

ISIR Journal of Business and Management Studies (ISIRJBMS)
ISSN: 3048-7684 (Online)
Frequency: Bimonthly
Published By ISIR Publisher
Journal Homepage Link- https://isirpublisher.com/index.php/isirjbms

ARTIFICIAL INTELLIGENCE (AI), BIG-DATA ANALYTICS, AND THE VALUE RELEVANCE OF ACCOUNTING INFORMATION

By

[1]OKORO GodsdayEdesiri PhD; [2]OWAMAH Ifeyinwa Victoria; [2]OBIEKEA Precious Ogechukwuka

[1,2&3]Department of Accounting, Faculty of Management Sciences, Delta State University Abraka, Nigeria

Article History

Received:05/03/2025
Accepted:13/04/2025
Published: 15/05/2025

Vol – 2 Issue – 3

PP: -01-04

Abstract

Value-relevance of accounting information studies are more often than not hinged on the idea that stakeholders adjust their actions and respond swiftly by changing the value of shares when they get pertinent information. The study investigates the relationship between artificial intelligence, big-data analytics and value-relevance of accounting information. Questionnaire was the main instrument of data collection, which was administered to 188 respondents. Data obtained were analyzed using descriptive, diagnostic and inferential statistical techniques. The multiple regression results revealed that artificial intelligence and big-data analytic can lead to increase in value-relevance of accounting information; thus, artificial intelligence and big-data analytics could predict financial information. The study contributes to knowledge in accounting and management in general by establishing that when artificial intelligence and big-data analytics are employed by firms, it could lead to increase in the value-relevance of accounting information. On the basis of this, artificial intelligence and big-data analytics could allow appreciative, better and robust understanding of financial information and as a way of predicting financial information; hence artificial intelligence and big-data analytics usage should be encouraged.

Keywords: *Artificial intelligence; Value-relevance of accounting information; Technological infrastructures; Big-data analytics*

JEL Classification: *M41; M40*

Acknowledgement: *We wish to acknowledge the Tertiary Education Trust Fund (TETFUND) for the Research Grant given to the authors (Reference No. TETF/DR&D/UNI/ABRAKA/IBR/2021/VOL.I).*

1. INTRODUCTION

In recent times, numerous studies have been done about the threats posed by technology to businesses, the accountancy profession and other traditional professional roles, with some frightening affirmations that countless numbers of business operations, accounting practice and professional roles are set to be substituted by dizzying arrays of digital technologies; the veracity is much more nuanced. Arowoogun, et al (2024) and Chowdhury (2024) posited that numerous aspects of business operations and accountancy practices will be subject to major changes in the up-coming years in order to keep up with a broader digital transformation.

Accordingly, we are less doubtful that integrating technological innovation like artificial intelligence (AI), may have astute impact on social processes and institutional arrangements of those working in an organization and in any given profession (Sivarajah, Kumar, Kumar, Chatterjee& Li, 2024; Slezák,, 2023). Notably, while businesses in most developed countries are increasingly using AI and big-data analytics (BDA) to create societal and economic values, businesses in most developing countries are belligerent to adopt these in making the accounting information value-relevant (Srivatava&Muharam, 2022). Besides, while AI and BDA are inimitable tools to businesses, accounting researchers and accountancy profession, it appears that businesses in particular are yet to wholly adopt these technologies in Nigeria and Africa in general.

Sukhari, Coetsee and Ade-Ibijola (2023) posited that the inability of businesses to adopt AI and BDA has been stalled as a result of several internalities like literacy level, costs of implementation/use of AI and BDA and poor technological

*Corresponding Author: **OKORO GodsdayEdesiri PhD.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

infrastructures. According to Farooq (2023); Imasuen and Okoro (2024), the internalities have further hindered economic performance and VRAI. Moreover, there are Spartan studies to the researchers' knowledge that have been carried out in Nigeria, unfolding the extent of AI and BDA adoption by businesses and how they can be used in making accounting information value-relevant to stakeholders.

