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Scholastic Analysis of the Impact of Digital Technologies on the Accountancy Profession in Nigeria

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ABSTRACT: *The study investigated the effect of digital technologies adoption in the accounting profession. It surveyed the perspectives of experts on the impacts of digital technologies on the accounting profession. The impacts on skills, tasks and work environment as well as the challenges of adoption of digital technologies by accountants in Nigeria were studied. The descriptive survey was used for the study. 127 certified accounting experts in Akwa Ibom State were sampled for the survey. The researcher developed instrument titled "Digital technologies and Accounting Professionals Questionnaire" was used for data collection. The study made use of primary data. Accounting experts were interviewed and questionnaire administered to ascertain their opinion on the penetration, impacts and potential effects of digital technologies on the accounting profession. The instrument was validated by three experts in the Department of accounting, Akwa Ibom State University. Thereafter, the instrument was trial tested for reliability using the test retest method on 20 respondents. The data collated was tested through Pearson product moment correlation, which gave a value of .88. this was deemed good enough and the instrument was then deemed fit for the study. Frequencies and descriptive statistics were used for answering the research questions while simple linear regression was used to test the hypothesis at a 0.05 level of significance. Findings of the study showed that the digital technologies impacting the accounting professions are artificial intelligence, enterprise resource planning, internet of things (IoT), blockchain technology, cloud accounting technology and big data analysis. It was also established that digital technology adoption has a significant positive effect on the changes in the accountancy profession in Nigeria. Also, emerging digital technologies adoption will significantly predict the nature of skills in the accountancy profession in Nigeria. it was recommended that in order to keep adding value for the company, accountants need to developed new skills and acquire new knowledge regarding the use of artificial intelligence and other digital solutions in modern business environment. There is highlighted the need of all employees (including accountants) for development of critical thinking and problem solving, high level of adaptability, flexibility and interpersonal interaction; it is required to learn continuously.*

KEYWORDS: scholastic analysis, digital technologies, accountancy, profession, Nigeria

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INTRODUCTION

With technology expanding in almost every industry today, the accounting sector is also going through significant transformation by evolving through traditional methods. The adoption of modern technology in the accounting profession has significant benefits for accountants and the accounting profession generally. From finding new and more efficient ways of working or delivering better services to clients, to reorienting work procedures, technology allows accountants to achieve more with less, provide outstanding services and help fuel business growth.

Technology in the accounting has helped accountants make statistical analyses, financial forecasts and calculations with great efficiency. Accounting technology has allowed the accountant to move from a desk, covered with papers making calculations that took hours to be completed, to more dynamic ways of performing and, it has allowed the accountant to find new challenges and much more to offer than in the past (Pepe, 2011). Highlighting the impacts of technology in the accounting profession, Kaplan (2018) stated that technology has effect on three broad areas of accounting. First, the work is being changed with the increase in automation, cognitive, and other advanced technology. Second, the workforce is and skills mix is also changing with demands placed on technological and soft skills. Third, the workplace is being restructured to better suit collaboration virtually and physically. In the future, everyone will be working alongside smart machines and technologies; as such, an alliance between the two is critical for success.

Traditional accounting processes are slow, labour-intensive and prone to errors. Manual processes also lead to high staff turnovers as most don't want to spend all day, every day, completing tedious tasks. Replacing manual processes with digital solutions is crucial for your firm to stay competitive, attract top talent and deliver superior services. As today's modern business world is strongly linked to technological advances in many ways, the impact on business functions of technology is enormous (Özdoğan 2017: 210) and digitalization, artificial intelligence, the 4th Industrial Revolution and the e-practices will bring the accounting profession to a very different situation than it is today (Tekbaas 2017). Progress in information technology has changed the accounting function in businesses and the role of accountants (Seethamraju 2010:1). Accounting records transactions and events that are expressed in monetary terms. Although these records have been physical records in the past, they are now almost completely digital.

Digital technology has an impact on the strategic and competitive aims of the company. It also impacts on the business model as well (Mancini et al., 2017). Accounting rules and principles have been established for many years and they do not change over time. On the other hand, accounting industry is evolving. As a consequence of development of technology, the coverage of accountants' tasks and activities is transforming and client expectations are changing. Development of technology and digitalization allow updates and changes of accounting

profession. The accountancy profession is at the forefront of professions that is and will be most affected by technological developments and globalization. It is evident that, with technological development, many digital systems that did not exist ten years ago are now actively used in the accountancy profession (Tekbas, 2018). According to results of the research conducted by Frey et al. (2017) 702 job titles are at risk of automation, and the accounting profession in on the top of this list with high probability of being automated and digitalized in the near future.

Statement of the Problem

The objective and function of accounting essentially remains the "provision of information on the economic performance of a business unit. This objective is achieved by identifying, recording, processing, storage, summarizing and reporting various events within the organization. While the objective has not changed, the widespread integration of technology into the accounting profession and technological change has transformed into something more than simple recording, summarizing and reporting of transactions, exceeding these routines and practical functions and extending throughout the organization including, delegated functions, processing methodologies, controls and outputs expected, all of which are considered as "the system". The system is in fact "anatomy" of accounting. It includes all dimensions of business operations, including the flow of financial data across the organization and beyond. The complexity of the new normal for accountants and computerization have brought about a myriad of changes to the accounting profession once considered a back office function (Ukpong, 2012). These changes have effects on the present-nature and type accounting work and activities, skills and work environment. It also has implications for the future- how the work environment will look like, the skills mix for accountants (will there more need for technological skills) as well as the nature of technologies in the near future and its impact on accounting services. This study was therefore designed to study the impacts of digital technology on the accounting professions by assessing the perspectives of stakeholders in the profession.

Objectives of the study

The broad objective of the study is to investigate the impacts of emerging technologies on the accounting profession. The specific objectives were to

1. Ascertain the technology trends that will impact the accountancy profession
2. Anticipated impacts of emerging technological advancements on the accounting profession
3. Benefits of emerging technological advancements on the accounting profession
4. Identify the challenges of adoption of digital technological advancements on the accounting profession
5. Policy implications for integrating emerging technological advancements on the accounting profession

Research questions

The following research questions are stated for the study

1. What are the digital technology trends that will impact the accountancy profession?
2. What are the anticipated impacts of emerging digital technological advancements on the accounting profession?
3. What are the benefits of emerging digital technological advancements on the accounting profession?
4. What are the challenges of adoption of digital technological advancements on the accounting profession?
5. What are the policy implications for integrating emerging technological advancements on the accounting profession?

Research hypotheses

Ho_1: Digital technology adoption has a significant positive effect on the changes in the accountancy profession in Nigeria.

Ho_2: Emerging digital technologies will significantly predict the nature of skills in the accountancy profession in Nigeria.

LITERATURE REVIEW

Digital Technology and the Changing the Role of Accountants

As technology is broadly changing the field of accounting, it is also changing the role of accountants. Advancing technology does not mean that human accountants are replaceable, just that they will be needed in new capacities than ever before. Lewin (2018) highlights how accounting is changing and new ways for accountants to adapt. There will be less "number crunching" and more of a focus on helping clients understand the results generated. As a result, accountants will become more like consultants and analysts. Overall, accountants will require new digital skills as they assume more roles as their job description is expanded. The first impact on the accounting profession will be changing tasks or the way they are performed. These changes may impact accountants' functions; they may have to complete existing tasks differently or even perform new tasks. As the accountant's role is closely related to the tasks performed and the functions assumed, all these changes may ultimately affect the accountant's role. Similarly, the skills needed by accountants to perform their profession may also be affected (Kroon, Alves, & Martins, 2021).

