International Business & Economics Studies
ISSN 2640-9852 (Print) ISSN 2640-9860 (Online)
Vol. 5, No. 3, 2023
www.scholink.org/ojs/index.php/ibes

Original Paper

An Assessment of the Impact of Disruptive Technologies on the Efficacy of Accounting Practices in Selected South Western States, Nigeria

Israel S. Akinadewo[1], Muyiwa E. Dagunduro[2], Ifeoluwa M. Adebiyi[3], Omobolade S. Ogundele[4], & Jeremiah O. Akinadewo[5]

[1] Department of Accounting, College of Social and Management Sciences, Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria; omoeri@abuad.edu.ng ORCID: 0000-0002-2094-6843

[2] Department of Accounting, College of Social and Management Sciences, Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria; dagundurome@pg.abuad.edu.ng ORCID 0000-0002-1177-7101

[3] Department of Accounting, College of Social and Management Sciences, Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria; imadebiyi@abuad.edu.ng ORCID 0000-0002-7511-7970

[4] Department of Accounting and Finance, Kings University, Odeomu, Osun State, Nigeria; os.ogundele@kingsuniversity.edu.ng, ORCID: 0000-0002-2094-6843

[5] Department of Accounting and Finance, Faculty of Business and Law, De Montfort University, Leicester, United Kingdom; jeremiahh.akinadewo@gmail.com, ORCID: 0009-0002-2848-8207

Received: May 6, 2023 Accepted: June 23, 2023 Online Published: June 29, 2023

doi:10.22158/ibes.v5n3p1 URL: http://dx.doi.org/10.22158/ibes.v5n3p1

Abstract

Advancement in technology has brought intense but healthy competition among professional bodies in Nigeria, especially in the field of accounting. This has systematically transformed the accounting process from a traditional analog to a digital system. It is on this note that this study examined how disruptive technology affects the efficacy of accounting practice in Nigeria. This study employed a survey research method with the use of a structured questionnaire distributed among professional bodies in Ekiti, Osun, and Ondo States, South Western Nigeria. Regression analysis of Ordinary Least Squares coupled with correlation analysis were employed. The results revealed that artificial intelligence, blockchain, big data, and the internet of things had a significant positive effect on the controlled variable in Nigeria. The results also revealed that cloud computing had insignificant negative effect on the dependent variable. With the F Statistics (7.113) = 109.747, P = 0.000 < 0.05), the results showed a significantly strong relationship between the controlling and controlled variables.

It is, thus, recommended the pivotal need for accounting practitioners to enhance their knowledge of disruptive technologies through training and retraining, and continuous attendance of related workshops organized by the respective professional bodies in Nigeria.

Keywords

accounting practice, artificial intelligence, big data, cloud computing, disruptive technology

1. Introduction

Globally, advancement in technology has created disruption in the existing pattern and modes of service deliveries of several organisations. As business and public entities keep expanding with increased investment in technology, there is also the need for accounting practitioners to be abreast of organisations' short and long-term innovative goals, most especially in the area of the adoption of disruptive technologies for business operations. Scholars have advanced the argument that any effective decision of management is contingent on the efficient collection of data, the analysis, the summary, and the eventual interpretation (Younis, 2020). The emergence of disruptive technology has, thus, diversely impacted the aspects of accounting environments; bringing dynamic changes to how accounting transactions are processed.

Regarding this, Adams (2021), opined that government including the professional accountants' bodies need to deal with these changes for adaptation. The level of this adaption relative to achieving corporate objectives has had mixed feelings. For instance, Awotomilusi et al. (2022) believed that extra services could be offered for clients, using the time that was once utilised without the presence of disruptive technology, and the continous advancement in technology, will offer cost savings, better output, time-saving, and comfort to the organization. This, consequently, becomes the concern for accounting practitioners.

While improvements in productivity and efficiency are brought about by the invention of accounting methods, nonetheless, Akinadewo (2021) asserted that more detailed issues concerning adverse effects equally came to the consciousness of practitioners. This is coupled with the changes in the manner of accounting systems data collecton as a result of the introduction of computer technology (Ajape et al., 2021). Consequently, the working actions of accountants, scholars in the field of accounting, and accounting experts would most likely be interrupted by digitalisation including work procedures and networking also enjoying the benefits (Gartner, 2016). This made researchers argued that in spite of the upward movement in the interest in telecommunication in Nigeria, the primary link to disruptive technologies, performance still appears to be below par (Adegbie et al., 2021).

To this end, Zaki et al. (2020) argued that the revolution experiencing in accounting from innovative technology is being given the desired digitalised attention. It is, therefore, imperative to have a deeper view of the adaptability of accounting practices to this digital evolution as it concerns the adoption of disruptive technologies for business transactions. Due to the digitalisation in this contemporary world, emerging technology opens wider doors in the form of computer programs and software, which

accounting practitioners are required to acquire the needed knowledge. To underscore the effect of disruptive technology on accounting practices' effectiveness, reporting, and possible effective monitoring is required in nurturing the knowledge in the new technology (Andronie & Lonescu, 2019). To accept the technological encounters, there is a need for efficient support for practitioners' abilities in the changeover phases (Blazquez & Domenech, 2018). Thus, when critically managed, the innovation of the process in the accounting segment is expected to enable higher productivity (Falana et al., 2023; Owonifari et al., 2023; Jia, 2020).

For this reason, the innovation that exists in the business world also encompasses the accounting sector, which is argued to be a likely option for human functions (Kroon et al., 2021). Disruptive technology which includes big data, artificial intelligence, cloud computing, and internets of a thing, among others, is believed to hugely influence the accounting sector and the procedure of financial transactions in the nearest future (Nwakoby et al., 2017). Digital disruptions, therefore, could be a huge task during accounting practitioners' transition to emerging technologies. In view of the expected vibrancy of the technology and the impact on the accounting sector, practitioners are believed would have to transit to meet up to the challenges of these technologies (Alaoma et al., 2020). This, thus, becomes the concern of scholars and other stakeholders as to evaluate the reaction of accounting practitioners to disruptive technology adoption, especially, as it affects Nigeria. It is with this concern that Ajape et al. (2021) accentuated that there are challenges for the 21st century accounting-related tasks as a result of the sophistication in the business world, engineered by technological advancement.