2. THEORETICAL LITERATURE

Value-relevance of accounting information (VRAI) studies is frequently based on the idea that stakeholders adjust their actions and respond by changing the value of their shares when they get pertinent information (Uwalomwa, et al 2017). Accordingly, data is seen value-relevant if it corresponds to data revealed in share prices and financial statements (Beave, 2002 cited in Alnodel, 2018; Obasan&Ajibade, 2020). Also, VRAI research identifies two (2) measures: intrinsic and extrinsic factors, as mentioned by Imhanzenobe (2022) and Barth, Landsman, and Lang (2018).

Share price is an example of an intrinsic variable, whereas accounting or financial information revealed in a company's financial statements is an example of an extrinsic variable (Muhammed, 2017; Ezejiofor, 2018; Ali, 2018; Olawale& Hassan, 2021; Amaka, Callista& Maria, 2022). As a result, scholarly literature has extensively established the link between AI, BDA, and VRAI. Since accounting depends on the recording, categorisation, measurement, analysis, processing, and reporting of financial data to interested parties; it makes sense that accounting professionals would be crucial to the development of AI and BDA. This is why Sukhari et al. (2023) and Srivatava and Muharam (2022) emphasise the importance of AI and BDA in the accounting and finance domains.

According to the Chartered Institute of Management Accountants (CIMA, 2022), AI enables machines to think, learn, and solve important problems similarly to human brains. As a result, AI systems can carry out essential activities by imitating human intelligence. In order to reap the benefits of artificial intelligence, numerous companies worldwide have embraced and integrated AI into their accounting operations, analysis, and processing. For example, according to a 2018 Software Vendor Sage survey of 3,000 accounting professionals, 55% of professional accountants thought that using AI would improve accounting and business activities, while 66% thought that companies would invest in AI to automate time-consuming and repetitive accounting tasks.

BDA is the process of using sophisticated algorithms to extract useful and constructive information from large amounts of data. Thus, BDA makes it easier to gather, process, and store data for better managerial decision-making and efficient information distribution (Sivarajah, et al, 2024). Financial and non-financial data are typically gathered, processed, stored, and shared by organisations as a result of their continuous operations or as a result of client interaction (Arowoogun, et al 2024). In addition, digital technologies have transformed the conventional approach to data collection by enabling new data sources like cloud-based infrastructures, internet-of-things, mobile connectivity, online platforms, real-time interactive dashboards, applications, and software.

3. METHODOLOGY

In order to gather quantitative data on the degree to which adoption of AI and BDA interact with the value-relevance of accounting information (VRAI), this study employed a cross-sectional survey. The ability of cross-sectional survey design to offer organised and effective methods for collecting data on the link between the independent and dependent variables is what ultimately led to its selection. Sample 188 respondents were obtained and instrument of the research was based on a 4-point scale from strongly agree and strong disagree. Models 1-2 shows the relationship between AI, BDA and VRA

$$VRA = f(AI, BDA,) \quad \text{eq. 1}$$

$$VRA_i = \delta_0 + \delta_1 AI_i + \delta_2 BDA_i + u_i \quad \text{eq. 2}$$

VRA represents value-relevance of accounting information; AI denotes artificial intelligence; BDA connotes big-data analytics,;$u_i$represents error term; δ represents regression intercept; δ_1-δ_2 are the coefficients of the independent variables. Data obtained were analyzed using descriptive regression diagnostic and inferential statistical techniques. The statistical analysis was carried out using STATA 13.0.

4. RESULTS

Table 1: Summary of Descriptive Statistics

Parameters	VRA	AI	BDA
Mean Value	2.8100	2.6640	2.6701
Skewness Value	0.0348	0.0326	0.5647
Kurtosis Value	2.5427	2.8240	2.0474

Source: Compiled by the Authors (2025)

Table 1 revealed that the mean value for VRA, AI and BDA were above 4-rating scale of 2.50; this indicates that the respondents support the views that A and BDA could result to increase in value-relevance of accounting information. The kurtosis value suggests that BDA had the smallest kurtosis while AI had the greatest kurtosis. More so, the variables of the study had kurtosis scores in their tails since none of the kurtosis value were distanced from the mean value. Furthermore, the skewness result indicates that VRAI, AI and BDA satisfy the normality condition.