Emerging digital technologies impacting on the accounting profession

Several digital technologies are finding applications in accounting. These include cloud accounting, big data, artificial intelligence, internet of things (IoT) and blockchain technology.

Cloud accounting refers to performing basic accounting tasks, like managing and balancing the books, using software that resides in the cloud and is often delivered in an as-a-service model. Staff or third-party accountants can manage accounts payable, accounts receivable, the general ledger and much more within the application. Just like other cloud-based systems, cloud accounting software runs on a cloud provider's platform rather than on a local hard drive or server. Users access the tools they need through the internet, meaning employees or third-party accountants do not need to be in a certain location to understand the financial state of the business (Ian, 2021). The cloud offers the accounting industry a new way of doing business. Some of the advantages are Real-time services to clients-financial reporting and other services. It also offers increased collaboration between accountants and their clients. Furthermore, Files can be viewed, shared, edited from anywhere and at any time.

Big data is defined as a collection of very large and complex data coming in various forms gathered from different sources that it becomes difficult to process by using only one of the database management tools or by using application traditional data processing. Big data is all about complexity and speed and is therefore often characterized by the '3 Vs' where – Volume – Represents large volumes of data; Velocity – Represents the high-velocity data flow; and Variety – Represents a wide variety of data, especially in an unstructured or semi-structured form such as images and texts (Watson, 2022). It was also defined by (Gartner. Inc. 2018) specialized in information technology (IT) researches as large-scale, fast flowing and highly diversified information assets, which require economically feasible and innovative processing methods (Ukpong, Udoh, & Essien, 2019). Suleiman (2021) defines big data as a set of data financial and non-financial, structured and non-structured that are obtained from internal and external sources of the organization, and time series models can be used to convert informal data into structured information useful to stakeholders and relevant to the decision-making process.

Maryville University (2019) round up on the goal of big data in accounting is to collect, organize, and tap data from a variety of sources to gain fresh business insights in real time. For example, instead of relying on monthly financial reports for their analyses, accountants and financial analysts have access to up-to-the-minute information from any location with a network connection.

1. Their analyses can now include unstructured data, such as audio, video, and images, as well as email and text files, social media posts, website content, and information gleaned from mobile devices. In the past, analysts were limited to analyzing data that could be converted to a structured format, usually a spreadsheet or relational database.
2. Data analysis is enhanced by using visualization software that offers accountants and their clients unique views of the data that supports their decisions.
3. Auditors are now able to process larger amounts of accounting data in a variety of formats simultaneously, which means their work is done more quickly and is more accurate.

4. Big data improves risk analysis by providing accountants with access to more timely data. Advanced analytics tools allow them to process the data quickly (Giuseppe & Taylor, 2019).

The impact of big data on the roles of accountants, big data and commercial analysis affect the roles of accountants in the coming years as provide an opportunity for accountants to move to strategic and effective roles in business organizations. Accountants use data analytics to help businesses uncover valuable insights within their financials, identify process improvements that can increase efficiency, and better manage risk. Accountants will be increasingly expected to add value to the business decision making within their organizations and for their clients. Accountants who assist, or act as, investment advisors use big data to find behavioral patterns in consumers and the market. These patterns can help businesses build analytic models that, in turn, help them identify investment opportunities and generate higher profit margins. The ability to use big data analysis tools to gain insights about business issues such as customer payment behaviour, seasonal variation in demand for products and services and customer complaints will be critical to this. It means that accountancy and finance professionals will need to bridge the gap between the IT department (that traditionally manages data and tools) and the business (that needs insight to improve processes and develop new products) (Kennan, 2020).

Artificial intelligence (AI) is a computer science term describing a computer's ability to replicate the learning, assessment, problem-solving and decision-making abilities of humans. The purpose of artificial intelligence in accounting is to increase efficiency in essential and foundational routines and practices in a way that ultimately leads to better business decisions (Mac, 2019). To fully appreciate AI's growing application as a viable business tool, it is important to understand what AI can do. Its capabilities can be embraced in the business world because they point to the creation and development of a more efficient corporate community. AI also offers the opportunity to extend the senses, which can have numerous business applications. For instance, AI's ability to deploy machine vision can allow it to make informed decisions that can have a positive impact on quality control and other supply chain elements that are important to business efficiency. For example, artificial intelligence programs do more than perform advanced mathematical calculations — they read and write, too. AI programs can leverage their ability to parse news articles, emails, weblinks and legal documents to choose and present the most salient parts to comprehend. This same ability can be used to gather and analyze information to produce written content that can accurately summarize data (Mac, 2019).

Artificial intelligence can help accountants be more productive and efficient. An 80-90 per cent reduction in the time it takes to do tasks will allow human accountants to be more focused on providing counsel to their clients. Adding artificial intelligence to accounting operations will also increase the quality because errors will be reduced (Bernard, 2020). Although AI is useful in nearly every area of business, it has proven truly revolutionary in the accounting arena. Instead of spending days combing through columns of numbers, accountants can now extract the information

they need with the click of a button. Not only is this a massive time saver, but it also provides more targeted data.

Data is a foundational element in AI and accounting. AI's capacity to gather, organize, analyze and interpret numerical information can make it a valuable tool for an accountant. When its capacity is utilized fully and properly, artificial intelligence in accounting makes it possible for a company to build a more holistic accounting strategy, one that can be built on more efficient bookkeeping and financial accessibility (Mac, 2019).

IoT (Internet of Things) is basically a system of interconnected devices, machines, appliances, among others which interact, connect and communicate with each other and exchange data using the internet, without any human intervention or interaction. In other words, IoT is an extended application of the internet, where any device or appliance that one can think of, is connected to each other and share information and data over the internet (Accounting Web, 2016). The accounting process involves the collaboration of different departments for the collection of financial information. This information is collected by the departments and sent electronically or manually to the accounting departments for bookkeeping. However, any misinformation or delay in the transmission of data can hamper the accounting process, and lead to inaccurate financials (Watson, 2020). It is expected that proper implementation of IoT will expand in some cases, change the sources as well as the flow of data, from billing, resource planning, and core accounting systems. This will consequentially change the way audits are carried out for each of these aspects of business. With IoT assisted accounting, accountants will automatically receive all associated data through a digital system, rather than having to go to a bookkeeper to gather client information. With IoT implementation, accountants will also gain access to real-time transactional data, along with many controls and exposures in the existing operations, increasing the need for continuous auditing processes. This will also allow a wider and more comprehensible risk evaluation, which will help to quicken issue assessment and remediation. It will also offer real-time management which will enable businesses and accountants alike to respond to issues immediately (Accounting Web, *2016*).

The accountants in advisory roles need to make important financial decisions for their clients. They make these decisions on the basis of in-depth data analytics, business patterns, and market research. The accountants are responsible for drafting strategies for growth and the business's secure future. IoT, along with technologies like AI and cloud, can help accounting professionals take informed business decisions. An IoT device can collect the real-time data that it can transmit to the cloud servers for data analysis and process automation with the help of AI (Watson, 2020). IoT can help in efficient workforce management. Managing accountants and keeping track of their activities is paramount to every accounting firm. Moreover, it can be quite difficult to know about an accountant's whereabouts all the time as they have to meet up with their clients regularly. The accountant's themselves want to track their performance to improve their process and optimize

their efficiency. IoT makes it possible for accountants to track their efficiency during the day. The IoT devices can tell you the hours you have been the most alert and the most unproductive. Hence, it helps you work accordingly and get the most out of your day. This data can be sent to the employer in real-time who can track your performance accordingly. In addition, with IoT, employers can also view your health condition and offer you with benefits (Watson, 2020).

