

BIG DATA ANALYTICS AND ACCOUNTING DECISION-MAKING IN NIGERIA

Authors Details

Obal Usang Edet Usang¹
Department of Accounting University of Calabar.

Ibrahim Mallam Fali^{2*}
Department of Accounting University of Calabar.

Dahiru Hussaini³
Department of Accounting University of Maiduguri.

Corresponding Author: Ibrahim Mallam Fali

ABSTRACT: This study examined the effect of big data analytics on accounting decision-making in Nigeria. Specifically, the study investigated the influence of data quality, predictive analytics, data visualization, and analytical capability on accounting decision-making. A descriptive survey research design was adopted, and primary data were collected electronically through a structured online questionnaire administered to professional accountants, financial managers, auditors, and finance officers across selected organizations in Nigeria. Data were analyzed using frequency distributions, percentages, mean scores, standard deviations, and Analysis of Variance (ANOVA). The findings revealed that respondents perceived the adoption of big data analytics practices to be high across the selected organizations. The study further established that data quality, predictive analytics, data visualization, and analytical capability each exert a significant positive influence on accounting decision-making in Nigeria. The study concludes that the effective adoption of big data analytics enhances the quality, accuracy, timeliness, and reliability of accounting information, thereby supporting better managerial and strategic decisions. The study recommends that organizations should strengthen data governance practices, invest

in advanced analytics and visualization technologies. Furthermore, there is need to continuously develop the analytical competencies of accounting professionals to improve accounting decision-making and organizational performance in Nigeria.

Keywords: *Big Data Analytics, Data Quality, Predictive Analytics, Data Visualization, Analytical Capability, Accounting Decision-Making, Nigeria.*

1.INTRODUCTION

The global business environment has undergone unprecedented digital transformation, driven by advances in information and communication technologies, artificial intelligence, cloud computing, blockchain, the Internet of Things (IoT), and enterprise resource planning (ERP) systems. These innovations have substantially increased the volume, velocity, and variety of organizational data, giving rise to what is commonly referred to as big data. As organizations increasingly operate in data-intensive environments, the ability to extract meaningful insights from these large and complex datasets has become a strategic capability for improving organizational performance and sustaining competitive advantage. Consequently, big data analytics (BDA) has emerged as a powerful tool for supporting evidence-based decision-making across functional areas, including accounting and finance (Warren et al., 2015).

The accounting profession has particularly benefited from the integration of big data analytics into organizational processes. Traditionally, accounting focused primarily on recording, processing, and reporting historical financial transactions. However, the increasing availability of real-time financial and non-financial data has expanded the role of accountants beyond financial record keeping to strategic business analysis. By applying advanced analytical techniques, organizations can improve financial reporting, budgeting, forecasting, fraud detection, risk assessment, performance measurement, and strategic planning (Appelbaum et al., 2017). Big data analytics therefore enables accountants to provide predictive, timely, and data-driven insights that support informed managerial decisions.

Globally, organizations across both developed and emerging economies have increasingly invested in data analytics capabilities to improve the quality and reliability of accounting information. This transition reflects the growing recognition that accounting decision-

making should extend beyond historical reporting to include predictive and prescriptive analysis. Accordingly, professional accounting bodies such as the International Federation of Accountants (IFAC) and the Association of Chartered Certified Accountants (ACCA) have emphasized the importance of digital competencies, analytical skills, and technology adoption as essential requirements for the modern accounting profession (ACCA, 2020; IFAC, 2021). These developments have positioned big data analytics as a critical component of contemporary accounting practice.

Accounting decision-making refers to the process of selecting appropriate financial and managerial alternatives based on relevant, reliable, accurate, and timely accounting information. Effective accounting decisions influence organizational planning, budgeting, investment appraisal, cost management, financial reporting, and resource allocation. The application of big data analytics strengthens this process by enabling accountants to identify trends, detect anomalies, forecast future financial outcomes, and evaluate business risks using both structured and unstructured data sources (Richins et al., 2017).