While scholars have examined majorly on the effect of artificial intelligence on accountants' approach to accounting functions, on businesses and the economy, and on accounting and audit (Akinadewo, 2021; Akinsola & Adeagbo, 2022; Hasan, 2022), and Awotomilusi et al. (2022) evaluated the effect of the cloud computing on accounting practices' efficacy in Nigeria, this study expanded the proxies of the controlling variable to capture critical disruptive technologies like Cloud Computing (CC), Artificial Intelligence (AI), Block Chain (BC), Internet of Things (IoT), and Big Data (BD). The mixed results of the outputs of these studies also necessitated the relevance of this empirical investigation. Consequently, this paper seeks to expand the research in the understanding of how innovative technologies would affect the activities of accountants, auditors and financial experts. A number of intriguing concerns have gone unchecked, making it possible to learn useful information about how accounting professionals have integrated the switch to digital technology through the accounting lens (Ibrahim et al., 2021). It is in line with this that this study examines the nexus between disruptive technology and the efficacy of the accounting practice in Nigeria. The hypothesis, in null form, will also also be tested.

2. Conceptual Review and Theoretical Framework

The relevant independent variable in addition to the respective proxies is reviewed with regard to the link to the controlled variable. The appropriate theory underpinning this study was also critically critiqued.

2.1.1 Influence of Disruptive Technology (DT) on Contemporary Business Transactions

Arifin (2019) argued that new and better technological innovations appear almost everyday and they change the way firms conduct their business activities. The scholar further opined that this digitalisation is a disruptive change. Arguing similarly, Arifin (2019) believed that it is difficult for companies to repeat their success when technology changes. This, however, argues at variance with the submission of Christensen (1997), who is believed to have coined the term "disruptive technology". To this scholar, it innovatively emerged to lower the cost and performance that this is a new technology having lower cost and performance measured by traditional criteria, however, with better contributory performance. However, Christensen (1997) acknowledged that DT might strengthen its positions in emerging markets over time, eventually taking on well-established products in their conventional markets. This line of argument of Christensen divergently opined by scholars that other disjointed patterns of change, which might be of equal or higher relevance were ignored (Chen et al., 2016; Christensen & Bower, 1996; Ghani et al., 2019).

Similarly, Adegbie et al. (2021) argued that the advancement in new technologies globally is disrupting competition in a number of the traditional market. This implies that the adoption of disruptive technologies for business transactions and even for accounting transactions could have mixed effects. This was also consented with through the argument of Christensen (1997) that the real relevance of this technology is not of the total displacement of established products but seen as a powerful mechanism to enlarge and broaden markets through the provisions of new functionality. Ahannaya et al. (2022), brought a clearer picture of the changes that DT would make in the accounting profession. According to these researchers, technology advancements in the accounting industry and other fields are already disrupting several businesses and will do so in the future, especially in developing economies. Referencing Cong et al. (2018), Ahannaya et al. (2022) further argued that robotic process automation, artificial intelligence, and blockchain, among others have remodeled existing business models, thus, facilitating a new approach to the field of accounting. It is, thus, expected that DT would create mixed effects on accounting practices.

2.1.2 Big Data and Accounting Practices

Benbrahim et al. (2020) referred to big data as non-traditional technologies that make available large datasets. In line with the argument of Benbrahim et al. (2020), Gartner (2016) opined big data is big, various, and fast-flowing information that focuses on the feasibility of innovative processing methods, so as to develop stronger decision-making methods and automation of processes. In the same argument, Zaki et al. (2020) believed that big data occurs in real-time. However, according to Elgendy and Elragal (2014), they are datasets that are varied, enormous, and changing quickly, making it difficult to manage

using conventional techniques. On this premix, it could be deduced that big data is a form of digital data that contains different varieties, arriving in large volumes and with more expeditions (Falana et al., 2023).

Younis (2020) believes that while the amount of data is increasing, the rate at which it is doing so is unprecedented. To this author, data analytics is not novel, for accountants have majorly been frequently employing analytical techniques like ratio and time series analysis for accounting practices. Comparably, Jia (2020) claimed that while companies like banks have previously used big data, the term "big data" does not just refer to vast volumes of data, but the relative difference between big data and data used by an accountant lies in volume, velocity, and variety. To Warren et al. (2015), this new innovation can be used in financial accounting where new data types can be integrated with accounting data into the accounting systems. This assertion was made more succinctly by Falana et al. (2023), which stated that the accounting profession is driven by big data. Laconically, however, several scholars believed that it is far more than financial and accounting data (Blazquez & Domenech, 2018; Ghani et al., 2019; Basukie et al., 2020; Bag et al., 2020; Dagunduro et al., 2023). Accordingly, it includes quantitative data, qualitative data, and accounting and non-accounting data, among others, which becomes accessible massively in diverse formats, and in real-time (Blazquez & Domenech, 2018; Ghani et al., 2019; Basukie et al., 2020; Bag et al., 2020). It is, thus, imperative to assert that this new technology would improve all types of accounting transactions including financial reporting practices (Falana et al., 2023; Warren et al., 2015), and accordingly, develop auditing (Brown-Liburd et al., 2015; Yoon et al., 2015; Iqbal et al., 2020).

2.1.3 Blockchain and Accounting Practices

This type of DT is viewed as an executed and shared distributed database of records by interested parties. Each specific action in public ledgers are verified through the agreement of the majority of system participants (Olugbohungbe & Awodele, 2021). Odoh et al. (2018) likened it to a large excel sheet that records all global assets and serves as an accounting system for transactions on an international scale, encompassing all varieties held by parties worldwide. Succinctly, Okafor and Egiyi (2021) believed that it is capable to store and confirm transactions that emerged in its network. The scholars further argued that no entity owns it, but control over the network is shared amongst the users. Hypothetically, if larger companies adopt this system for their transactions, it would enable the aggregation of financial statements at any given time. Arguably, Kumar et al. (2017) were believed to be the pioneer in articulately describing the likelihood of blockchain accounting by conventional firms. Kumar et al. (2017), further emphasized that this system reduces the need for trust in any intermediary such as a bank or insurance company if a company voluntarily publishes its transactions accordingly. Divergently, Komsuoglu and Boydas (2019) argued that accounting, which is deeply rooted in the integrity of bookkeepers and auditors who may be vulnerable to corrupt behavior, necessitates practitioners in obtaining adequate and suitable evidence supporting the authenticity of recorded events. This inevitably results in substantial costs.