A blockchain is a type of database used to register transactions through a distributed system. All participants such as individuals or companies using the shared database, are "nodes" connected to the blockchain, each keeping an identical copy of the ledger. Each entry into a blockchain is a transaction that represents a value change between participants. In practice, many varied types of blockchains are being developed and examined. Nevertheless, most of blockchains track this common frame and approach (CPA Canada, 2018).

Blockchain is a technology that effectively connects people or companies in a direct way or on a peer-to-peer basis. Blockchain is also known as distributed ledger technology (DLT), a digital system that records asset transactions and their details in multiple locations simultaneously. Blockchains are building blocks of interactions and transfers. These blocks can be assets of any digital kind, for example, money, securities, land titles, information on identity, health and other personal data (ACAA, 2021).

According to research findings by Abdennadher, et al (2022), blockchain impacts on the accounting profession in terms of recording of transactions, storing evidence and providing a secured environment for conducting business transactions. For the auditors, the results indicate that the blockchain changes their audit process and strategy. The blockchain has great potential to supplement traditional auditing by providing a low-cost and decentralized audit process and automated audit evidence.

The use of blockchain technology especially in accounting and auditing functions has come into prominence as a result of expansion of usage areas in financial markets and becoming an important technologic solution for many business functions (Özdoğan & Kargın, 2018). The blockchain is an advanced technology ready to convert invoicing, payment transactions, contracts and documentation with significant implications for accountants, finance specialists and regulators (Kokina, Mancha & Pachamanova, 2017). The most important innovation introduced by the blockchain technology to accounting applications, it is shown as conversion to the triple-entry bookkeeping system from the traditional double-entry bookkeeping system (Uçma & Kurt, 2018).

Advantages of digitalization in accounting

One of the most important and challenging task that professionals must contend with in the knowledge economy is to understand how new technological revolution is impacting on their professions and transforming societies as well. The term digitalisation refers to the innovation of

the business models and processes that exploit digital opportunities. This means that the user take benefit of the digitized products (Fledsberg, 2019). The digitalisation is the activation, the improvement and the transformation of the business operations or functions, models, processes or activities, using digital technologies and data, actionable towards a predetermined goal. The digitalisation in the accounting field is about incorporate disruptive technologies and transform the accounting processes to be much more agile, practical and assertive. All this effort is made to improve quality of the customer service an accountant can offer, and, of course, productivity and the efficiency of the accounting activity overall (Thomson Reuters). Digitalisation is the way to make the accounting an innovative science and a useful part of the business.

The impact of digital technologies on the accounting profession has been huge. The digitalisation made possible the transition from a traditional accounting, to an agile and digitized one. There are several advantages having a digitized accounting, these includes Reducing costs, elimination of errors. ICAEW (2019) report indicate the following benefits: more accurate and automated transaction processing, asset tracking which led to reduced downtime, improved information quality and lower audit costs: automated stock checking, asset location, improved assets analysis, improved assets utilisation through developed process and asset sharing, cost optimisation through analysis and preventative maintenance, improved pricing through better cost data generated and analysed, quantified employees through improving health and safety, forecasting and budgeting improvements.

Empowering Accountants into the Future

It is clear that it is necessary to have knowledgeable and sufficient human resources in order to achieve success in this process where digital transformation is rapidly occurring. As technology continues to advance into the future, accounting and finance professionals will have to adapt with it. This adaptation is in terms of roles and skills. In terms of roles, this means pivoting into more advisory roles, taking clients through their finances, and offering predictions and recommendations (Hamilton, 2021). In terms of skills, while the core objectives of accounting remain the same, other service are now being offered by accountants. This is in addition to new channels of delivering services mostly through leveraging digital technologies. This expansion in service and new channels of service delivery calls for expanded skills in both accounting and technology. Thus, accountants must not only develop new accounting skills, but new technological skills relevant to their profession, in order to attract huge customer patronage (Mfon & Uford 2022).

Technology has the potential to boost the productivity and efficiency of accountants, which, in turn, can bring improved results for employers and clients. As a result, there is set to be growing demand for accounting professionals who possess a combination of educational qualifications, professional credentials and skill-sets that include data analysis and business intelligence. If the role of technology in the accounting profession is growing, what specific skills are employers likely to seek in candidates? This includes

Advanced Excel skills: Excel "power users" can leverage their skills to solve complex problems, analyze costs and convey information to stakeholders.
Knowledge of business intelligence software: Software such as Cagnos, Birst and ProfitBase can help increase transparency and cut costs for better forecasting.
Data analytics expertise: Advanced modeling techniques can add value by allowing for the handling of large amounts of data for competitive insights.
Understanding of enterprise resource planning systems: Companies can lower operating costs, reduce cycle times and gain a competitive edge with ERP expertise.
Experience with computing: Transitioning businesses to cloud computing can increase flexibility and efficiency.

Future skill sets now

For both aspects of the profession, this will place greater value on professionals with hybrid skillsets. This means being digitally and technologically savvy, which can extend as far as being able to read and write code, but also simply understanding a software or app's organisational and commercial purpose and being able to work with it. Thomas, Ukpong and Usoro (2022) noted that it means being able to see the broader organisational picture and how financial information fits within it and can add value to it, and then being able to effectively communicate your insights to key stakeholders.

The future will require professionals with a strong technical accounting and finance knowledge base, coupled with curious minds and professional scepticism; they are not just project consultants, but project managers happy working digitally with deeper and richer data sets; they are analytical, critical; and they have strong commercial and business acumen, as well as amazing soft skills (e.g. interpersonal, emotional intelligence, negotiation, presenting etc).It is professionals such as these that will be better able to help their firms, clients, employers and organisations through the current crisis and to flourish beyond. Accountants will need to be trusted advisers to customers and trusted business partners to stakeholders, managers and colleagues (ACCA, 2020b).

Policy implications of the impact of technology on the accounting profession

Review current workstreams. Start by reviewing the firm's internal processes to identify areas for improvement. Look at past year's performance, where the firm encountered issues and where they need to make changes Umoren, & Ukpong, 2023).
Create a digital transformation strategy. Before investing in accounting technology, it is important to establish expectations and objectives. A digital transformation strategy will help a firm set the roadmap and stay ahead of the competition. Upskill existing team members. Embracing innovative technology requires the team to have the right skills to take full advantage of these new opportunities.

Theoretical Framework

The technology acceptance model is adopted for this study

Technology Acceptance Model (TAM) by Davis Jnr.(1986)

The Technology Acceptance Model (Davis, 1989), or TAM, posits that there are two factors that determine whether a new technology system will be accepted by its potential users: (1) perceived usefulness, and (2) perceived ease of use. The key feature of this model is its emphasis on the perceptions of the potential user. That is, while the creator of a given technology product may believe the product is useful and user-friendly, it will not be accepted by its potential users unless the users share those beliefs. Technology Acceptance Model developed by Davis(1986) is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. TAM has been widely studied and verified by different studies that examine the individual technology acceptance behaviour in different information systems constructs. Davis (1986) developed the TAM, which is based on the Theory of Reasoned Action (TRA), to understand the causal relationships among users' internal beliefs, attitudes, and intentions as well as to predict and explain acceptance of computer technology. This model posits that the user's actual usage behaviour (actual use or AU) is directly affected by behavioral intention (intention to use or IU). In turn, behavioural intention is determined by both the user's attitude and its perception of usefulness. The user's attitude is considered to be significantly influenced by two key beliefs, perceived usefulness (PU) and perceived ease of use (PEOU) and that these beliefs act as mediators between external variables (e.g. design features, prior usage and experience, computer self-efficacy and confidence in technology) and intention to use.