Table 2: Pearson Correlation

Parameters	VRA	AI	BDA
VRA	1.0000		
AI	0.2646	1.0000	
BDA	0.0686	0.0485	1.0000

Source: Compiled by the Authors (2025)

*Corresponding Author: **OKORO GodsdayEdesiri PhD.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Table 2 revealed that the measures of the independent variables were positively linked with the dependent variable (VRA); hence, there is a positive link between AI, BDA, and VRA. This further suggests that when firms use AI, and BDA, it would positively lead to increased value-relevance of accounting information.

Table 3: Variance Inflation Factor (VIF)

Parameters	VIF	1/VIF
AI	1.38	0.7246
BDA	1.88	0.5319
Mean VIF	1.63	

Source: Compiled by the Authors (2025)

In Table 3, the mean VIF is 1.63 which is not greater than the accepted mean VIF of 10; this clearly indicates the model of VRA, BDA and AI do not show presence of multi-collinearity and that most likely, the results could be relied upon.

Table 4: Breusch-Pagan/Cook-Weisberg Test

Chi2(1)	=	25.122
Prob. > Chi2	=	0.0000

Source: Compiled by the Authors (2025)

Table 4 revealed that the result is statistically significant at 5%; this clearly suggests that there is the absence of heteroskedasticity in the model of VRA, BDA and AI and that the variables of the study are homoskedastic.

Table 5: Multiple Regression Result

Parameters	Predictor(s)	t-value(s)
R^2	0.555	AI = 4.01
Adjusted R^2	0.501	
F-Value	18.22	BDA = 6.01
F-Probability	0.000	

Source: Compiled by the Authors (2025)

In Table 5, the multiple regression results revealed that R^2 is0.555; this indicates that AI and BDA explained about 56% of the systematic variation in VRA. Thus, the model showed a good fit to the dataset. F-value is 18.22; this indicates that AI and BDA jointly significantly affect VRA. Furthermore, the t-value suggests that AI and BDA positively significantly affect VRA and this result agrees in part with those of Chu and Yong (2021); Leitner-Hanetseder and Lehner (2022); Farooq (2023) that AI and BDA can contribute to increase in the value-relevance of accounting information.

CONCLUSION AND RECOMMENDATIONS

The study investigates the extents to which AI and BDA influence the value-relevance of accounting information. From the results, the study concludes that AI and BDA can lead to increase in the value-relevance of accounting information. Thus, AI and BDA could predict financial information of firms. The study had its limitation in area of only x-raying the views of academics on how AI and BDA predict the value-relevance of accounting information; this limitation further creates future research lacuna/gap on AI, BDA and the value-relevance of accounting information

Notwithstanding of this, the study contributes to knowledge in accounting and management in general by establishing that when AI and BDA are used, it could result to increase in the value-relevance of accounting information. Consequent upon the above, AI and BDA could allow better understanding and a way of predicting financial information of firms; hence it usage should be encouraged.

Acknowledgements

Authors have made concerted efforts in this scientific paper; however, it would not have been possible without the strong support from TETFUND. Hence, authors wish to sincerely acknowledge TETFUND for providing the Research Grant required for the publishing of this scientific research. We are indeed grateful!

REFERENCES

1. Ali, A.A. (2018). The impact of IFRS adoption on the value relevance of accounting information: Evidence from the Insurance Sector. *International Journal of Business and Management*, *13*(4), 138-148.
2. Alnodel, A.A. (2018). The impact of IFRS adoption on the value relevance of accounting information: Evidence from the insurance sector. *International Journal of Business and Management*, *13*(4), 138-148.
3. Amaka E.A, Callista U.U. & Maria N.E (2022). Effect of IFRS on the value relevance of accounting information in the Nigerian stock market. *Social Sciences and Education Research Review*, 9(1), 1-12
4. Arowoogun, J.O., Babawarun, O., Chidi, R., Adeniyi, A.O. &Okolo, C.A. (2024). A comprehensive review of data analytics in healthcare management: Leveraging big data for decision-making. *World Journal of Advanced Research and Reviews*, *21*(2), 1810-1821
5. Barth, M., Landsman, W. & Lang, M. (2018). International Accounting Standards and accounting quality. *Journal of Accounting Research*, *46*, 467-98.
6. Chartered Institute of Management Accountants [CIMA]. (2022). *What big data and AI mean for the finance professional*. Available online at https://www.cimaglobal .com/CGMA-Store/Finance-Futurist-Blogs/Blog-What-BigData-and-AI-mean-for-the-Finance-Professional/ [Accessed 1 January, 2025]
7. Chowdhury, R.H. (2024). Big data analytics in the field of multifaceted analyses: A study on health

