TECHNOLOGICAL CHALLENGES OF ACCOUNTING AS A TOOL FOR SOCIO-ECONOMIC DEVELOPMENT IN NIGERIA AND THE WAY OUT

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ABSTRACT

Accounting is crucial to socioeconomic development of every nation due to the variety of economic information it provides. The efficient use and management of resources influences economic growth and prosperity. Lack of thoroughly thought-out accounting methods lead to inefficient resource allocation and underutilization. In light of this, this paper explored accounting's technological challenges, as well as the role of accounting to socioeconomic development in Nigeria. The extensive literature review conducted showed that if accounting is to remain relevant in the quickly changing corporate environment, technological challenges brought on by artificial intelligence, cyber security, and remote work must be overcome. Further, the paper identified significant accounting-related problems brought on by technological advancements. The conclusion is that the position of accounting is becoming more difficult in the light of constantly evolving technology. The study recommends that the best way to make sure accountants stay up to date with modern economic and technological developments is ongoing training. The study also recommends that government agencies and businesses that employ accountants should offer necessary support in this area.

Keywords: Accounting, artificial intelligence, socio-economic development, technological challenges

INTRODUCTION

Accounting is an information function that support economic judgments of decision-makers who are either insiders or outsiders of an economic unit. From a variety of perspectives, the roles of accounting as an agent of economic development have been studied (Oluwatuyi et al., 2022). The importance of financial reporting is highlighted, for example, when the capital market is pointed out as a clear route to access domestic saving. Bookkeeping is cited as a key component when analyzing the effectiveness of the income tax system for economic development.

Socioeconomic development is the process of raising people's quality of living through better employment, educational opportunities, and housing options. Socioeconomic development provides opportunities for improved quality of life for individuals, and ensures that everyone has access to the basic necessities of life; and the opportunity to make choices (Igwe & Ateke, 2018). It is a growth process that employs systematic and technical knowledge to meet specific economic

growth and human development requirements, including health, education, and clean environment (Nwulu & Ateke, 2014). Socio-economic development of nations is influenced by several factors, including basic infrastructure, and the use of the internet for routine tasks. Nigeria's economic hardship is caused by a lack of adequate infrastructure and other socio-economic development elements, including electricity, good road system, telecommunication, education, and awareness (Okewale & Atobatele, 2022). Infrastructural development is a key determinants of socio-economic growth and development. As a result of socioeconomic development, a society's activities are enhanced and altered, which has impact on the economy and reduces level of poverty among the people (UN 2011, as cited in Okewale & Atobatele, 2022).

The regular work of accountants is changing as a result of emerging technologies, which are also changing the professional lives of millions of people globally and the socioeconomic progress of countries. With the speed at which technology is advancing, this phenomenon is becoming more obvious. Numerous factors contribute changes. These include quick technology advancements, increased globalization and ease of communication through the internet, and legal and regulatory reforms. Accounting is significantly impacted by technology in both positive and negative ways, and accountants have historically been quick to accept new technologies (Carlin, 2019).

Numerous studies on technological developments in accounting have been published (Quinto II, 2022; Abdennadher, 2021); Kroon et al., 2021; Dos-Santos et al., 2020; Appelbaum & Robert, 2020; Abdalla, 2019; Cooper, 2019; Arnold, 2018; Coyle & David, 2018; Bello, 2013; Taipaleenmäki & Ikäheimo, 2013). These studies highlighted accounting challenges that require technological responses**.** However, studies on technological challenges to the use of accounting as a tool for Nigeria's socioeconomic development are scanty.

Alara (2017) concentrated on the role of accounting in national development, whereas Oluwatuyi et al. (2022) looked at accounting and Nigeria's economic development. Selected Nigerian businesses were used by Onwughai (2022) to examine how machine learning and artificial intelligence affect accounting operations. While Odoh (2018) concentrated on artificial intelligence system and its implications for proper record keeping in microfinance banks in Nigeria, Odoh et al. (2018) studied the impact of artificial intelligence on the performance of accounting operations among accounting companies in south east Nigeria. None of these studies addressed the technological challenges facing accounting a comprehensively. Thus, this study opt to bridge the observed gap in literature.

THEORETICAL REVIEW

This work is based on grounded theory of research – a model of research in business and management that aims to develop novel, qualitatively supported concepts and theories of business-related phenomena. Conceptual evolution, rather than a commitment to particular data sources, study regions, or theoretical focuses, is the methodological aim of this approach (Sanni, 2022). Instead, it refers to a qualitative analysis technique that has a number of distinguishing characteristics and makes use of a coding paradigm to ensure conceptual development density (Azar, 2016). It is also employed when it is believed that advancing a theory, as opposed to merely adding more details, is necessary. Grounded theory also provide interpretative researchers with a way to strike a balance between the necessity of developing theories that are based on commonplace behaviors and the understanding that the research process is ineluctably subjective.