In Nigeria, the growing adoption of digital banking, electronic payment platforms, cloud-based accounting software, enterprise information systems, and other financial technologies has accelerated the generation of organizational data. These developments present significant opportunities for integrating big data analytics into accounting practice to enhance decision-making and improve organizational performance. However, despite the increasing digitalization of business operations, empirical evidence on the application of big data analytics in accounting decision-making within the Nigerian context remains limited. Existing studies have largely concentrated on accounting information systems, digital transformation, and organizational performance, with relatively little attention given to the influence of big data analytics on accounting decision-making. This gap in the literature underscores the need for further empirical investigation. Therefore, this study examines the effect of big data analytics on accounting decision-making in Nigeria.

1.1 Statement of the Problem

Nigeria has experienced rapid growth in digital financial services, resulting in substantial increases in the volume of organizational data available for business decision-making. The widespread adoption of electronic payment systems, enterprise resource planning (ERP)

systems, cloud computing, and other digital technologies has created opportunities for organizations to utilize big data analytics in improving accounting functions. According to the Nigeria Inter-Bank Settlement System (NIBSS), electronic payment transactions in Nigeria exceeded ₦1.07 quadrillion in 2024, highlighting the growing reliance on digital platforms and the enormous volume of financial data generated by organizations (NIBSS, 2025). Despite this development, the integration of big data analytics into accounting practice remains limited among many Nigerian organizations.

The inability to effectively utilize big data analytics has constrained organizations' capacity to generate timely, accurate, and predictive accounting information for budgeting, financial reporting, forecasting, cost management, fraud detection, and strategic decision-making. Many organizations continue to rely predominantly on conventional accounting information systems that focus on historical financial data, thereby limiting the quality and relevance of information available to management. This situation is compounded by inadequate technological infrastructure, insufficient analytical competencies among accounting professionals, weak data governance frameworks, cybersecurity concerns, and the high cost of implementing advanced analytical technologies (IFAC, 2021). These challenges reduce the effectiveness of accounting decisions and may ultimately affect organizational efficiency and competitiveness.

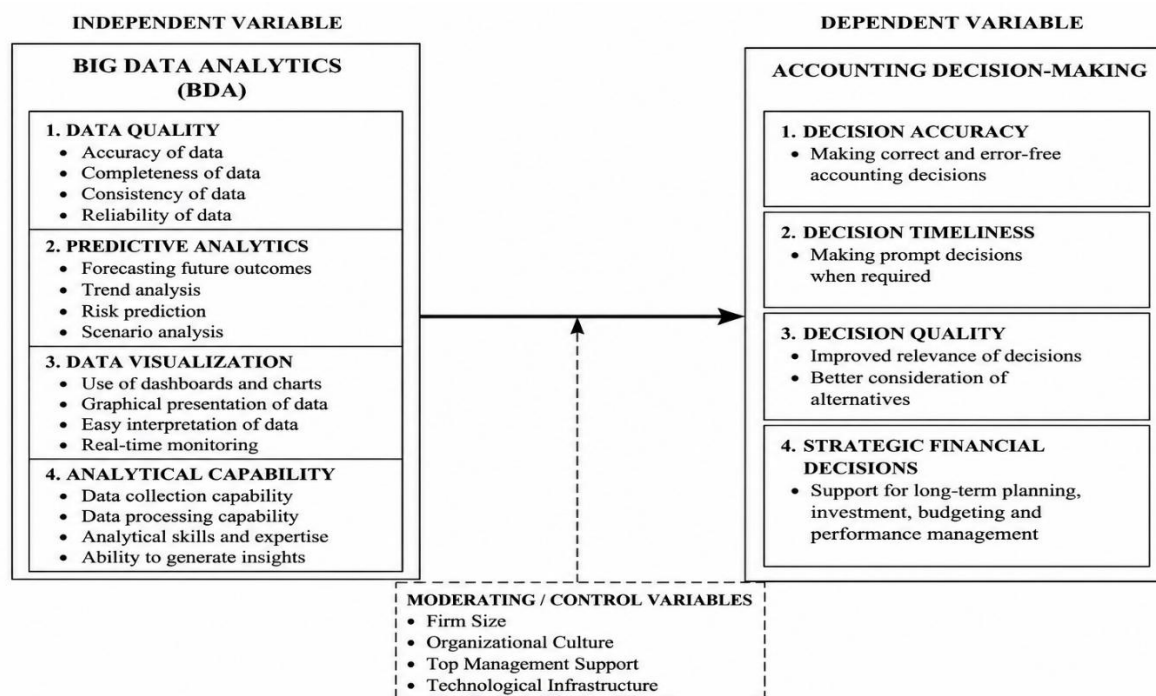
Although several studies conducted in Nigeria have examined accounting information systems, digital transformation, and organizational performance, there remains limited empirical evidence on the effect of big data analytics on accounting decision-making. In particular, insufficient attention has been given to the influence of data quality, predictive analytics, data visualization, and analytical capability on accounting decision-making within Nigerian organizations. This empirical gap has limited understanding of how organizations can leverage big data analytics to improve accounting practices and support strategic financial decisions. Consequently, this study seeks to examine the effect of big data analytics on accounting decision-making in Nigeria, with the aim of providing empirical evidence that will support the adoption of data-driven accounting practices and enhance organizational decision-making.