2.1.4 Internet of Things (IoT) and Accounting Practices

It is claimed that this transmits data between several physical things that are located in various locations. Data can be changed and used as information in a variety of ways to improve human lives, according to Kumar and Raza (2017). According to (Ahannay et al., 2022), however, the impact of this model on daily activities is because a number of technologies and communications solutions have come together. Describing the modus operandsAccording to (Jiapang et al., 2019), accounting information systems accept transactions as inputs, which are then transformed into financial information by a variety of processes. Accounting practitioners, therefore, can remotely perform their activities without physical presence. Thus, Brown-Liburd et al. (2015) asserted that the use of IoT has a positive impact on all four qualitative features of financial information like verifiability, timeliness, comparability, and understandability (Owonifari et al., 2023).

2.1.5 Cloud Computing Accounting Practices

This has impacted every aspect of contemporary accounting functions (Awotomilusi et al., 2022). Comparably, Innocent (2016), argued that it is changing the approach and manners of business operations due to the upward movement in online transactions. To Egiyi and Udeh (2020), it is this evolution that gives the enablement for data and financial transactions to be stored remotely and from any place. Warren (2015) made a similar argument, claiming that in today's business climate, accounting principles and practices have advanced quickly. To this author, the guidelines of the global economy may be constant, but the advancement in technology has made the accounting system more potent than it was. Because of this, Okafor and Egiyi (2021) suggested that companies using cloud accounting software adjust their current operations more quickly in order to keep up with the new expectation of more customers. In the submission of Ghani et al. (2019), the budgets of organisations could be the determinant of the preference between dedicated cloud services or shared cloud services. In practical terms, this new innovation assists users, including accounting practitioners to perform their activities from a remote location, thus, ensuring quicker delivery of financial information. Thus, Ndubuaku & Okerafor (2015), opined that it will be of immense benefit through efficient time management in service delivery to clients, with more time to focus on business strategy.

2.1.6 Artificial Intelligence and Accounting Practices

This pools mathematics, computer science, linguistics, physiology, etc, to stimulate human features through computer systems (Dagunduro et al., 2023). Bags et al. (2020), posited that the trio of Herbert Simon, John Shaw, and Allen Newell initiated this through the Logic Theory of AI. To them, this was innovated to replicate human problem-solving abilities. Since its introduction, research has indicated shifts in both the functional and transactional aspects of the worldwide accounting profession. Busayo et al. (2023), stated that technological advancements have driven fundamental changes across industries and now significantly impact the auditing field. Scholars, however, argued that the emergence of AI and robotics, has altered accounting systems, placing an inevitable emphasis on accountants to enhance their technological expertise (Akinadewo, 2021; Busayo et al., 2023; Dagunduro et al., 2023; Odoh et

al., 2018; Okafor & Egiyi, 2021; Owonifari et al., 2023). In a more precise mode, Issa et al. (2016), believed that the application of AI to accounting functions increases the effectiveness and efficiency of activities and deliveries, and will eliminate some accounting costs (Issa et al., 2016; Odoh et al., 2018). Contrary to the submissions of Issa et al. (2016) and Odoh et al. (2018), Jiapang et al. (2019), opinionated that this new innovative system could increase unemployment as it is expected that it would take over some activities hitherto handled by humans. In the argument of Olugbohungbe & Awodele (2021), AI will lead to tools in use by humans that will often change whenever there is the introduction of new technology.

Irrespective of the experience of accountants, Akinadewo (2021) argued that AI is capable of changing the accounting and business roles of accounting practitioners. This position was echoed by Warren et al. (2019) that the era of AI has injected smart machines for daily routine activities and at the same time competing with humans, possibly leading to labour downscaling. Consequently, the adoption of new technology has surpassed the traditional accounting system, resulting in either positive or negative alterations to accounting function mechanisms (Chukwuani & Egiyi, 2020). The integration of AI into accounting tasks has, therefore, led to a comprehensive overhaul of the accounting system (Dagunduro et al., 2023; Chukwuani & Egiyi, 2020).

2.2 Theoretical Framework

The study reviewed the Innovators' Dilemma as propounded by Clayton Christensen in 1997, for its underpinning.

2.2.1 Innovators Dilemma

This study reviewed the theory of Innovators' Dilemma conceptualised by Clayton Christensen in 1997. The theory covers how innovative new technologies affect a firm's ability to operate. To this theorist, there is a dilemma as to how firms could react to when new innovation could cause great firms to fail. It argues for the possibility of some firms not being able to counter the impacts of new technology. To this theorist, the unpredictable nature of disruptive technology could make well-managed and successful companies to still be negatively affected. To align with Christensen (1997), Terry (2020) argued that disruptive technology creates openings for new products. To this scholar, new technology enables low-income markets to have a piece of otherwise inaccessible technology and is applicable to almost all sectors. Therefore, it is considered that whereas disruptive technologies disrupt or redefine performance standards, thereby generating a new market, sustainable technologies provide value to current and established products (Christensen, 1997; Anthony, 2004). Terry (2020), however, opined divergently that independent studies counter the claims of Christensen and inferred that the theory of the Innovators' Dilemma is unsupported with much evidence but around 9% of cases researched, fit this theory. Terry (2020), meanwhile, further claimed that the critique of this theory has in no way dimmed disruption's popularity as a theory.

Despite the critical evaluation position of Terry (2020), the theory is evidently relevant to the approach of firms to business activities. For instance, during the Covid-19 pandemic, it supported the virtual

processing of transactions in business including accounting and auditing activities. It is sufficient to assert that unlike the almost impossible completion of audit exercise without a physical presence in the client's office decades ago, auditors in Nigeria, were able to make use of advancements in technology like cloud computing to effectively conclude audit assignments remotely. Thus, this study is underpinned by this theory.

2.3 Empirical Review

The impact of big data on strategic management accounting techniques in manufacturing companies was examined by Abdullah et al. (2022). This study, which made use of a qualitative approach, was in Shah Alam, Malaysia. Data were through observations, interviews, and a critical appraisal of related papers. The findings demonstrated that the use of big data enhances the application of strategic management accounting principles on competition and customer costing analyses. Akinsola and Adeagbo (2022) examined how AI affects businesses and the economy in Nigeria. this study reviewed extant literature and the results revealed that disruptive technology has a strong significant and positive relationship with the performance of businesses and the economy at large. Akinadewo (2021), however, examined the correlation between AI and the approach of accountants to their functions. The research employed a research design method that utilized a structured questionnaire, while a purposive sampling technique was applied to select the respondents. The outcomes of logit regression analysis indicated a significant positive impact of AI on the way accountants handle accounting responsibilities.