The goal of Davis' (1989) TAM is to explain the general determinants of computer acceptance that lead to explaining users' behaviour across a broad range of end-user computing technologies and user populations. The basic TAM model included and tested two specific beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Perceived Usefulness is defined as the potential user's subjective likelihood that the use of a certain system (e.g: single platform E-payment System) will improve his/her action and Perceived Ease of Use refers to the degree to which the potential user expects the target system to be effortless (Davis, 1989).

These two factors are influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crisis. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. Behavioral intention is the measure of the likelihood of a person employing the application.

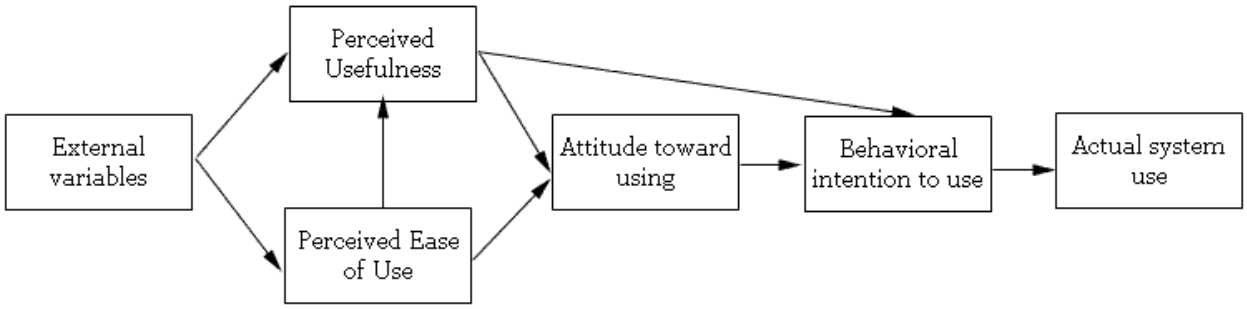


Fig 2: Technology acceptance Model (TAM) Davis(1989)

Perceived Usefulness (PU) - PU is defined as "the extent to which a person believes that using a particular system will enhance his or her job performance" (Davis, 1989). Consequently, it is related to the belief that a technology enhances an individual's performance (Davis, 1989). The TAM and its extended models from other researchers uncovers that PU enhances a person's objective in mandatory and voluntary situations (Davis, 1989).

Perceived Ease of Use (PEU)- PEU is "the extent to which a person believes that using a particular system will be free of effort" (Sun et al., 2009, p.52). Studies validated that when individuals think employing a certain technology is easy to use, they will be inclined to work with it (Davis, 1986; Liu et al., 2010). 13 Connecting this fact to social media, it is assumed that if social media are easy to handle, managers will make use of it. As in the case of PU, PEU has an influence on a person's attitude towards using their technology system (Davis, 1989).

Relationship with the Present Study

The application of TAM is diverse: from wireless Internet and multimedia-on-demand to collaborative technologies (Cheung & Vogel, 2013). Large volumes of these studies modified Davis' TAM (1986) to improve its (predictive) validity and applicability to various technologies. TAM's four major variables are: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Behavioural Intention (BI), and Behaviour (B). PU is used as both a dependent and independent variable since it is predicted by PEOU, and predicts BI and B at the same time. Behaviour was usually measured using frequency of use, amount of time using, actual number of usages, and diversity of usage. However, for this study Perceived Ease of Use (PEOU) measured by the changes in the accounting profession is the dependent variable. This will help in establishing Perceived Usefulness (PU), Behavioural Intention (BI), and Behaviour (B).

Related Empirical Studies

Several studies conducted by some researchers on the contributions to accounting profession and accounting education of digital technologies are summarized below:

Suleimen (2021) aimed at identifying the impact of big data analysis on the accounting Profession in Jordanian business environment. To achieve the study objectives researcher distributed a questionnaire to (147) out of certified public accounts, financial analysis and experts in big data analysis in the kingdom of Jordan. (108) questionnaires were returned. The response rate was (51.7%) of the population. In addition, the study sought to verify the hypothesis of the study. In order to analysis the data, the researcher used means, standard deviation and T-test. The result of the study revealed that the big data analysis have a significant role on the accounting roles and improve the quality of accounting characteristics in Jordan with an overall means (4.52). Based on the results of hypotheses, rejected the null basic hypothesis of the study, and the two null sub-hypotheses were rejected.

Karmańska (2021) identified the benefits and challenges of the Internet of Things (IoT) application in the accounting field of organisations. The study adopts a questionnaire and an interview technique in a company from the road transport sector. The questionnaire research sample includes 151 accounting practitioners and students. Data are collected through the use of an online survey. A principal axis factor analysis with the Promax rotation is conducted to assess the underlying structure for the items of the questionnaire. The research outcomes indicate that, in the opinion of accountants and students, the IoT adoption enables the organisation to perform enhanced reporting analysis based on a large amount of data gained through sensors (mean = 3.98), access to data through cloud computing (3.97), and accounting process automation (3.95). From the point of view of managers, the most important benefit is the increase in employee productivity and asset management. The respondents indicate the following aspects as challenges: the creation of infrastructure for the adoption of new technology, which accounted for 40.22% of the variance, and cyber security, loss of privacy (7.23% of the explained variance). The findings reveal benefits and challenges for IoT adoption and could support managers in deploying new technology in their organisations.

In the study conducted by Pan and Seow (2016), it was emphasized that the widespread use of information technologies in enterprises in digital age changed the nature of accounting activities and this situation spread use of information technologies among accounting professionals. In the research, it aims to review selected articles published between 2004 and 2014 based on selected search phrases. The findings of the review may serve as an important input for current and future accounting curriculum revisions.

Vendruscolo and Behar (2015) tried to determine what competencies are required for accounting teaching in the digital age by a survey study applied to the lecturers who give accounting courses in Brazilian universities. According to the results of the study, accounting instructors emphasized the need for continuing education in order to adapt to the ever-developing digital technology. Gulin, Hladika and Valenta (2019) analyzed and systematized the key challenges that digitalization brings for the accounting profession. Research is based on the review of relevant and available

professional and academic literature. The results are showing that accounting profession is faced with numerous challenges in the era of digitalization. Key challenges could be systematized in following: the use of big data in accounting and reporting, cloud computing and continuous accounting, artificial intelligence and blockchain technology. The conclusion of this research is that changes in technology and digitalization will have a significant impact on the accounting profession in the coming period. Changes are moving toward reporting on a daily basis, difference on the way of preparing business and strategic plans, implementation of digital wallet and on-line accounting as well as outsourcing of accounting in distant countries.

Research Gap

Digitalization will affect the development of accounting profession, from skills, to tasks and roles up to nature of work and work environments. The potential impact of digital technologies is huge and it is predicted that the world is at its early stages of the disruptive impact of digital technologies on occupations. The gap of this study, thus, is to seek to scholarly analyse the potential impacts of digital technologies on the accounting profession, by analyzing the technologies that will most likely be adopted by accountants, the impacts, benefits, challenges as well as exploring the policy directions for companies, accountants and for the accounting profession as a whole.

METHODS

Research design and population of the study

The study employed the descriptive survey research. This allowed the researcher to study the phenomenon by sampling a representative portion of the population. The population for this study were all certified accountants in Akwa Ibom State. The records of the certified accountants came from ANAN and ICAN members register.

Sampling and Sampling Technique

Sampling technique refers to the means through which elements of the population are drawn to represent the entire population (Uford and Duh, 2021). The sample size of the study was 165 respondents drawn from the certified accountants in Akwa Ibom State. Purposive sampling technique was used to sample accounting professionals with knowledge and application of digital technologies in accounting. This allowed the researcher to work with people with experience on accounting and digital technologies.