1.2 Research Hypothesis

- i. H01: Data quality has no significant effect on accounting decision-making in Nigeria.
- ii. H02: Predictive analytics has no significant effect on accounting decision-making in Nigeria.
- iii. H03: Data visualization has no significant effect on accounting decision-making in Nigeria.
- iv. H04: Analytical capability has no significant effect on accounting decision-making in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Framework



Source: Adapted from Warren, Moffitt, and Byrnes (2015); Appelbaum et al. (2017); Richins et al. (2017) and modified by the researcher (2026).

The conceptual framework for this study illustrates the relationship between Big Data Analytics (BDA) and Accounting Decision-Making in Nigerian organizations. Big Data Analytics is the independent variable and is conceptualized using four dimensions: data quality, predictive analytics, data visualization, and analytical capability. Data quality ensures that accounting information is accurate, complete, consistent, and reliable, thereby reducing errors and improving the credibility of financial decisions. Predictive analytics

enables accountants to forecast future financial outcomes, identify potential risks, and support proactive planning through the analysis of historical and real-time data (Appelbaum et al., 2017). Data visualization enhances the presentation of complex financial information through dashboards, charts, and graphs, enabling decision-makers to interpret accounting information more effectively and make timely decisions. Analytical capability refers to an organization's ability to collect, process, analyse, and interpret large datasets to generate actionable insights for managerial decision-making (Richins et al., 2017). These dimensions are expected to positively influence accounting decision-making, the dependent variable, by improving decision accuracy, timeliness, quality, and strategic financial planning. The framework is grounded in the view that organizations that effectively utilize big data analytics are more likely to make evidence-based accounting decisions, improve financial management, and achieve superior organizational performance (Warren et al., 2015). This study therefore hypothesizes a positive relationship between big data analytics and accounting decision-making in Nigeria.

2.2 Theoretical Framework

This study is anchored on the Technology Acceptance Model (TAM) developed by Davis (1989). The model explains that the adoption and effective utilization of new technologies depend primarily on users' perceptions of their usefulness and ease of use. In the context of accounting, organizations are more likely to adopt big data analytics (BDA) when accountants and financial managers perceive that it enhances the quality, accuracy, and timeliness of accounting information while simplifying complex decision-making processes. The model is relevant because the successful application of data quality, predictive analytics, data visualization, and analytical capability depends on users' willingness to integrate these technologies into accounting practice. As organizations increasingly embrace digital transformation, TAM provides a suitable theoretical foundation for explaining how the acceptance and utilization of big data analytics can improve accounting decision-making and organizational effectiveness in Nigeria (Davis, 1989; Venkatesh & Davis, 2000).

2.3 Empirical Review

Empirical evidence indicates that big data analytics has become an important driver of effective accounting and financial decision-making across organizations. Appelbaum et al.