Hasan (2022) reviewed the application of AI in Accounting and Auditing environments. A semi-systematic or narrative review approach was employed. The study revealed that with reference to the challenges of disruptive technologies brought forth by the economic industry, the accounting and auditing discipline is required to undergo tremendous change so as to reach the next level. Awotomilusi et al. (2022) evaluated the application of cloud computing in determining the effectiveness of accounting procedures in Nigeria. The research involved administering a structured questionnaire to deposit money banks within the country. Data analysis was conducted with the aid of OLS and frequency. The investigation revealed that a significant positive correlation exists between cloud computing and the effectiveness of accounting practices in Nigeria.

Adelowotan and Coetsee (2021) conducted a study on the possible implications of blockchain technology on accounting practices. The study, which reviewed related literature, revealed the instant verification and immutability features for both accounting and auditing purposes. The study stated for blockchain to be used rigorously for accounting information purposes, the determinants will depend on different and cheaper validation processes. Adams (2021), however, transcribed the extent of that disruptive technologies have on modern accounting. The study adopted a review of extant literature and the results showed that disruptive technology has not only affected firms and clients in a quantitative manner, but they are also shaping the culture of these entities. Okafor and Egiyi (2021) investigated the effects of accounting practices in Enugu State, Nigeria, by considering all accounting firms within the state as their research population. The collected data was presented through frequencies, percentages,

tables, and charts. To test the statistical significance of the null hypothesis, the researchers utilized the Chi-Square test of independence and association. The result of the hypothesis demonstrated a significant connection between job proficiency and the use of ICT.

The review by Ibrahim et al. (2021) was on big data, cloud computing, artificial intelligence, and blockchain with the management accounting, auditing, and accounting sector with respect to emerging technologies. The result of the review of related literature showed that the crucial aspects of governance in emerging technology are embedded in the knowledge and skill of accounting practitioners including accounting educators in the promotion of a future-oriented mind. Meltem and Recep (2021) examined the main factors that play a role in users' decisions to adopt cloud-based accounting services in Turkey. The study adopted a modified version of the extended Unified Model of Electronic Government Adoption (extended UMEGA). The findings showed that computer self-efficacy, social impacts, and performance expectations have a positive and significant effect, while perceived risk has a negative and significant effect on attitude.

Karmanska (2021) examined the advantages and challenges associated with the implementation of the Internet of Things (IoT) within the accounting sector of organizations. This research carried out in Poland, utilized a survey design method facilitated by an online questionnaire. The regression analysis findings indicated that IoT adoption by accountants and accounting students enabled organizations to conduct improved reporting analysis based on extensive data acquired through sensors, cloud data access, and accounting process automation. Meanwhile, Ezekiel (2018) investigated the influence of disruptive technology on the performance of insurance companies in Kenya. The research employed a desktop literature review, concentrating on previously published journals addressing technology and insurance company performance. The outcomes demonstrated that multiple facets of disruptive technology significantly impact a company's performance.

Potekchina and Riumkin (2017) explored the theoretical framework for blockchain applications in accounting and discussed its implications accordingly. The study adopted a quantitative design. The findings showed that the potential material effect of blockchain accounting on credit score measures is confined within the boundaries of the actual volatility of quarterly credit scores. Wu et al. (2017) in their study, examined the effect of Blockchain and the Internet of Things (IoT) on improving accounting information quality. The study adopted a review of extant literature and the results showed that blockchain technology can significantly and positively improve the relevance of accounting information quality. Nwanyanwu (2016) conducted an empirical examination of the impact of Information and Communication Technology (ICT) on Accounting Practices (AP). Data were collected from accountants in accounting firms as well as the private and public sectors through questionnaires. Descriptive statistics, Pearson's product-moment correlation coefficient, and multiple regression analyses were performed using the Statistical Packages for Social Sciences (SPSS). The findings revealed that financial accounting exhibited a higher percentage of ICT utilization compared to auditing and taxation.

In the articles reviewed, mixed results were observed as to the effects of the identified disruptive technologies on the controlled variables. For instance, some articles concurred with positive effects, while part of the independent variables revealed negative effects. In addition, this study expanded on the types of disruptive technologies used to proxy the controlling variable to regress against the controlled variable. It is in line with the identified gaps that this study created the gap to fill added to the body of knowledge, especially as it concerns developing economies like Nigeria.

3. Methodology

This study used a structured questionnaire sampled among selected members of the Institute of Chartered Accountants of Nigeria (ICAN), the Association of National Accountants of Nigeria (ANAN), and the Chartered Institute of Taxation of Nigeria (CITN) located in Ekiti, Osun, and Ondo States, in South Western (SW) Nigeria. The three states were chosen being the least among the six SW states in the number of accounting and taxation practitioners and in the adoption of DT for accounting and taxation practices. They are, thus, chosen to have a deeper understanding of how the practitioners view the emergence of DT in their practice. The population comprised 1,875 practicing members of the selected professional bodies at the end of December 2022, with 570, 620, and 685 for Ekiti, Ondo, and Osun states respectively. Taro Yamane's (1967) formula was employed in the determination of the sample size of 730, with 235, 243, and 252 from Ekiti, Ondo, and Osun states respectively. The study employed correlation along with multiple regression analysis of Ordinary Least Square (OLS) to analyse data.

Calculation of Sample Size

$n = N/(1+N\ (e)^2)$

where: n = sample size; N = population; e = margin error

Ekiti

$n = 570/\ (1+570\ (0.05)^2)$

$n = 570/\ (1+570\ (0.0025)$

$n = 570/\ (1+1.425)$

$n = 570/2.425$

n = 235.05, approximated to 235

Ondo

$n = 620/\ (1+620\ (0.05)^2)$

$n = 620/\ (1+620\ (0.0025)$

$n = 620/\ (1+1.55)$

$n = 620/2.55$

n = 243.14, approximated to 243

Osun

$n = 685/\ (1+685\ (0.05)^2)$

n = 685/ (1+685 (0.0025)

n = 685/ (1+1.7125)

n = 685/2.7125

n = 252.54, approximated to 252

Sample size total = 235 + 243 + 252 = 730

3.1 Model Specification

Following the model in the work conducted by Ahannaya et al. (2022), this study formulates its model as:

EAP = f (AI, CC, BC, IoT, BD) …….. 3.1

$EAP = \beta_0 + \beta_1 AI + \beta_2 CC + \beta_3 IoT + \beta_4 BD + \mu$……..3.2

Where:

EAP = Efficacy of Accounting Practices

AI = Artificial Intelligence

CC = Cloud Computing

BC = Block Chain

IOT = Internet of Things

BD = Big Data

4. Results and Discussion of Findings

This section discusses the findings and the implications of the results in econometric terms.

