at any time. Yau-Yeung, Yigitbasioglu, & Green (.2020) listed risks associated with cybersecurity as: hardware and software compatibility, Internet/server stability, data security, and data loss. Specific risks of cloud accounting systems and services are; financial statement reliability, legal compliance, location of data, and ownership of data (Haapamäki & Sihvonen, 2019).

Another type of emerging technology is big data technology which is defined as the large data files that are embedded on the Internet and can often be obtained easily by users, such as the census data (Ince, 2019). Big data contains plenty of information and has the ability to further process the information to make it more valuable. Big data has a close relationship with the cloud computing technology because it can collect various information, but relies on the process technology of the cloud computing technology. Big data is also widely used in accounting industry nowadays. The Institute of Chartered Accountants in England and Wales pointed out that auditors, both internal and external have been at the forefront of accounting's use of big data (ICAEW, 2019). Qasim and Kharbat (2019) remarked that auditing firms have begun to test and implement automating the audit process through the inclusion of a combination of advanced automation technologies with Business Data Analytics (BDA) and cognitive. Price Waterhouse Coopers uses Robotic Process Automation (RPA) technology to collect data, determine the filing status of all entities, review trial balance sheets, and convert data into tax bases (Zhang, Xiong, Xie, Fan and Gu, 2020). This allows easy preparation and revision of tax returns and tax payment submission and responses to related parties' enquiries. Accounting companies finds it easier to collect the related information about their clients by using big data technology. This helps accountants to deliver more value to businesses and carry out financial analysis easily. However, the use of this technology requires proper regulations and constant updates to prevent outdated and low quality information. The myriads of benefits and challenges of emerging technologies being used in accounting profession requires adequate attention for the



profession to optimally benefit from it. Consequently, this paper examined the perception of accounting lecturers on the future of accounting profession in the era of emerging technologies in order to ascertain their awareness of the threats and opportunities associated with these technologies.

Statement of the Problem

It is obvious that the emerging technologies will reduce the number of employable people in accounting profession, but humans will not be totally replaced by the technology. Job availability in accounting profession will reduce and the requirements for jobs in the accounting profession will be more demanding. Accounting tasks such as book-keeping and process-driven auditing will be subjected to greater degrees of automation. However, there are still tasks that are difficult to automate in the accounting activities. For example, auditing may require humans to perform its duties in fraud prevention and fraud detection appropriately. This activity requires a deep knowledge of the business environment and relevant people as well as the flexibility with various fraud situations. All of these may be difficult for technology to achieve. Automation, which includes both mechanized robots (whether humanoid or drone-shaped) and artificially intelligent software programs, have impacted Nigerian job markets leading to downsizing and outsourcing of employees. More job losses could also occur in Nigeria due to adoption of new technologies. While technologies have brought significant benefits, it has also presented challenges. Data security, privacy concerns, and the potential for job displacement are areas that require careful attention. Additionally, the ethical use of AI and automation in financial reporting and auditing processes also cause for concerns. The major consequence of the challenges posed by these emerging technologies is that accounting professionals with the traditional knowledge will be incapacitated and forced out of job. Therefore, the trainers of accounting professionals must be properly informed about these technologies and upgrade their curriculum accordingly. It is against this backdrop that the perception of lecturers is sought to determine their awareness of the threats and opportunities that could result from adoption of the emerging technologies by accounting profession.

Research Questions

The following research questions guided the study:

1. What is the influence of new technologies on accounting profession?
2. What are the threats associated with the adoption of emerging technologies in accounting profession?
3. What are the opportunities derivable from adoption of emerging technologies in accounting profession?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

- Ho₁:** There is no significant difference in the mean ratings of male and female accounting lecturers on the threats associated with the adoption of emerging technologies in accounting profession
- Ho₂:** There is no significant difference in the mean ratings of male and female accounting lecturers on the opportunities derivable from adoption of emerging technologies in accounting profession