High-quality research (i.e., research that is genuine, reliable, and impartial) will be generated if the correct procedures are followed (Azar, 2016).

CONCEPTUAL REVIEW

Concept of Accounting

Oluwatuyi et al. (2022) defined accounting as the process of identifying, measuring, and presenting economic data to allow consumers to make informed decisions. It involves the measuring, sharing, and analysis of financial activities (Soyode, 2002). Accounting is also defined as the process of documenting, categorizing, and summarizing in a meaningful way and in terms of financial transactions, events, and transactions that are at least partially of a financial nature and analyzing the outcome thereof (American Institute of Certified Public Accounts, AICPA 1975)

Accounting is the process of measuring and identifying economic variables in particular organizations and disseminating information based on this measurement to users who need to make educated decisions, according to Shillinglaw and Meyer (1983). Ibrahim (2009) regarded accounting in a variety of perspectives, including as a task carried out by accountants and their substitutes, a system made up of numerous interconnected and interdependent pieces, a management approach (in the broadest sense), and a field of study.

The best way to see accounting is as an information system (Gaffikin 1993). This information has been compiled, placed in a pertinent context, and distributed to those who might be interested. Information must meet all of the requirements for quality in order to be valuable to decision-makers. Such information must be readily accessible, pertinent, trustworthy, objective, and timely for the users' needs. In fact, if such information is to continue to have the desired properties, it must establish clearly defined processes for capturing and providing users with financial information.

Herein, accounting is referred to be a means of communication for businesses that reflects the economic and social development of a nation. It is viewed as a tool for both macroeconomic and social regulation (Kurosawa, 1938), making its success a prerequisite for socioeconomic development (Pintaux, 2002; Boka, 2010).

Accounting and Socio-economic Development

Accounting is crucial to socioeconomic development of the nations. Accounting in fundamental to increased openness, it facilitates the mobilization of domestic and international investments, fosters a solid investment climate, and promotes financial stability and high-quality corporate reporting needed for socioeconomic development. In addition, accounting increases global competitiveness by attracting outside funding and seizing opportunities presented by global markets, so assisting in the reduction of corruption and resource mismanagement (United Nations Conference on Trade and Development [UNCTAD], 2017).

According to (Oluwatuyi et al., 2022; Alara, 2017), accounting is crucial to maintaining social harmony, political stability, and economic sustainability needed for socioeconomic development in any given state or country. Accounting is used as a tool to assess the financial success and viability of a project inside an economic system. Almost all societal segments require and make use of financial information, both directly and indirectly. The information required for financial planning and control that accelerates socioeconomic development is provided by accounting. With

Nigeria's industrialization and corresponding increase in commercial activity, accounting's contribution to socioeconomic growth increases substantially.

Technological Challenges of Accounting

Trends in information and communication technology are progressively changing the way people communicate and interact (Ateke & Nwulu, 2018); and how firms conduct business operations, record transactions, and store, retrieve and share business-related information. Many aspects of personal, social and commercial lives, including everyday decision-making, are increasingly influenced by the Internet and internet-enabled technologies (Ateke & Lawson, 2020).

The evolution of the internet and the creation of Internet-enabled technologies also enhance the conduct and reporting of accounting activities. Advances in technology has significantly altered the way business activities are conducted and how records of business activities are captured and stored and retrieved and disseminated (Ateke & Isaac, 2020). The internet and internet-enabled technologies also enhance companies' efficiency, by reducing manual activities and cost of operations (Nunkoo & Ramkissoon, 2013).

In spite of the many benefits that comes with the adoption of technology in business operations, technology has also posed challenges to how business is conducted, and how records of business operations are captured, stored, retrieved and disseminated. Herein, we identify and briefly explain automation and artificial intelligence, cybersecurity, remote work and new technology and tools as some of these challenges, and also proffer suggestions on how they can tackled.

Automation and artificial intelligence (AI)

One of the major technological issues facing accounting is artificial intelligence (AI) (Onwughai, 2022; Bizarro & Dorian, 2017; Makridakis, 2017). Grewal (2014) suggested AI as a mechanical simulation system that involves gathering, evaluating, and eventually sending knowledge, information, and intelligence to appropriate parties in the form of intelligence that may be used. Haenlein and Kaplan (2019, cited in Zemánková, 2019) defined AI as a system's capacity to efficiently receive external input, learn from it, and apply what it has learned to fulfill specific goals and tasks through flexible adaptation.