4.1 Questionnaire Analysis

From the total of seven hundred and thirty (730) copies of the questionnaire administered, six hundred and eighty-six (686) were returned, representing 94% as shown in Table 1.

Table 1. Analysis of Questionnaire Administered

Questionnaires	Frequency	Percentage (%)
Returned	686	94%
Not Returned	44	6%
Total (Distributed)	730	100

Source: Authors' Field Survey (2023).

4.2 Reliability of the Research Instruments

The scale of reliability for Efficiency of Accounting Practices (EAP), Cloud Computing (CC), Artificial Intelligence (AI), Block Chain (BC), Internet of Things (IoT) and Big Data (BD) were investigated using Cronbach's Alpha. The test output in Table 2 showed that the scale items have good internal reliability, due to the Cronbach Alpha that exceeds 0.7 for all the measurements.

Table 2. Reliability Test

S/N	Variables	No. of Items	Cronbach's Alpha Coefficient	Remark
	Dependent Variable			
1	Efficiency of Accounting Practices (EAP)	5	0.896	Reliable
	Independent Variables			
2	Artificial Intelligence (AI)	3	0.762	Reliable
3	Cloud Computing (CC)	3	0.720	Reliable
4	Block Chain (BC)	3	0.764	Reliable
5	Internet of Things (IoT)	3	0.771	Reliable
6	Big Data (BD)	3	0.758	Reliable

Source: Authors' Computation, SPSS Output (2023).

4.3 Normality Test

In Figures 1 and 2, data were also subjected to normality test using histogram and P-P Plot. The result showed that the data set is normally distributed as most responses lies within the bean-shape of the histogram. The data used on Figure 2, revealed to be normal as the responses mostly rest along the limit line.

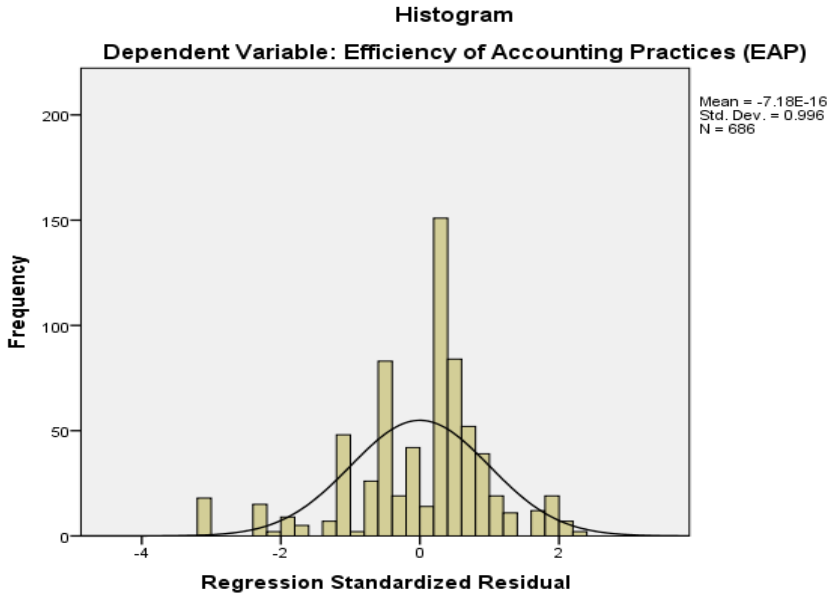

Figure 1. Histogram with Normal Curve

Source: Extracted from IBM SPSS V. 20 Output (2023).

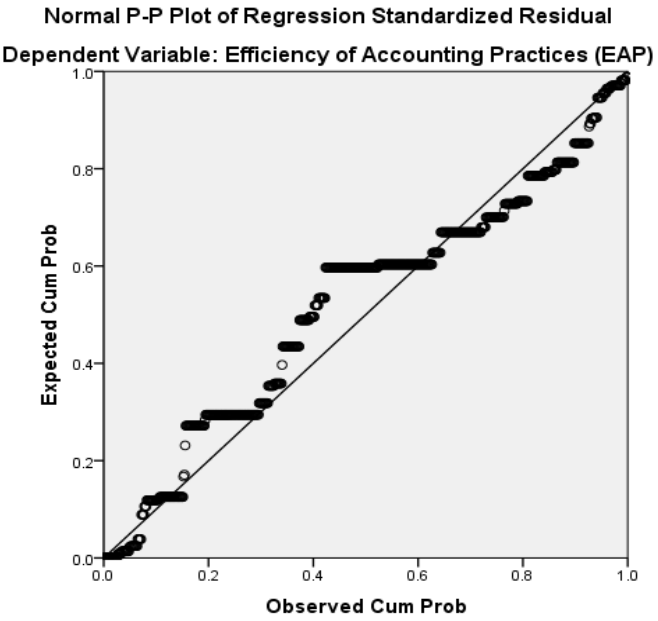

Figure 2. P-P Plot of Regression Standardized Residual

Source: Authors' Field Survey (2023)

4.4 Correlation Test

The result in Table 3, using Pearson correlation revealed that the correlation between efficacy of accounting practice are significant with a value of 0.505, 0.080, 0.490, 0.305 and 0.359 for Artificial Intelligence (AI), Cloud Computing (CC), Block Chain (BC), Internet of Things (IoT) and Big Data (BD) respectively.