Research Method

Descriptive survey research design was adopted for this study. The population for this study consists of accounting lecturers in Osun state tertiary institutions. The sample for the study comprised forty (40) accounting lecturers purposively selected from tertiary institutions in Osun state. Data for the study were collected through a structured questionnaire on a four-point Likert scale of; Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD). Internal consistency of the research instrument was tested using Cronbach alpha and a reliability coefficient of 0.87 was to obtained. A total number of 40 questionnaires were administered on the respondents with 100 per cent rate of return. Data collected were analyzed using mean and standard deviation for the research questions, while t-test was used to test the hypotheses at 0.05 level of significance. Decision on research questions were made based on the real limit of scale values 1 to 4 on a 4-point scale as follows: Strongly Agree - 3.50 – 4.00, Agreed - 2.50 – 3.49, Disagree - 1.50 – 2.49, Strongly Disagree - 0.50 – 1.49. The null hypotheses were accepted where the calculated P-value was less than 0.05, otherwise, the null hypotheses were rejected.

Findings

The results obtained from analysis of data and test of hypotheses are presented below:



Research Question 1:

What is the influence of emerging technologies on accounting profession?

Table 1: Mean Responses and Standard Deviation of female and male lecturers on the influence of emerging technologies on accounting profession.

S/N	ITEM STATEMENT	X ₁ n ₁ =20	SD ₁	X ₂ n ₂ =20	SD ₂	XG	SDG	Decision
	The emerging modern technologies influenced accounting profession in the following ways:							
1	Accounts payable processing	2.74	0.51	2.80	0.63	2.77	0.57	Agree
2	Account Receivable processing	2.83	0.57	2.76	0.71	2.80	0.84	Agree
3	Bank Reconciliation	3.50	0.69	3.66	0.58	3.58	0.64	Agree
4	Interim, continuous, and final auditing	2.55	0.58	3.20	0.67	2.88	0.63	Agree
5	Supplier vetting and set up.	2.90	0.72	2.83	0.58	2.87	0.65	Agree
6	Respond to queries from other functions	3.25	0.81	3.02	0.65	3.14	0.73	Agree
7	Expense management	2.71	0.82	2.82	0.53	2.77	0.68	Agree
8	Evaluation of bids or proposals,	3.35	0.54	2.65	0.65	3.00	0.60	Agree
9	Opening of bank accounts	2.67	1.02	3.08	0.76	2.88	0.89	Agree
10	Processing of loans	2.94	0.59	3.55	0.86	3.25	0.73	Agree
11	Manage inventory	2.70	0.87	2.86	0.65	2.78	0.76	Agree
12	Financial analysis	3.04	0.81	3.30	0.73	3.17	0.77	Agree
13	Tax computations and filing of tax returns	3.22	0.56	2.67	0.84	2.95	0.70	Agree
	Grand Mean/Standard Deviation	2.95	0.70	3.02	0.68	2.98	0.69	Agree

Data in Table 1 revealed that all the items listed had mean ranging from 2.77 to 3.58. This indicates that lecturers agreed that the emerging technologies have influence on accounting profession. The standard deviation score range is between 0.57 to 0.89 which shows that the scores were not dispersed.

Research Question 2:

What are the threats associated with the adoption of new technologies in accounting profession?

Table 2: Mean responses and standard deviation of female and male lecturers on the threats associated with the adoption of emerging technologies in accounting profession.

S/N	ITEM STATEMENT	X ₁ n ₁ =20	SD ₁	X ₂ n ₂ =20	SD ₂	XG	SDG	Decision
	Threats associated with the adoption of emerging technologies in accounting profession.							
1	Risk of cyber attacks	3.11	0.54	2.82	0.73	2.97	0.64	Agree
2	Removal of the "Middleman"-The Accountant.	2.66	0.73	2.91	0.84	2.79	0.79	Agree
3	Commoditization of compliance function	3.60	0.69	3.35	0.66	3.48	0.68	Agree
4	Too many accounting apps in the market-confusion	2.83	0.72	3.09	0.67	2.96	0.70	Agree
5	New skills needed to compete	3.00	0.69	2.66	0.54	2.83	0.62	Agree