Omoteso (2012) identify consistency, efficiency and effectiveness, audit task structure, better decision-making and communication, increased staff training, new staff skill development, and faster decision-making as some of the advantages of using AI in accounting and auditing. Adoption of AI in accounting and auditing also reduces fraud, improves accuracy of accounting data, and encourages reform of traditional accounting and auditing (Chukwuani & Egiyi, 2020). In the view of Mohammad (2020), accountants will ultimately be able to reduce accounting costs and contribute value to the accounting by reorienting their attention away from the dreary duties they are currently performing and toward judgments that are based on data and analytics.

AI however, pose challenge to accountants. A study conducted by University of Oxford in 2015 found that when computers take over data analysis and number crunching, there is a 95% chance that accountants would lose their jobs. However, the same data indicates that as technology develops, some employments may be lost while others are created. AI has drawbacks, including high initial installation costs, the displacement of human labor, and the inability of computers to fully function without human involvement because they lack human initiative, empathy, and

decision-making skills (Fogarty, 2019; Eleonora, 2018; Jiaxin et al., 2018). The employment of AI has a number of disadvantages, some of which may be detrimental to the accounting profession (Hasan, 2022).

Furthermore, the adoption of AI in record keeping in developing economies is fraught with difficulties, from low financing to a lack of human skill (Avneet, 2015). Adoption of AI in Nigeria is discouraged by lack of a proper knowledge. Another issue with AI systems is their vulnerability to being infiltrated, compromised, or even showing undesirable behaviors (Onwughai, 2022). The total result of these accounting flaws is the presenting of less-than-accurate financial records, which could then have a negative impact on the country's socioeconomic progress.

The way out of this challenge is first of all, to realize that artificial intelligence cannot replace human inventiveness and judgment in accounting and auditing. Changes in technology, laws, and the economy will continue to challenge the profession's traditional methods of thought, which is a positive thing. The market's response to these changes will ultimately determine how accounting tasks are carried out. Accountants and auditors must be prepared to act quickly in response to changes in user demand as well as the development of novel and developing organizational performance metrics outside of conventional financial statements if accounting is to be a useful tool for the socioeconomic development of the country. AI should be covered in the training for auditors and accountants. Auditors' judgment and professional skepticism will be more crucial than ever as they use new technologies. Instead of replacing accountants, AI will shift the focus (Greenman, 2017).

Cybersecurity

Accounting faces many challenges, including cybersecurity, which has grown increasingly difficult as technology has developed. Cybersecurity is the process of securing the networks, systems, and applications of digital networks. In error, it is usually interpreted as information security or IT security. All information assets, whether they are in physical copy or digital form, are assumed to be protected by IT security (Yadav, 2017; Von & Van, 2013). The Information Assurance (IA) component of a cyber security system is essential. It entails safeguarding information and managing risks related to its use, processing, storage, and transfer, as well as the systems and procedures that employ it (Wang et al., 2013). Cybersecurity is the biggest issue facing accountants right now since unauthorized access to a country's data base can have a detrimental effect on that nation's socioeconomic development (Ehioghiren et al., 2021).

Cybercrime has increased as a result of more people using the internet. Cybercrime in Nigeria not only further exacerbates the financial sector by placing individuals at the whim of online scammers known as "yahoo-yahoo" boys, but it also demonstrates the desperate measures used by financial institutions to hide the widespread hacking to which they are susceptible (Lambo, 2022). More cybercriminals target Personally Identifiable Information (PII), which is used to carry out account takeover fraud, as more consumers are drawn in by the allures of money transfer Apps, working from home, and doing transactions from convenient locations.

During the #ENDSARS protest in Nigeria, cyberattacks by international hacktivists were witnessed. The Syrian Electronic Army (SEA) launched DDOS attacks against a particular website during the event in support of the young people protesting against police brutality. The websites of a few notable public agencies, including the Central Bank of Nigeria (CBN), the Nigerian

Communications Commission (NCC), and the Police Service Commission, were compromised. All of these actions were taken in full knowledge of the security agencies' weak understanding of the cyberspace. Without adequate cybersecurity, accounting will not be able to run smoothly and this will have a negative impact on its being a helpful tool for the nation's socioeconomic progress.