Sources of data collection

Both the dependent and the independent variables were collected through primary data. The researcher developed instrument titled "Digital technologies and Accounting professionals Questionnaire" was used for data collection. The study made use of primary data. Accounting experts were interviewed and questionnaire administered to ascertain their opinion on the penetration, impacts and potential effects of digital technologies on the accounting profession. The instrument was validated by three experts in the Department of accounting, Akwa Ibom State University. Thereafter, the instrument was trial tested for reliability using the test retest method on 20 respondents. The data collated was tested through Pearson product moment correlation, which gave a value of .88. This was deemed good enough and the instrument was then deemed fit for the study.

Method of Data Collection

The instrument was administered to the respondents in the study area by the researcher and briefed research assistants who helped the researcher to cover the study area and reach out to the sampled population on time. The certified accountants responded to the items on the questionnaire. This took a period of six weeks. 127 copies were fit for analysis, this represented 77% return rate. Their responses were then collated and coded for data analysis.

Method of Data Analysis

Frequencies and descriptive statistics were used for answering the research questions while simple linear regression was used to test the hypothesis at .05 level of significance, as recommended by (Uford, 2017)..

Model specification

For simple linear regression the simple model is

$Y = a + \beta x + \varepsilon$

Where

Y= the independent variable

a=constant

β= coefficient

ε= error term

ANALYSIS AND RESULTS

Table 1: Summary of characteristics of respondents

		N	%
Gender	Male	73	57.48%
	Female	54	42.52%
Age	30-35	23	18.11%
	36-40	26	20.47%
	41-45	36	28.35%
	46-50	30	23.62%
	>50	12	9.45%
Marital Status	Married	68	53.54%
	Single	37	29.13%
	Separated	5	3.94%
	Widowed	17	13.39%
Occupation	Lecturing	15	11.81%
	Banker	40	31.50%
	Public servant	23	18.11%
	Private sector	39	30.71%
	Entrepreneur	10	7.87%
Years of Experience	1-5yrs	20	15.75%
	6-10yrs	47	37.01%
	11-15yrs	33	25.98%
	16yrs and above	27	21.26%

The total respondents for the study were 127. This was made up of Lecturers 15 lecturers, representing 11.81%, 31.5% of the respondents were bankers while 18% were public accountants. 30.7% were private sector accountants while 7.8% were heads of accounting firms. 57% of respondents were males while 43& were females. The years of experience were spread between 1-5yrs (16%), 6-10yrs(37%), 11-15yrs(26%) and 16 and above was 21%.

Research question1: What are the digital technology trends that will impact the accountancy profession?

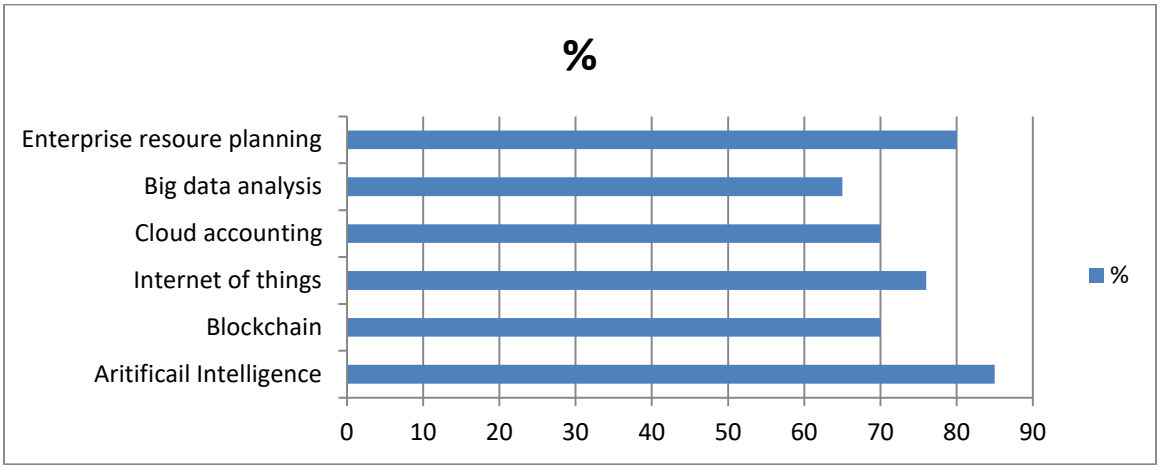
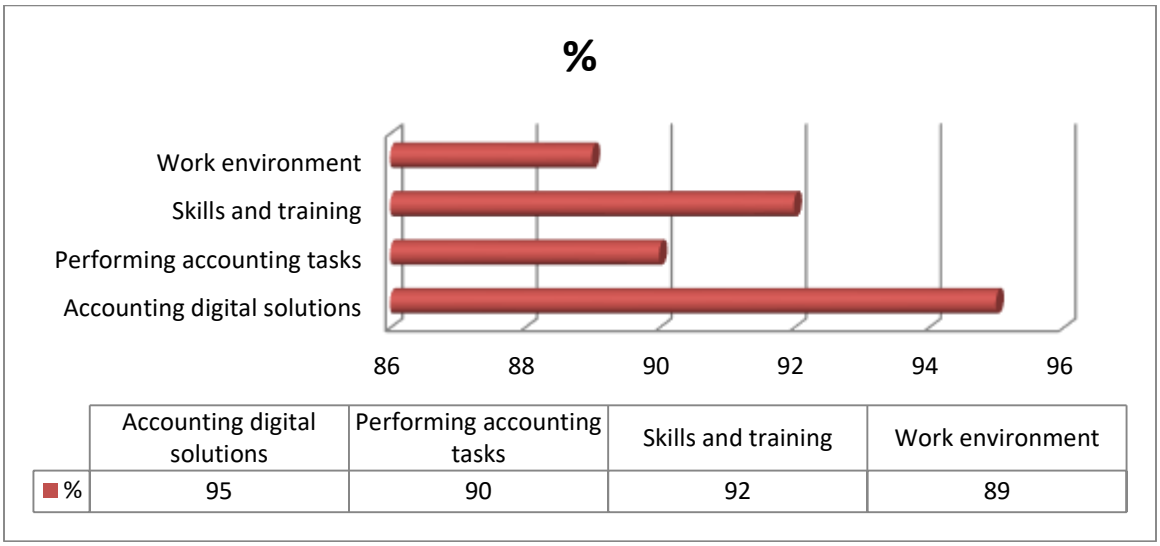


Figure 3: Digital technologies impacting on the accounting profession

Figure presents the chart for responses of experts on the digital technologies impacting on the accounting profession. The result shows that the identified digital technologies are artificial intelligence, enterprise resource planning, internet of things (IoT), blockchain technology, cloud accounting technology and big data analysis.

Research question 2: What are the anticipated impacts of emerging technological advancements on the accounting profession?



	Accounting digital solutions	Performing accounting tasks	Skills and training	Work environment
%	95	90	92	89

Figure 4 summarizes the respondents views on the impact of digital technologies on the accounting profession. The major impacts as identified by the respondents are accounting digital solutions. That is, new digital accounting products and services are being introduced into the profession. This

in effect leads to new roles and tasks for accountants. Consequently, the need for new skills and retraining of staff and accounting students in new technology applications in accounting is identified as an impact of digital technologies. The work environment is most likely to be impacted as new solutions will require new tools, work stations and new methods of collaboration. The identified benefits of digital technological advancements on the accounting profession are better decision making, cost and time optimization, better risk management, automation of tasks, service expansion among others.

Research question 3: What are the benefits of emerging digital technological advancements on the accounting profession?