6	Loss of jobs due to reduced need for humans	2.94	0.55	3.05	0.82	3.00	0.69	Agree
7	Complex business models and more accounting standards	2.85	0.74	3.11	0.77	2.98	0.76	Agree
8	Reduction of opportunity for junior level accountants to learn	3.06	0.79	3.50	0.84	3.28	0.82	Agree
9	Artificially intelligent and financial analysis software	2.69	0.92	3.61	0.67	3.15	0.80	Agree
Grand Mean/Standard Deviation		2.97	0.71	3.12	0.73	3.05	0.72	Agree

Data in Table 2 shows that all the items listed had mean ranging from 2.79 to 3.48. this indicates that lecturers agreed that the emerging technologies constitutes a threat to accounting profession. The standard deviation of the items ranges from 0.62 to 0.82 showed that the respondents were not very far apart in their opinion.

Research Question 3:

What are the opportunities derivable from adoption of new technologies in accounting profession?

Table 3: Mean Responses and Standard Deviation of female and male lecturers on the opportunities derivable from adoption of emerging technologies in accounting profession?

S/N	ITEM STATEMENT	X ₁ n ₁ =20	SD ₁	X ₂ n ₂ =20	SD ₂	XG	SDG	Decision
Opportunities derivable from emerging technologies by accounting profession.								
1	Finance professionals to focus on higher level jobs	2.56	0.71	3.06	0.74	2.81	0.73	Agree
2	Rendering service to more clients	3.88	0.65	2.73	0.92	3.31	0.79	Agree
3	Offering personalized services to clients	3.60	0.77	3.20	0.52	3.40	0.65	Agree
4	Adapting to change & offering new services	3.09	0.83	3.22	0.55	3.16	0.69	Agree
5	Saves time	3.61	0.94	3.76	0.62	3.69	0.78	Agree
6	Saves cost in long-term	2.84	0.83	3.66	0.72	3.25	0.78	Agree
7	Mobility of service–geography unimportant	3.35	0.87	3.15	0.59	3.25	0.73	Agree
8	Enhanced visibility	3.46	0.82	2.75	0.87	3.11	0.85	Agree
9	New Skills for accountants beyond number crunching	2.96	0.97	3.51	0.75	3.24	0.86	Agree
Grand Mean/Standard Deviation		3.26	0.82	3.23	0.70	3.24	0.76	Agree

Data in Table 3 shows that all the items listed had mean ranging from 2.81 to 3.69. this indicates that lecturers agreed that the emerging technologies provides opportunities for improvement of accounting profession. The standard deviation of the items ranges from 0.65 to 0.86 showed that the respondents were not very far apart in their opinion.

Test of Hypotheses

Ho₁: There is no significant difference in the mean ratings of female and male accounting lecturers on the threats associated with the adoption of emerging technologies in accounting profession



Table 4: Summary of t-test analysis of the opinion of female and male lecturers on the threats associated with the adoption of emerging technologies in accounting profession

Group	N	X	SD	Df	t-Cal	P-Value	Decision
Female	20	3.26	0.82	38	0.68	0.325	Not significant
Male	20	3.23	0.70				

The result in Table 4 revealed a t-calculated value of 0.68 with a degree of freedom of 38 and p-value of 0.325 which is greater than 0.05 level of significance. This reveals that there is no significant difference in the mean ratings of female and male lecturers on threats associated with the adoption of emerging technologies in accounting profession. Therefore, the null hypothesis was not rejected.

Ho₂: There is no significant difference in the mean ratings of female and male accounting lecturers on the opportunities derivable from adoption of emerging technologies in accounting profession.

Table 5: Summary of t-test analysis of the opinion of female and male lecturers on the opportunities derivable from adoption of emerging technologies in accounting profession.