The challenge of cybersecurity may be addressed by first of all, acknowledging that professional accountants have a lot to contribute to cyber security as it is necessary for professional practices to have a strong institutional framework that will support good corporate governance in both public and private firms that will build and install public confidence among stakeholders and the entire business system (Gyun & Vasarhelyi, 2017). Gordon et al. (2010) claim that having this knowledge would help accounting professionals comprehend the pertinent facets of cyber security and provide policymakers and implementers with more knowledge on how to design a cyber-security system. The disclosure of information about internal audit and cyber security controls within Nigerian organizations will help with the provision of litigation support services in addition to the essential provision of professional services in courts (Cheng & Walton, 2019, as cited in Billie, 2022).

Professional association (accounting inclusive), must sponsor bills on cyber security that will be passed in order for the government and regulatory bodies to be able to develop rules and guidelines to manage cybercrime activities. This is highly required if accounting is to continue serving as a tool for socioeconomic development. Nigerians must put an emphasis on adopting integrity, objectivity, fairness, and accountability in all facets of daily life in order to advance the socioeconomic development of the country.

It is not only necessary, but should be aggressively pursued by all developing countries, of which Nigeria is not exempt, to have a pursued Cybersecurity Policy and Strategy that increases awareness and affects cyberculture while closing up, sustaining, and ensuring that international cyberspace initiatives are linked to a national strategy. Accounting must work with relevant stakeholders to build cybersecurity policy if it is to be a helpful tool for socioeconomic growth. A well-informed cybersecurity policy will enable susceptible corporate and governmental institutions to go beyond personalized cyber security measures, increasing user awareness and keeping users a step ahead of attackers (Trelix, 2022). Cyberspace will be protected and kept safe by developing a comprehensive strategy through ongoing threat awareness, proactive measures that constantly foresee threats and vulnerabilities and relentlessly defend against them.

The Nigerian Cybercrime (Prohibition, Prevention, etc.) Act 2015, which is well-conceived on paper and in line with what is possible in the developed world, has not yet been observed in action by any of the federal security agencies, nor has it been seen protecting her financial sector. Cyber strategy is tightly knit around state and public-private partnerships, with awareness levels regularly ramped up, and this is severely lacking in Nigeria's cybersecurity policy. The cyberspace has advanced beyond governments' ability to wage war. The national cybersecurity policy could be considered as a manifestation of the concentric nature of the national security architecture, which lacks flexibility to address a federal system (Maibashira, 2022; Afuzie, 2022 cited in Bille, 2022).

A cyber liability insurance policy protects businesses from monetary losses, reputational damage, and brand erosion brought on by cyber catastrophes such as data breaches and theft, system hacking, ransomware extortion, and denial of service. The absence of policies covering cyber liability in the financial statements of institutions providing financial services or education services

in Nigeria attests to the product's embryonic stage in that country (Oaikhena, 2022; Tijani & Oloyede, 2020).

It is interesting to note that the Central Bank of Nigeria's Risk Based Cybersecurity Framework recommended that Payment Service Providers consider cyber-insurance coverage as a component of their security assurance program. Nothing comparable about any of the Insurance Act 2003's amendments or its clauses could be asserted. Most banks hide their cyberattacks from the public because they are worried about reputational harm or uninformed panic withdrawals from customers. Integrated efforts to secure the financial services sector are also in their infancy, which limits the collective approach and awareness (Bille, 2022).

Remote work (Work from Home)

Technology advancements have made remote work, sometimes known as Work from Home (WFH), possible. The typical office has been replaced in recent years by more flexible, distributed work arrangements, which poses a significant challenge to accounting (Gerdeman, 2021). There are many reasons why people prefer working remotely, but it is clear that doing so makes them happy. But when knowledge workers return to the office, they usually find that their productivity and happiness have decreased (Jaqua, 2022). Some employers believe that by giving their staff the option to work from home, they may attract top talent who will stay with them longer than if they were required to do so in an unfriendly office environment (Prossack, 2021).

There are several advantages to working from home for accounting. The benefits of WFH include work-life balance, increased productivity, lower stress, shorter commutes, fewer interaction with coworkers, and increased control over work schedules, according to Ipsen et al. (2021). WFH makes it simpler for businesses to entice skilled individuals who do not desire to be bound to one particular workplace. This offers business management the chance to lower administrative expenses. Because it reduces costs for businesses significantly, the virtual way of working is becoming more and more common (Olufemi, 2021).

An organization becomes more adaptable and better equipped to handle a variety of crises and the rapidly changing market conditions. WFH enables businesses to employ competent people from anywhere in the world who can work around the clock, regardless of time zone, increasing productivity and profitability. This also makes WFH more appealing and well-liked (Stich, 2020; Fisher & Fisher, 2001). All of these are advantageous for the socioeconomic advancement of any country.