Table 2: Summary of descriptive analysis of respondents on the benefits of emerging technological advancements on the accounting profession

S/N	Benefits of digital technological advancements on the accounting profession	Mean	Std. Dev	Remarks
1	Better decision making	3.85	0.78	*SA
2	Cost and Time Optimization	3.89	0.87	SA
3	Streamlined Accounting Processes	3.89	0.93	SA
4	Better Risk Management	3.86	1.05	SA
5	Automating tedious tasks	3.89	0.71	SA
6	minimizing cost	3.52	0.77	SA
7	Expand the range of services offered	3.89	0.53	SA
8	accountants can now focus on financial analysis	3.77	0.49	SA
9	support remote work	3.80	1.04	SA
10	perform accounting functions	3.78	1.15	SA

*SA- Strongly Agree

The respondents views on the benefits of digital technological advancements on the accounting profession is summarized in Table 2. The result shows that the respondents have mean values above 3.0 the cut off mean and also the values are higher than 3.50, indicating that they all strongly agreed that all the items are the benefits of digital technological advancements on the accounting profession. The identified benefits of digital technological advancements on the accounting profession are better decision making, cost and time optimization, better risk management, automation of tasks, service expansion among others.

Research question 4: What are the challenges of adoption of digital technological advancements on the accounting profession?

Table 3: Challenges of adoption of digital technological advancements on the accounting profession

S/N	challenges adoption of digital technological advancements in the accounting profession	Mean	Std. Dev	Remarks
1	Cost of digital automation	3.24	1.11	*Agreed
2	Shortage of specific skills (e.g. ICT/ digital)	3.07	1.20	Agreed
3	Cumbersome public administration procedures	3.36	1.07	Agreed
4	Specific features of the service that do not allow for digitalization	3.32	1.08	Agreed
5	Regulatory constraints (e.g. Data protection, etc.)	3.20	1.09	Agreed
6	Limits of the technological infrastructure	3.17	1.12	Agreed
7	Reliability of new technologies (e.g. bias in algorithms, etc.)	3.07	1.21	Agreed
8	Lack of commitment from personnel/ top management	3.00	1.21	Agreed
9	tech-phobia clients	3.20	1.09	Agreed
10	Cyber security	3.32	1.08	Agreed

Table 3 summarizes the responses of experts in the challenges of adopting digital technological advancements in the accounting profession. The identified challenges are cost of digital automation, skills shortages, weak regulatory framework, some jobs do not require digitalization, reliability of new technologies as well as lack of commitment from personnel.

Research question 5: What are the policy implications for integrating emerging technological advancements on the accounting profession?

Electronic finance has diversified in recent years, and Internet use involves many commercial operations, which have led to the development of this sector. As electronic payment methods have evolved, all financial institutions have begun to compete to provide the best service in the market. Overall, the development of the digital technologies has a major impact on the financial and accounting operations of companies. However, every sector must be guided by regulatory and policy frameworks that not only provides the context for operations, but safeguards both clients and operators as well. The policy implications based on research findings are discussed below

1. Fintech-specific regulation: changes in the existing regulatory framework to include fintech activities. This category includes cases where regulatory instruments such as laws, regulations or guidelines are issued or amended to regulate fintech activities or otherwise include fintech specific elements in financial accounting.

2. With national policies now in place that stimulate diversity in communicating information, the basic policy concern is shifting toward issues regarding the generation, use, and rights associated with information.
3. Digital technologies are expanding the skills set required by accountants to perform their tasks, as such, accounting curriculum should be reviewed to imbibe more technology applications in its content.
4. Review current workstreams. Start by reviewing the firm's internal processes to identify areas for improvement with respect to the implementation of digital technologies
5. Companies should focus on creating a digital transformation strategy. Before investing in accounting technology, it is important to establish expectations and objectives.
6. Upskill existing team members. Embracing innovative technology requires the team to have the right skills to take full advantage of these new opportunities.

The implication of this impact is that accountants must brace up to the new challenges information technology is imposing on the accounting profession. The professional accountant must keep pace with these changes and provide accurate and timely financial information that can be accessed and analyzed quickly and easily. While digital technology may make it easier to collect information and move it from one place to another, it also has led to an incredible proliferation of data. Filtering, sorting, compiling, analyzing and disseminating financial data in ways that add real value to a corporation have become daunting tasks.

Research Hypotheses

Ho_1: Digital technology adoption has a significant positive effect on the changes in the accountancy profession in Nigeria.

Table 4: Summary of Simple Linear regression test for significant effect of digital technology adoption on the accountancy profession in Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.755	.205		13.433	.000
Changes in accountancy profession	.149	.075	.458	1.983	.050

r=458, R^2=.342, Adjusted R^2=.116

Table 4 gives the summary of the linear regression test for influence of digital technologies on the changes in the accounting profession. The result shows that as digital technology adoption increases by a unit, changes in accounting profession also rises by .149. This shows that digital technologies have positive effects on the changes in the accounting profession. The result also shows that the R^2 value is .342, indicating that 34.2% changes in accounting is as a result of digital technologies. This result is significant at .05. Thus, digital technology adoption has a significant positive effect on the changes in the accountancy profession in Nigeria.

Ho_2: Emerging digital technologies adoption will significantly predict the nature of skills in the accountancy profession in Nigeria.

Table 5: Summary of Simple Linear regression test for significant effect of digital technology adoption on the nature of skills in the accountancy profession

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.036	.314		6.483	.000
nature of skills in the accountancy profession	.331	.092	.306	3.594	.000

r=306, R^2=.654, Adjusted R^2=.427

Table 5 gives the summary of the linear regression test for influence of digital technologies on skills in the accounting profession. The result shows that as digital technology adoption increases by a unit, changes in skills in the accounting profession also rises by .331. This shows that digital technologies have a positive effect on skills changes in the accounting profession. The result also shows that the R^2 value is .654, indicating that 65.4% changes in accounting skills is as a result of digital technologies. This result is significant at .00. Thus, emerging digital technologies adoption will significantly predict the nature of skills in the accountancy profession in Nigeria.

DISCUSSION OF FINDINGS

The findings of the study are hereby discussed:

Digital technology trends and its impact the accountancy profession

Findings of the study reveals that that the identified digital technologies are artificial intelligence, enterprise resource planning, internet of things (IoT), blockchain technology, cloud accounting technology and big data analysis. The result also shows that artificial intelligence will have the

greatest impact on accounting. This is followed by enterprise resource planning. This findings is in agreement with Pan and Seow (2016) and Suleiman(2021) who both identified digital technologies as increasingly being used in accounting with the potential of transforming the accounting profession.

Digital technologies impacts and benefits to the accounting profession

Result of analysis shows that the major impacts as identified by the respondents are accounting digital solutions. That is, new digital accounting products and services are being introduced into the profession. This in effect leads to new roles and tasks for accountants. Consequently, the need for new skills and retraining of staff and accounting students in new technology applications in accounting is identified as an impact of digital technologies. The work environment is most likely to be impacted as new solutions will require new tools, work stations and new methods of collaboration. The benefits of digital technologies as identified by the study are better decision making, cost and time optimization, better risk management, automation of tasks, service expansion among others. This finding is supported by ICAEW (2019) report who indicated the following benefits: • more accurate and automated transaction processing, asset tracking which led to reduced downtime, improved information quality and lower audit costs: automated stock checking, asset location, improved assets analysis and improved assets utilization through developed process and asset sharing. The corresponding hypothesis test shows that digital technology adoption has a significant positive effect on the changes in the accountancy profession in Nigeria. This finding is in line with Pan and Seow (2016) who found that the widespread use of information technologies in enterprises in digital age changed the nature of accounting activities and this situation spread use of information technologies among accounting professionals.