Group	N	X	SD	Df	t-Cal	P-Value	Decision
Female	20	2.97	0.71	38	0.56	0.268	Not significant
Male	20	3.12	0.73				

The result in Table 5 shows a t-calculated value of 0.56 with a degree of freedom of 38 and p-value of 0.268 which is greater than 0.05 level of significance. This reveals that there is no significant difference in the mean ratings of female and male lecturers on the opportunities derivable from adoption of emerging technologies in accounting profession. The hypothesis is therefore accepted.

Discussion of Findings

The finding of this study revealed that female and male lecturers agreed that the emerging technologies have great influence on accounting profession. This finding is in line with Alshirah et al., (2021) who asserted that the digital transition has brought changes in the global industrial landscape, with emerging technologies stimulating innovation, influencing organizational processes, and offering numerous advantages and functionalities, such as reduced costs, better management, efficient services, enhanced administrative functions and fewer errors. Therefore, accountants must exploit emerging technologies to attract new talents and develop existing ones.

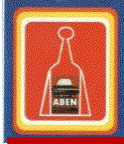
This study further showed that respondents affirmed that the emerging technologies constitute a threat to accounting profession except proactive measures are urgently taken. This is in agreement with the findings of Mohammad, Hamad, Borgi, Sial, and Alhadidi (2020) who found that there is a high fear among accounting professionals related to the fact that their jobs could be replaced by AI. Moreover, to stay ahead of these threats, they need to acquire the knowledge and skills to adapt to the use of information technology and its extremely rapid evolution in order to face the challenges posed by the changing business environment. In the same vein, Grosu, Cosmulese, Socoliuc, Ciubotariu, and Mihaila (2023) submitted that accounting professionals perceive the impact of economic policies on RDI investment not only as a benefit but also as a threat.

Findings from this study also revealed that the emerging technologies creates more opportunities for accounting profession. This is in line with Grosu et al. (2023) who opined that adoption of information technology in accounting activities is driving accounting professionals to re-engineer their business to be able to provide digital services and is spawning innovations by startups such as digital accounting platforms. Chua, (2013) also confirmed that the emerging technologies can lead to better decisions and generate a competitive advantage for business, and the technology to do this is becoming more accessible and affordable. She added that evolution of robotics and convergence with other emerging technologies, a new world of ethical, financial, practical, and operational possibilities will emerge. There will be more capacity to improve accountants' personal and professional lives.

Furthermore, the study revealed that there was no significant difference in the responses of female and male lecturers on the threats to accounting profession from the emerging technologies. Also, the study shows there was no significant difference in the responses of female and male lecturers on the opportunities derivable from the emerging advanced technologies by accounting profession. Thus, the null hypotheses were accepted.

Conclusion

It is undisputable that the emerging technological landscape demands that accountants must acquire new skills, including proficiency in data analytics, programming, and cybersecurity. This implies that lifelong learning and adaptability are crucial for accountants to remain relevant in a technology-driven profession. Furthermore, it must be emphasized that the future of accounting depends on increased use of advanced



technologies by professionals to improve on their traditional system of practice. It is obvious that modern machines can effectively perform the following accounting operations: bank reconciliation, respond to queries from other functions (AI Chatbots), audits, monthly, quarterly, or yearly processing, accounts payable or receivable processing, supplier vetting and set up, evaluation of bids or proposals, expense management. Despite challenges and threats associated with the adoption of the emerging technologies, it is certain that opportunities inherent in using them outweigh the threats. In view of the foregoing, the continuous use of these technologies is unavoidable hence the accountants, lecturers and students of accounting must give acquisition of these skill the needed priority.

Recommendations

Based on the findings of this study the following recommendations were made:

1. Curriculum of accounting courses needs to be upgraded and redesigned stakeholders to accommodate new skills required by the emerging technologies.
2. Accountants and lecturers in accounting profession should endeavor to upgrade their knowledge in digital technology, globalization and evolving regulations
3. Professional accountants will need acquire all-inclusive skills which focuses on the narrative of the organization rather than figures. Skills like; emotional intelligence skill, fraud detection skill and team building are also needed.
4. To stay competitive, accountants may need to expand their roles in providing guidance and business advisory services to their clients.

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