Table 3. Correlations

		EAP	AI	CC	BC	IoT	BD
EAP	Pearson Correlation	1	.505**	.080*	.490**	.305**	.359**
	Sig. (1-tailed)		.000	.018	.000	.000	.000
	N	686	686	686	686	686	686
AI	Pearson Correlation	.505**	1	.301**	.234**	.346**	.622**
	Sig. (1-tailed)	.000		.000	.000	.000	.000
	N	686	686	686	686	686	686
CC	Pearson Correlation	.080*	.301**	1	-.188**	.321**	.331**
	Sig. (1-tailed)	.018	.000		.000	.000	.000
	N	686	686	686	686	686	686
BC	Pearson Correlation	.490**	.234**	-.188**	1	-.068*	-.033
	Sig. (1-tailed)	.000	.000	.000		.038	.192

	N	686	686	686	686	686	686
IoT	Pearson Correlation	.305**	.346**	.321**	-.068*	1	.583**
	Sig. (1-tailed)	.000	.000	.000	.038		.000
	N	686	686	686	686	686	686
BD	Pearson Correlation	.359**	.622**	.331**	-.033	.583**	1
	Sig. (1-tailed)	.000	.000	.000	.192	.000	
	N	686	686	686	686	686	686

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Source: Authors' Field Survey (2023).

4.5 Regression Analysis

From the OLS results in Tables 4-6, the dependent variable i.e., Efficacy of Accounting Practice (EAP) and the proxies for independent variable: Artificial Intelligence (AI), Cloud Computing (CC), Block Chain (BC), Internet of Things (IoT) and Big Data (BD) can be expressed mathematically as:

$$\mathbf{EAP = 0.511 + 0.152_{AI} - 0.013_{CC} + 0.398_{BC} + 0.269_{IoT} + 0.074_{BD}}$$

The result indicated that the coefficient of the constant parameter is 0.511. This implies that if all the explanatory variables are fixed at zero, efficacy of accounting practice will increase by 0.511 units. Similarly, AI has a positive coefficient of 0.152 units, which shows that a unit increase will lead to 0.152 units increase in efficacy of accounting practice in Nigeria. Cloud computing has a negative insignificant coefficient of 0.013 units. The result implies that a unit increase in CC will lead to 0.013 units decrease in EAP practice in Nigeria. Block chain, internet of things and big data have a significant positive coefficient of 0.398, 0.269 and 0.074 units respectively. The result showed that a unit increase in these three variables to the turn of 0.398, 0.269 and 0.074 will increase EAP with the same value respectively.

Also, the model summary in Table 4 revealed that the coefficient of determination was 0.747, while its adjusted R^2 stood at 0.713. This indicated that 71.3% of the variance in the efficacy of accounting practice in Nigeria can be explained by variation in all the explanatory variables, while the remaining is explained by the error term in the model. The F statistics was used with the regression model in Table 5, which shows a statistically significant relationship ($F(7.113) = 109.747$, $P = 0.000 < 0.05$). This shows a strong relationship between disruptive technology and the efficacy of accounting practice in Nigeria. Thus, the null hypothesis is rejected.

Table 4. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968[a]	.747	.713	.25458

a. Predictors: (Constant), Big Data (BD), Block Chain (BC), Cloud Computing (CC), Internet of Things (IoT), Artificial Intelligence (AL).

b. Dependent Variable: Efficiency of Accounting Practices (EAP).

Source: Authors' Field Survey (2023).

Table 5. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	35.564	5	7.113	109.747	.000[b]
	Residual	44.071	680	.065		
	Total	79.634	685			

a. Dependent Variable: Efficiency of Accounting Practices (EAP).

b. Predictors: (Constant), Big Data (BD), Block Chain (BC), Cloud Computing (CC), Internet of Things (IoT), Artificial Intelligence (AI).

Source: Authors' Field Survey (2023).

Table 6. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	.511	.247		2.068	.039
	Artificial Intelligence (AI)	.152	.021	.284	7.216	.000
	Cloud Computing (CC)	-.013	.028	-.014	-.454	.650
	Block Chain (BC)	.398	.028	.437	14.020	.000
	Internet of Things (IoT)	.269	.051	.186	5.231	.000
	Big Data (BD)	.074	.034	.093	2.181	.030

a. Dependent Variable: Efficacy of Accounting Practices (EAP)

Source: Authors' Field Survey (2023).

4.6 Discussion and Implication of Findings

To examine the nexus between disruptive technology and the efficacy of accounting practice in Nigeria, the study employed regression analysis of ordinary least squares. The outcome of the test revealed that artificial intelligence has a significant positive relationship with the efficacy of accounting practice in Nigeria. This result is supported by Ahannaya et al. (2022); Akinadewo (2021) and Odoh et al. (2018), among others, which claimed that artificial intelligence serves as tools employed by the accountant to drive and achieve the goals of their organization. It serves as a cost-saving mechanism for the operational efficiency of the organization.

In the same vein, cloud computing depicted a negative relationship with the efficacy of accounting practice in Nigeria. The implication of this is that a unit increase in cloud computing will decrease the efficacy of accounting practice in Nigeria. The implication of this result is not far from the high cost attached to this package before the effect can bring out positive value on the efficacy of accounting practice in Nigeria. The outcome of these findings is similar to the works of Egiyi and Udeh (2020); Innocent (2016) who observed that for successful implementation of cloud computing, corporate organizations must be stable financially and be fully prepared.

Block Chain, Internet of Things, and Big Data also revealed a positive significant relationship between these three variables and the efficacy of accounting practice in Nigeria. The implication of this result is that a unit increase in Block Chain, Internet of Things, and Big Data will bring about a significant increase in the efficacy of accounting practice in Nigeria. This result is supported by the work of Ndubuaku and Okereafor (2015); Alaoma et al. (2020) among others, which opinionated that with the aid of big data, business information can easily be stored, processed, retrieved, and made available for the use of accountants whenever the need arises.

5. Summary, Conclusion, and Recommendations

The study aimed to examine the relationship between disruptive technologies and the efficacy of accounting practice in Nigeria. Regression analysis using ordinary least squares was employed to analyze the data. The results revealed that artificial intelligence (AI) had a significant positive relationship with the efficacy of accounting practice in Nigeria. This finding is consistent with previous studies that highlighted the role of AI as a valuable tool for accountants to drive organizational goals and enhance operational efficiency. On the other hand, cloud computing showed a negative relationship with the efficacy of accounting practice in Nigeria. The high cost associated with cloud computing was identified as a possible reason for this result. Additionally, the study found that blockchain, internet of things (IoT), and big data demonstrated a positive significant relationship with the efficacy of accounting practice in Nigeria. This suggests that an increase in these technologies can lead to a significant improvement in accounting practice efficiency by facilitating the storage, processing, retrieval, and availability of business information.