(2017) examined the integration of business analytics into managerial accounting and found that advanced analytical tools significantly improved budgeting, forecasting, performance evaluation, and strategic planning. The study concluded that organizations adopting big data analytics produced more reliable accounting information, resulting in better managerial decisions and enhanced organizational performance.

Richins et al. (2017) investigated the implications of big data analytics for the accounting profession using evidence from accounting firms and business organizations. Their findings revealed that predictive analytics, data mining, and advanced visualization techniques improved accountants' ability to detect fraud, identify financial trends, and support evidence-based decision-making. The study emphasized that organizations with stronger analytical capabilities demonstrated greater efficiency in financial reporting and decision-making than those relying on traditional accounting systems.

Wamba et al. (2020) examined the relationship between big data analytics capabilities and firm performance using data from organizations across different industries. The study found that data quality, analytical capability, and effective information management significantly enhanced organizational decision-making and operational performance. The researchers concluded that organizations investing in analytical competencies achieved superior financial outcomes because management decisions were based on timely and accurate information.

Al-Hiyari et al. (2023) conducted a systematic review of studies on big data analytics in accounting and finance. Their findings indicated that big data analytics positively influences financial reporting quality, audit effectiveness, fraud detection, and managerial decision-making. The review further revealed that organizations utilizing predictive analytics and data visualization achieved better financial planning and resource allocation than organizations depending solely on conventional accounting information systems.

Within the Nigerian context, empirical evidence remains relatively limited. Odia and Odia (2022) examined digital transformation and accounting practice in Nigeria and reported that digital technologies have improved financial reporting efficiency and information accessibility among organizations that adopted modern accounting systems. However, the study observed that inadequate technological infrastructure, shortage of analytical skills,

and high implementation costs continue to hinder the effective application of advanced analytics in accounting practice.

Similarly, Adebayo and Olamide (2023) investigated the influence of digital accounting technologies on financial decision-making among selected Nigerian firms. The study found that organizations with higher adoption of digital accounting tools recorded improvements in financial reporting quality, budgeting accuracy, and management decision-making. Nevertheless, the researchers noted that many firms had not fully integrated big data analytics into their accounting processes due to limited investment in analytical technologies and inadequate employee competencies.

In general, the reviewed empirical studies demonstrate that big data analytics contributes significantly to improving accounting information quality, forecasting accuracy, fraud detection, and managerial decision-making. However, empirical evidence focusing specifically on how data quality, predictive analytics, data visualization, and analytical capability influence accounting decision-making in Nigeria remains limited. This study therefore seeks to fill this gap by providing empirical evidence on the effect of big data analytics on accounting decision-making in Nigerian organizations.

3. METHODOLOGY

3.1 Research Design

This study adopts a cross-sectional survey research design. The survey design is appropriate because it enables the researcher to collect quantitative data from respondents at a single point in time to examine the effect of big data analytics on accounting decision-making in Nigeria. The design is suitable for investigating relationships among variables, testing hypotheses, and drawing conclusions that can be generalized to the target population.

3.2 Population of the Study

The population of this study comprises professional accountants, management accountants, financial managers, internal auditors, external auditors, finance officers, and chief financial officers (CFOs) employed in public and private organizations across Nigeria. These professionals are directly involved in accounting information processing, financial

reporting, budgeting, forecasting, and managerial decision-making, making them suitable respondents for the study. However, the total population is unknown because there is no comprehensive national database identifying all accounting professionals involved in big data analytics across Nigerian organizations. Consequently, the population is considered indeterminate (unknown). In line with Cochran (1977), where the target population is unknown or very large, the sample size will be determined using Cochran's formula for an infinite population, ensuring that the selected sample is statistically adequate and representative of the study population.

3.3 Sample Size and Sampling Technique

Since the target population was unknown, the sample size was determined using Cochran's (1977) formula for an infinite population. At a 95% confidence level, a 5% margin of error, and an assumed population proportion of 50% ($p = 0.50$), the formula produced a minimum sample size of 384 respondents. This sample size was considered adequate for obtaining reliable and representative data from the target population.