Challenges of Adoption of Digital Technological Advancements in the Accounting Profession

Findings of the study shows that the identified challenges are cost of digital automation, skills shortages, weak regulatory framework, some jobs do not require digitalization, reliability of new technologies as well as lack of commitment from personnel. The hypothesis test shows that emerging digital technologies adoption will significantly predict the nature of skills in the accountancy profession in Nigeria. This finding is corroborated by Gulin, et al (2019) who analyzed key challenges that digitalization brings for the accounting profession. The results shows that accounting profession is faced with numerous challenges in the era of digitalization. Key challenges are the use of big data in accounting and reporting, cloud computing and continuous accounting, artificial intelligence and blockchain technology. The conclusion of this research is that changes in technology and digitalization will have a significant impact on the accounting profession including skills in the coming period.

CONCLUSION

Digitalization and the development of information technologies represent a great opportunity for accountants. Furthermore, digitalization brings a lot of changes for accounting profession. It will change the way accountants work and think. Despite many of accountants think that digitalization will take their jobs, and that robots will replace humans, results show that accountants will use digital solutions and automation for routine tasks rather than replace accountants. The outcome of this study shows that artificial intelligence, big data, blockchain, cloud accounting technology as well as internet of things (IoT) have a significant effect on the accounting profession. The result concludes that digital technologies will greatly predict the nature of accounting skills going forward. Digital technologies will alter the tasks of accountants as well as the work environment. Digital technologies have a positive effect on the accounting profession.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Accountants should embrace information technology courses vigorously to align them with the new technologies so that they can flow along with the changes and able to cope with the challenges is imposing on the profession.
2. In order to keep adding value for the company, accountants need to developed new skills and acquire new knowledge regarding the use of artificial intelligence and other digital solutions in modern business environment.
3. There is highlighted the need of all employees (including accountants) for development of critical thinking and problem solving, high level of adaptability, flexibility and interpersonal interaction; it is required to learn continuously.
4. For successful career of future accountants are important many skills and those are motivation, good written and oral communication, capability of decision making, financial analysing and professional judgement.
5. Finally, accountants will have a significant proactive role in conducting and performing company's business, so it is required that they will collaborate with employees in other functions, especially with IT experts.

REFERENCES

Abdennadher, S., Grassa, R., Abdulla, H. & Alfalasi, A. (2022).The effects of blockchain technology on the accounting and assurance profession in the UAE: an exploratory study. *Journal of Financial Reporting and Accounting*, 20(1),53-71. https://doi.org/10.1108/JFRA-05-2020-0151.

ACCA (2020a). The big data effect. https://www.accaglobal.com/an/en/student/sa/features/big-data.html

ACCA (2020b). Digital skills have become even more important for accountants. https://jobs.accaglobal.com/article/digital-skills-have-become-even-more-important-for-accountants-ug/

ACCA (2021).Blockchain: is it still the great accountancy disruptor? https://www.accaglobal.com/africa/en/student/sa/features/blockchain.html

Accounting Web (2016). IoT & its Impact on Accounting Practices. https://www.accountingweb.com/community/blogs/akash-deb/iot-its-impact-on-accounting-practices

Bernard, M.(2020). Artificial Intelligence In Accounting And Finance. https://bernardmarr.com/artificial-intelligence-in-accounting-and-finance/

CPA Canada (2018), Blockchain Technology and Its Potential Impact on the Audit and Assurance Profession, https://www.cpacanada.ca/en/business-and-accounting-resources/audit-and-assurance/canadian-auditing-standards-cas/publications/ impact-of-blockchain-on-audit.

Davis, F.D.(1986). A technology acceptance model for empirically testing new end-user information systems: theory and results. Doctoral dissertation. Massachusetts Institute of Technology.

Frey, C. B., Osborne, M. A. (2017).The future of employment: How susceptible are jobs to computerisation?", Technological Forecasting and Social Change, 114, 254-280.

Gartner Inc. (2018). Big Data. https://www.gartner.com/glossary/big-data

Giuseppe, B. & Taylor, F.(2019). *IMA Releases New Report on the Impact of Big Data on Finance*. Institute of Management Accountants, IMA. Montvale, N.J.

Gulin, D., Hladika, M. & Valenta, I. (2019) .Digitalization and the Challenges for the Accounting Profession, In: Proceedings of the ENTRENOVA - ENTerprise REsearch InNOVAtion Conference, Rovinj, Croatia, 12-14 September 2019, IRENET - Society for Advancing Innovation and Research in Economy, Zagreb, 5, 502-511.

Hamilton, J.(2021). How Does the IoT Affect the Future of Accounting? https://www.globalsign.com/en/blog/how-does-iot-affect-future-accounting

Ian, M.(2021).Cloud Accounting Basics: What It Is & Reasons to Use. https://www.netsuite.com/portal/resource/articles/accounting/cloud-accounting.shtml

Kaplan, B. F. (2018). Controllership and the workforce of the future: Understanding the impact of technology on accounting talent. *Deloitte Perspectives*. Retrived from https://www2.deloitte.com/us/en/pages/risk/articles/impact-of-technology-on-accounting-profession-center-for-controllership-blog.html

Karmańska, A.(2021).Internet of things in the accounting field. Benefits and challenges. *Operations research and decision*, 3, 23-38. https:// 10.37190/ord210302

Kennan, F.(2020). Why data analytics matters to accountants. https://www.kenan-flagler.unc.edu/perspectives/why-data-analytics-matter-to-accountants/

Kokina, J.; Mancha, R. & Pachamanova, D. (2017). Blockchain: Emergent Industry Adoption and Implications for Accounting. Journal Of Emerging Technologies In Accounting, 14 (2), 91-100. DOI: 10.2308/ jeta-51911.

Kroon, N., Alves, M.d.C. & Martins, I. (2021). The Impacts of Emerging Technologies on Accountants' Role and Skills: Connecting to Open Innovation—A Systematic Literature Review. *Journal of Open Innovation Technology*, 7, 163. https://doi.org/10.3390/joitmc7030163

Mac. (2019).Artificial Intelligence in Accounting. https://onlinedegrees.und.edu/blog/artificial-intelligence-in-accounting/

Mancini, D., Lamboglia, R., Castellano, N. G.& Corsi, K. (2017). Trends of Digital Innovation Applied to Accounting Information and Management Control Systems", In K. Corsi, N.G. Castellano, R. Lamboglia, & D. Mancini. (Eds.), Reshaping Accounting and Management Control Systems – New Opportunities from Business Information Systems, Springer, Cham, Switzerland, pp. 1-19.

Maryville University blog (2021).Uses of Data Analytics in Accounting and Finance. https://online.maryville.edu/blog/data-analytics-in-accounting/

Mfon, A. & Uford, I. C. (2022). Consumer Preference Survey of De Choice Fast Food in Uyo Metropolis, Akwa Ibom State, Nigeria. *British Journal of Marketing Studies*, 10 (2). pp. 13-34.

Özdoğan, B. & Kargın, S. (2018), Blok Zinciri Teknolojisinin Muhasebe Ve Finans Alanlarına Yönelik Yansımaları Ve Beklentiler, *Muhasebe ve Finansman Dergisi, Ekim* (80), 161-175.

Pan G, & Seow P (2016) Preparing accounting graduates for digital revolution: a critical review of information technology competencies and skills development. *Journal of Education and Business* 91(3),166–175. https:// doi.org/10.1080/08832323.2016.1145622.

Pepe, A. A. (2011). *The evolution of Technology for the Accounting Profession.* CPA practice advisor.