5.1 Conclusion

The study concludes that disruptive technologies, particularly AI, blockchain, IoT, and big data, play a crucial role in enhancing the efficacy of accounting practice in Nigeria. These technologies offer opportunities for accountants to improve their performance, drive organizational goals, and achieve operational efficiency. The study also highlights the potential negative impact of cloud computing on accounting practice efficacy due to its associated high costs. These findings contribute to the understanding of how disruptive technologies influence accounting practice in Nigeria.

5.2 Recommendations

Based on the study findings, several recommendations can be made. Firstly, organizations in Nigeria should consider adopting and integrating AI into their accounting practices to enhance efficiency and improve decision-making processes. Secondly, the cost implications of cloud computing should be carefully evaluated before implementation, and organizations should ensure financial stability and preparedness for successful adoption. Thirdly, the adoption of blockchain, IoT, and big data should be encouraged as they have proven to positively impact accounting practice efficacy.

5.3 Contributions to Existing Knowledge

This study contributes to existing knowledge by providing empirical evidence of the nexus between disruptive technologies and the efficacy of accounting practice in Nigeria. The findings support previous research that highlights the positive impact of AI, blockchain, IoT, and big data on accounting practice efficiency. Consequent to this, the study strengthens the understanding of how disruptive technologies can transform accounting practices and improve organizational performance.

5.4 Limitations of the Study

The focus of this study, which was specifically on the Nigerian context, especially with 50% of the South Western states, may limit the generalizability of the findings to other countries or regions. In addition, the inability of this study to consider other potential factors or variables that could influence the efficacy of accounting practice in Nigeria, such as organizational culture or regulatory environment, is also a limitation.

5.5 Suggestions for Future Studies

Future studies could consider conducting comparative studies across different countries or regions for a more insight into the cultural, regulatory, and economic factors that influence the relationship between the variables. Investigating the role of other potential factors, such as organizational culture and regulatory environment, can provide a more comprehensive understanding of the efficacy of accounting practice in the context of disruptive technologies, in addition to increasing the number of respondents, if survey research method is considered.

References

Abdullah, N. H., Sanusi, S., & Savitri, E. (2022). The role and implications of big data on strategic management accounting practices: A case study in a Malaysian manufacturing company.

Management and Accounting Review, *21*(1), 57-71.

Adams, C. (2021). The effects of disruptive technologies on modern accounting. *An Honors Thesis (HONR 499)*.

Adelowotan, M., & Coetsee, D. (2021). Blockchain technology and implications for accounting practice. *Academy of Accounting and Financial Studies Journal*, *25*(4), 1-14.

Ahannaya, C. G., Adegbie, F. F., & Ajibade, A. T. (2022). Professional accounting institute: Disruptive accounting technology and institutional corporate social responsibility. *Global Journal of Current Research*, *9*(1), 8-17.

Akinadewo, I. S. (2021). Artificial intelligence and accountants' approach to accounting functions. *Covenant Journal of Politics & International Affairs*, *9*(1), 40-55.

Akinola, J. E. T., Adebayo, M. A., Oladapo, K. A., Akinsehinde, S. A., & Onipede, F. O. (2021). Artificial intelligence emergence in disruptive technology. *Journal of Computational Intelligence and Data Science*, *8*(1), 63-90.

Alaoma, E. J., Obilor, A. B., Virginia, I. O., & Tina, N. A. (2020). The Impact of big data analytics and business intelligence on management accountants: a critical appraisal. *International Journal of Innovative Research & Development*, *9*(7), 123-127.

Andronie, M., & Ionescu, L. (2019). "The Influence of cloud technology in transforming Accounting Practices." Annals of Spiru Haret University. *Economic Series*, *19*(4), 27-34. https://doi.org/10.26458/1941

Anthony, S. D. (2004). A diagnostic for disruptive innovation. *Harvard Business School*.

Awotomilusi, N., Dagunduro, M. E., & Osaloni, B. O. (2022). Adoption of cloud computing on the efficacy of accounting practices in Nigeria. *International Journal of Economics, Business and Management Research*, *6*(12), 194-205.

Bag, S., Pretorius, J. H. C., Gupta, S., & Dwivedi, Y. K. (2020). Role of institutional pressures and resources in the adoption of big data analytics powered artificial intelligence, sustainable manufacturing practices, and circular economy capabilities. *Ecological Forecasting and Social Change*.

Basukie, J., Wang, Y., & Li, S. (2020). Big data governance and algorithmic management in sharing economy platforms: A case of ridesharing in emerging markets. *Technological Forecasting and Social Change*, *161*, 120310. https://doi.org/10.1016/j.techfore

Benbrahim, H., Hachimi, H., & Amine, A. (2020). Deep transfer learning with Apache spark to detect covid-19 in chest x-ray images. *Romanian Journal of Information Science and Technology*, *23*(S, SI), S117-S129.

Blazquez, D., & Domenech, J. (2018). Big data sources and methods for social and economic analyses.Technological Forecasting and Social Change. *Technological Forecasting and Social Change*, *130*, 99-113. https://doi.org/10.1016/j.techfore.2017.07.027

Brown-Liburd, H., H. Issa, & D. Lombardi. (2015). Behavioral implications of big data's impact on

audit judgment and decision making and future research directions. *Accounting Horizons*, *29*(1), 451-468.

Busayo, T. O., Igbekoyi, O. E., Oluwagbade, O. I., Adewara, Y. M., Dagunduro, M. E., & Boluwaji, Y. D. (2023). Artificial intelligence and service quality of telecommunication firms in Nigeria. *Journal of Economics, Finance and Accounting Studies*, *5*(3), 203-214.

Chen, D. Q., Preston, D. S., & Swink, M. (2016). How the use of big data analytics affects value creation in supply chain management. *Journal of Management Information Systems, 32*.

Christensen, C. M. (1997). The innovators' dilemma: When new technologies cause great firms to fail. *Harvard Business School*.

Christensen, C. M., & Bower, J. L. (1996). Customer power, strategic investment, and the failure of leading firms. *Strategic Management Journal*, 197-218.