*Corresponding Author: **OKORO GodsdayEdesiri PhD.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

care management. *World Journal of Advanced Research and Reviews, 22*(03), 2165–2172

8. Chu, M.K. & Yong, K.O. (2021). Big data analytics for business intelligence in accounting and audit. *Open Journal of Social Sciences, 9,* 42-52. Doi.org/10.4236/jss.2021.99004
9. Ezejiofor, R.A. (2018). Effect of IFRS on value relevance of accounting information: Evidence from quoted manufacturing firms in Nigeria. *International Journal of Trend in Scientific Research and Development, 2*(5), 2255-2291.
10. Farooq, A. (2023). Data analytics impacts in the field of accounting. *World Journal of Advanced Research and Reviews, 18*(2), 946-951. Doi: https://doi.org/10.30574/ wjarr.2023.18.2.0863
11. Imasuen, F.O. &Okoro, G.E. (2024). Directors' observable characteristics and market-level financial performance: Evidence from Nigeria and South Africa. *Revista de Gestao Social Ambiental, 18*(1), 1-18
12. Imhanzenobe, J. (2022). Value relevance and changes in accounting standards: A review of the IFRS adoption literature. *Cogent Business & Management, 9*(1), 1-6. Doi/full/1 0.1080/23311975.2022.2039057
13. Leitner-Hanetseder, S. &Lehner, O.M. (2022). AI-powered information and Big Data: current regulations and ways forward in IFRS reporting. *JAAR, 24*(2), 282-298
14. Muhammed, A.C. (2017). IFRS adoption and value relevance of accounting information: A study of selected Insurance firms in Nigeria. *European Research Studies, 1*(11), 1-29.
15. Obasan S.A. &Ajibade G. (2020). Corporate governance and the value relevance of earnings. *Himalayan Journal of Economics and Business Management, 3*(5), 55-63.
16. Olawale, O.I. & Hassan, S.U. (2021). IFRS adoption and value relevance of financial information of listed deposit money banks in Nigeria. *International Journal of Economics and Financial Issues, 2*(1), 1-21.
17. Sivarajah, U., Kumar, S., Kumar, V., Chatterjee, S. & Li, J. (2024). A study on big data analytics and innovation: From technological and business cycle perspectives. *Technological Forecasting & Social Change, 202,* 1-10
18. Slezák, I.J. (2023). Artificial intelligence, big-data, block-chain and cloud computing: Future accounting? *Business Trends, 13(*1), 16-33 Doi.org/10.24132/jbt.2023.13. 1.16_33
19. Srivatava, A. &Muharam, H. (2022). Value relevance of accounting information during IFRS convergence period: Comparative evidence between India and Indonesia. *Accounting Research Journal, 35*(2), 276-291.
20. Sukhari, A., Coetsee, D. & Ade-Ibijola, A. (2023). The value relevance of digitalization disclosure in integrated reports: A South African perspective. *The International Journal of Digital Accounting Research, 23,* 69-96. Doi:10.4192/1577-8517-v23_4
21. Uwalomwa, U., Olubukola, R.U., Moyosore, E.D., Jimoh, J. &Rehimetu, J. (2017). International financial reporting standard adoption and value relevance of accounting information in Nigeria. *International Journal of Economics and Financial Issues, 7*(3), 1-8.

*Corresponding Author: **OKORO GodsdayEdesiri PhD.**

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.