There are disadvantages to working from home that accounting finds quite concerning. One of them is a worker's lack of communication with their coworkers and professional isolation which negatively affect manager-employee relationship. This has an impact on feedback and practical examples of what superiors should do in specific situations (Diab-Bahman & Al-Enzi, 2020). Reduced human contact, miscommunication, isolation, and role uncertainty are some of the drawbacks of WFH (Ipsen et al., 2021). WFH has detrimental impact on knowledge management, knowledge sharing, and worker socialization. When too many workers telecommute, cooperation may be challenging (Van der Lippe & Lippenyi, 2020). Sarti and Torre (2017) noted that potential barriers to WFH include challenging worker coordination and cooperation, anxiety associated to working alone, investments in information technologies, and apprehension over managerial control.

For these reasons, many companies still prohibit remote employment. First, individuals might not be able to respond quickly enough if a critical situation happens at work. This might be very problematic for businesses that rely on offering top-notch customer service (Pinola, 2020). When it comes to pressing accounting-related activities like payroll, tax deadlines, and other related tasks, it could lead to missed deadlines or other problems. These adversely affect socioeconomic development in an indirect manner. Working remotely might be advantageous for some people, but it can also be detrimental to teams. Working remotely on a regular basis upsets the systems that support effective teamwork.

To adequately handle this challenge, employers should consider the disadvantages before implementing remote working policies since even with them, they are still preferable to having everyone in the same building every day. Making remote work sustainable requires significant planning and preparation on the parts of both employers and employees. When accounting is utilized as a tool for economic development, its primary objective should be to make established financial controls function with a dispersed workforce. Use a traditional risk assessment approach to determine which controls could put the organization at risk. The majority of businesses can clearly benefit from cloud-based accounting software's ability to handle remote accounting staff.

New Technology and Tools

Today's accounting-related technologies include e-business, input and output processing, cloud computing, information technology, supply chain management systems, forensic accounting, and others (Quin 2018). The use of technology in accounting has improved a number of processes. Although there are benefits to technology, there are also disadvantages in the accounting sector. The systems are no longer relevant due to quick technological improvements. Regular updates are necessary for accounting systems to function properly and effectively as a tool for socioeconomic growth (Quinto II, 2022). The system's increased updating expenses could have an effect on profitability. Accounting software providers may experience problems if they are unable to access their data as a result of a power or computer failure. Financial data loss could also be a result of improper backup strategies (Armenia, 2021).

Data that is provided by an accounting system can only be as accurate as the data it receives. If all data entered into accounting systems is not adequately examined, financial reports could be inaccurate, which could result in incorrect socioeconomic decisions. If an accounting system's final output or reports are only sometimes inspected, it could be challenging to determine whether the data is accurate. Third, additional security measures must be implemented in accounting software to safeguard information against problems like fraud and theft. Finally, there is a chance that unemployment will exacerbate socio-economic development if accounting is fully computerized and modernized as a result of technology.

The solution to this challenge is for accountants to keep up with new technological advancements and use the proper tools in carrying out their duties in order to boost the socio-economic development of the nation.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

In the light of constantly evolving technology, accounting's position is growing more difficult. Accountants are quite skilled at enacting favorable economic changes. Because they are the managers of financial resources, accountants are in the best position to advise policy makers on

how to proceed with managing the national economy. They must adapt to the rapid changes in technology, with all of its drawbacks, in order to efficiently carry out this function and make accounting a helpful tool for the socioeconomic development of the country. The conclusion is that in the absence of a well-developed accounting process that can keep up with emerging technology, there would unavoidably be under- and incorrect resource allocation that will negatively impact socio-economic growth.

The paper recommends that accounting students should have access to accounting courses that cater for their needs as part of their education. They ought to learn how to use information and communication technology to change the world. E-accounting is one instance of a digital application that addresses this issue. E-accounting is the idea that online tools may help organizations operate more swiftly, inexpensively, and efficiently than they could in the past. Concurrent users of the system include employees, managers, consumers, citizens, organizations affiliated with the government, and suppliers.

In response to these difficulties, professional accounting bodies have created competency frameworks (International Federation of Accountants, 2019; Institute of Management Accounting, 2019) and reports on potential future careers in accounting (Association of Chartered Certified Accountants, 2020) to manage these changes, face anticipated challenges, and seize potential opportunities. Due to these rising technologies, accounting work will undergo a great deal of change in the upcoming years. These changes may be disruptive, but they also present a great number of possible opportunities for the profession (Demirkan et al., 2020). In general, the biggest worry is how professions will change and how skills will change.

An accountant needs to be well-versed in current economic and technological changes in order to be effective and remain relevant in the ever-changing company environment. It is advised to keep on training and retraining. Governments and other accounting-related employers should provide the required support in this area.

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