Dagunduro, M. E., Falana, G. A., Adewara, Y. M. & Busayo, T. O. (2023). Application of artificial intelligence and audit quality in Nigeria. *Humanities, Management, Arts, Education & the Social Sciences Journal*, *11*(1), 39-56. https://dx.doi.org/10.22624/AIMS/HUMANITIES/V11N1P4

Egiyi, M. A., & Udeh, S. N. (2020). Overview of cloud accounting in Nigeria. *International Journal of Academic Management Science Research (IJAMSR)*, *4*(6), 81-88.

Elgendy, N., & Elragal, A. (2014). Big data analytics: a literature review paper, Computer Science. *Springer International Publishing*, 214-227.

Ezekiel. O. (2018). Impact of disruptive technology on the performance of insurance firms in Kenya. *Journal of Strategic Management*, *3*(1), 72-82.

Falana, G. A., Igbekoyi, O. E., & Dagunduro, M. E. (2023). Effect of big data on accounting information quality in selected firms in Nigeria. *International Journal of Research and Innovation in Social Science*, *7*(3), 789-806. https://doi.org/10.47772/IJRISS

Feng, H. (2021). Application of big data blockchain technology in financial support of real economy. *Journal of Physics: Conference Series*, *3*(4), 171-178.

Ghani, N. A., Hamid, S., Targio Hashem, I. A., & Ahmed, E. (2019). Social media big data analytics: A survey. *Computers in Human Behavior*, *101*, 417-428.

Hassan, K. (2022). Assessment in the age of artificial intelligence: Accounting and auditing. *Journal of Computers and Education: Artificial Intelligence*, *3*(1), 20-33.

Ibrahim, S., Yusoff, W. S., & Rashid, M. A. (2021). A systematic review of disruptive technology within accounting and accounting sector. *AIP Conference Proceedings 2339*. https://doi.org/10.1063/5.0044297

Innocent, O. C. (2016). The use of Cloud computing and accounting packages for corporate business transactions in Nigeria: An explorative study. *Journal of Business and Management*, *18*(7), 113-117.

Iqbal F., More, B., Mahmud, S., & Yousuf, U. (2020). Big data analytics: Computational intelligence techniques and application areas. *Technological Forecasting and Social Change*, *153*, 119253.

Issa, H., Sun, T., & Vasarhelyi, M. A. (2016). Research ideas for artificial intelligence in auditing: The formalization of audit and workforce supplementation. *Journal of Emerging Technologies in Accounting*, *13*(2), 1-20. https://doi.org/10.2308/jeta-10511

Jia, Z. (2020). The impact of the arrival of the big data era on accounting work. *In IOP Conference Series: Materials Science and Engineering 768* (5, p. 052092). IOP Publishing.

Jiapang, W., Feng, X., & Cheng, L. (2019). Application of internet of things and blockchain technologies to improve accounting information quality. *Open Access Journal*, *11*(2), 24-39.

Komsuoglu, Y. N., & Boydas, H. (2019). The rise of the internet of things (IoT) and its applications in finance and accounting. *Press Academia Procedia* (PAP), 10(1)s, 32-35.

Kriangsak, C., & krittaya, S. (2021). The development of digital accounting systems on cloud computing. *Journal of Computer Science*, *17*(10), 889-904.

Kroon, N., Alves, M.d. C., & Martins, O. (2021). The impacts of emerging technologies on accountants' role and skills: Connecting to open innovation – A systematic literature. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 163-179. https://doi.org/10.3390/joitmc7030163

Kumar., R., & Zahid. (2017). Internet of things: Possibilities and challenges. *International Journal of Systems and Service-Oriented Engineering*, *7*, 32-35. https://doi.org/10.4018/IJSSOE.2017070103

Meltem, A., & Recep, Y. (2021). Adoption of cloud-based accounting practices in Turkey: An Empirical Study, *International Journal of Public Administration*. https://doi.org/10.1080/01900692.2021.1894576

Ndubuaku, M., & Okereafor, D. (2015). State of internet of things deployment in Africa and its future: The Nigerian scenario. *The African Journal of Information and Communication*, *15*, 1-7.

Nwakoby, N. P., Raymond, A. E., & Okoye, J. F. N. (2017). Information communication technology (ICT): A panacea for accounting practice in Nigeria. *European Journal of Business, Economics, and Accountancy, 3*(7), 24-32.

Odoh, L. C., Silas, C. E., Ugwuanyi, U. B., & Chukwuani, N. V. (2018). Effect of artificial intelligence on the performance of accounting operations among accounting firms in South East Nigeria. *Asian Journal of Economics, Business, and Accounting*, *7*(2), 1-11.

Okafor, V. I., & Egiyi, M. A. (2021). Impacts of information communication technology on accounting practice in Nigeria. *Contemporary Journal of Management*, 6(5), 79-95.

Olugbohungbe, R., & Awodele, O. (2021). Big data analytics capability and firm competitive advantage: Evidence from quoted money deposit banks in Nigeria. *Global Scientific Journal*, *5*(9), 1015-1031.

Owonifari, V. O., Igbekoyi, O. E., Awotomilusi, N. S., & Dagunduro, M. E. (2023). Evaluation of artificial intelligence and efficacy of audit practice in Nigeria. *Asian Journal of Economics, Business and Accounting*, *23*(16), 1-14.

Potekhina, A., & Riumkin, C. (2017). Blockchain a new accounting paradigm: Implications for credit risk management. *Umea School of Business and Economics*.

Terry, O. (2020). Disruption innovation and theory. Journal of Service Science and Management, *13*, 449-458.

Warren, J. D., Moffitt, K. C., & Byrnes, P. (2015). How big data will change accounting? *Accounting Horizons*, *29*(2), 397-407.

Wu, J., Xiong, F., & Li, C. (2017). Application of the internet of things and blockchain technologies to improve accounting information quality. *ICEE ACCESS*, *3*(1), 66-79.

Yoon, K., L. Hoogduin, & Zhang, L. (2015). Big data as complementary audit evidence. *Accounting Horizons*, *29*(2), 431-438.

Younis, N. M. M. (2020). The impact of big data analytics on improving financial reporting quality. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *4*(03).

Zaki, N. D., Hashim, N. Y., Mohialden, Y. M., Mohammed, M. A., Sutikno, T., & Ali, A. H. (2020). A real-time big data sentiment analysis for Iraqi tweets using spark streaming. *Bulletin of Electrical Engineering and Informatics*, *9*(4), 1411-1419.