Singer, M. & Kusz, G.(2021). Blockchain Technology: Shaping the Future of the Accountancy Profession. International federation of accountants, IFAC. https://www.ifac.org/knowledge-gateway/preparing-future-ready-professionals/discussion/blockchain-technology-shaping-future-accountancy-profession

Suleiman, M. (2021). Impact of Big Data Analysis on Accounting Profession Field: A Study in Jordanian Business Environment. *International Journal of Accounting and Financial Reporting*, 11(1), 1-23.

Tekbas, I. (2018).The Profession of the digital age: Accounting Engineering, available at: https://www.ifac.org/global-knowledgegateway/technology/discussion/profession-digital-age-accounting-engineering (19 April 2019).

The Institute of Chartered Accountants in England and Wales, ICAEW.(2019).The internet of things and accounting: lessons from China. https://www.icaew.com/-/media/corporate/files/technical/business-and-financial-management/information-and-knowledge-management/internet-of-things-and-accounting.ashx

Thomas, C. D., Ukpong, E. G. & Usoro, M. U. (2022). Ergonomics and Organizational Sustainability: A Study of Peacock Paint Limited, Ikot Ekan, Etinan L.G.A Akwa Ibom State. *International Journal of Business and Management Review*, 10 (4). pp. 75-94.

Uçma, T. & Kurt, G. (2018). Muhasebede Ve Denetimde Blok Zinciri Teknolojisi. Süleyman Demirel Üniversitesi İİBF Dergisi, 23 (2), 467-481.

Uford, I. C. (2017). *Customer and Employee-based Brand Equity Driving United Bank for Africa's Market Performance* (Doctoral dissertation, University of the Witwatersrand, Faculty of Commerce, Law and Management, School of Economic & Business Sciences).

Uford, I., & Duh, H. I. (2021). Measuring the Sources and Outcomes of Customer Based Brand Equity in a Service Industry. *African Journal of Business & Economic Research*, *16*(2).

Ukpong, E. G. (2012). Cognitive apprenticeship instructional models and students' performance in Financial Accounting in Akwa Ibom State. *Unpublished Ph. D. Thesis University of Uyo, Uyo*.

Ukpong, E. G., Udoh, I. I. & Essien, I. T. (2019). Artificial Intelligence: Opportunities, Issues and Applications in Banking, Accounting, and Auditing in Nigeria. *Asian Journal of Economics, Business and Accounting*, 10 (1). pp. 1-6.

Umoren, A. O., & Ukpong, E. G. (2023). Company Characteristics and Earnings Quality of Listed Non-Financial Companies in Nigeria. *AKSU Journal of Administration and Corporate Governance.* https://aksujacog.org.ng/articles/23/04/company-characteristics-and-earnings-quality-of-listed-non-financial-companies-in-nigeria/

Vendruscolo M. I. & Behar, P.A. (2015). Accounting professor qualification in digital age: a perception study on brazilian professors, 12th international conference on cognition and exploratory learning in digital age (CELDA 2015) Maynooth, Greater Dublin, Ireland 24–26 Oct 2015, https://files.eric.ed.gov/fulltext/ED562143.pdf

Watson, J. (2020). How Will the Internet of Things (IoT) Affect the Accounting Profession? https://www.acecloudhosting.com/blog/internet-of-things-impacts-accounting/

Watson, J. (2022). How Big Data Is Impacting Accounting Firms in 2022. https://www.acecloudhosting.com/blog/how-big-data-impacting-accounting-firms/

QUESTIONNAIRE

Instruction: Kindly tick [√] or fill in the correct answer to the following questions.

Section A

Socio-demographic Characteristics

1. Indicate your sex
a. Male ☐
b. Female ☐
2. To which of the following age brackets do you belong? (at last birthday)
a. 30-35 ☐

b. 36-40 ☐
c. 41-45 ☐
d. 46-50 ☐
e. 50 and above ☐

3. What is your marital Status?
a. Married ☐
b. Single ☐
c. Separated ☐
d. Widowed ☐

4. Occupation
a. Lecturing ☐
b. Public accountant ☐
c. Banker
d. Private sector ☐
e. Entrepreneur ☐

5. Years of experience as an accountant
a. 1-5yrs ☐
b. 6-10yrs ☐
c. 11-15yrs ☐
d. 16yrs and above ☐

1. Which of the following technologies do you think is fast impacting on the accounting profession?

S/N	Emerging Technologies	Agreed	Disagreed
a	Artificial intelligence		
b	Blockchain		
c	Internet of things		
d	Cloud accounting technology		
e	Big data analysis		
f	Enterprise resource planning		
g	SAGE		

2. How do you think these technologies will impact on the accounting profession?

Introduction of new service channels/products Great extent ☐ Less extent ☐
Work environments will change Great extent ☐ Less extent ☐
Accountants' roles will change Great extent ☐ Less extent ☐
Accountants will be asked to do more jobs Great extent ☐ Less extent ☐
New skills will be required to do new and old jobs Great extent ☐ Less extent ☐

Accountants will require training on digital technologies Great extent Les xtent

3. Use the following key to respond to the items below to respond to the benefits of digital technologies in the accounting profession

Strongly Agree (SA) Agree (A), Disagree (D) Strongly Disagree (SD)

S/N	**Benefits of digital technological advancements on the accounting profession**	**SA**	**A**	**D**	**SD**
1	Better decision making				
2	Cost and Time Optimization				
3	Streamlined Accounting Processes				
4	Better Risk Management				
5	Automating tedious tasks				
6	minimizing cost				
7	Expand the range of services offered				
8	accountants can now focus on financial analysis				
9	support remote work				
10	perform accounting functions				

4. What are the challenges of adoption of digital technological advancements on the accounting profession?

S/N	**challenges adoption of digital technological advancements in the accounting profession**	**SA**	**A**	**D**	**SD**
1	Cost of digital automation				
2	Shortage of specific skills (e.g. ICT/ digital)				
3	Cumbersome public administration procedures				
4	Specific features of the service that do not allow for digitalization				
5	Regulatory constraints (e.g. Data protection, etc.)				
6	Limits of the technological infrastructure				
7	Reliability of new technologies (e.g. bias in algorithms, etc.)				
8	Lack of commitment from personnel/ top management				
9	tech-phobia clients				
10	Cyber security				

5. Impact of digital technologies on accountants and accountancy profession

S/N	Impact of digital technologies on accountants and accountancy profession	SA	A	D	SD
1	digital technologies leads to a change in the role of the accountant in the future				
2	Accountants must develop their skills and knowledge related to creating data, managing, modifying, storing and analyzing data and preparing reports on it and its security				
3	In addition to the traditional role of the accountant, an accountant should be an effective supervisor of the privacy and ethical use of big data by having the skills of managing and analyzing data.				
4	Accountants who have technical and statistical skills to manage and analyze big data will highly valued				
5	digital technologies will increase the importance of the accountant's strategic role in the future by participating in making strategic decisions in economic facilities.				
6	The accountant must be sufficiently aware of the changes imposed by big data such as social media, internet crime, digital services, blurry computing, artificial intelligence and cloud computing				
7	Big data, represented in photos and videos, affects the traditional accounting records and provides additional evidence to support those records				
8	routine tasks can now be performed by artificial intelligence, hence, freeing up valuable time for accountants				
9	Digital technologies will affect how accounting by how we collect and record data, manage data, and prepare and review financial statements.				
10	Modern technologies are used to collect, record, analyze and display information in a way that benefits the largest number of users of information according to their different goals				
11	digital technologies will affect the way of disclosing accounting information and moving from the traditional role of disclosure in the financial statements to other disclosure channels such as websites and social media.				