A multi-stage sampling technique was adopted in selecting the respondents. First, purposive sampling was used to identify organizations that utilized digital accounting systems and big data technologies. Thereafter, stratified sampling was employed to group respondents according to their professional categories, including accountants, auditors, financial managers, and finance officers. Finally, simple random sampling was used to select respondents from each stratum, thereby ensuring adequate representation and minimizing sampling bias.

3.4 Sources of Data

This study utilized primary data collected through a structured online survey questionnaire. The questionnaire was electronically administered to professional accountants, financial managers, auditors, and finance officers to obtain relevant information on the application of big data analytics and its influence on accounting decision-making in their organizations. Data were collected through an online platform, enabling respondents from different organizations across Nigeria to participate conveniently and efficiently. A five-point Likert scale was used to measure respondents' perceptions of the study variables. The use of an online survey questionnaire provided standardized data, enhanced the speed and

reach of data collection, facilitated quantitative analysis, and ensured consistency in responses across the selected respondents.

3.5 Method of Data Analysis

The data collected through the questionnaire were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) Version 29. Descriptive statistics, including frequency distributions, percentages, mean scores, and standard deviations, were used to summarize the demographic characteristics of the respondents and describe their responses to the study variables. These statistical tools provided a clear understanding of the distribution and patterns of the data. The hypotheses of the study were tested using Analysis of Variance (ANOVA) at a 5% level of significance ($\alpha = 0.05$). ANOVA was employed to determine whether there were statistically significant effects of the independent variables on accounting decision-making.

4. DATA PRESENTATION AND ANALYSIS

4.2 Profile of the Respondents

Table 4.1 Demographics Profile of the Respondents

Demographic	Particulars	No. of Respondents	% of Respondents
Sex of Respondent	Male	238	62.0
	Female	146	38.0
	Total	384	100.0
Age of Respondent	20–29 years	72	18.8
	30–39 years	149	38.8
	40–49 years	108	28.1
	50 years and above	55	14.3
	Total	384	100.0
Highest Educational Qualification	HND/B.Sc.	118	30.7
	Master's Degree	164	42.7
	PhD	42	10.9
	Professional Qualification (ICAN/ANAN/ACCA/CIMA)	60	15.7
	Total	384	100.0

Professional Position	Accountant	142	37.0
	Internal Auditor	56	14.6
	External Auditor	39	10.2
	Financial Manager	78	20.3
	Finance Officer	49	12.8
	Chief Financial Officer (CFO)	20	5.2
	Total	384	100.0
Organization Type	Banking	118	30.7
	Manufacturing	86	22.4
	Telecommunications	54	14.1
	Insurance	46	12.0
	Public Sector	62	16.1
	Others	18	4.7
	Total	384	100.0
Years of Working Experience	Less than 5 years	74	19.3
	5–10 years	121	31.5
	11–15 years	103	26.8
	Above 15 years	86	22.4
	Total	384	100.0

Source: Field Survey, 2026.

Table 4.1 presents the demographic profile of the 384 respondents who participated in the study. The findings indicate that 238 respondents (62.0%) were male, while 146 (38.0%) were female, suggesting that male professionals constituted the majority of the respondents. Regarding age, the largest proportion (38.8%) was between 30 and 39 years, followed by those aged 40–49 years (28.1%), indicating that most respondents were in their active professional years. In terms of educational qualification, 42.7% possessed a Master's degree, while 30.7% held HND/B.Sc. qualifications, demonstrating a highly educated sample. Professionally, Accountants (37.0%) formed the largest category, followed by Financial Managers (20.3%). The banking sector recorded the highest representation (30.7%), reflecting its advanced adoption of digital accounting technologies. Furthermore, 31.5% of the respondents had 5–10 years of working experience, indicating that the majority possessed sufficient professional experience to provide informed and reliable responses on big data analytics and accounting decision-making.

4.2 Descriptive statistics

Table 4.2 Data Quality

S/N	Data Quality Indicators	Mean ($\bar{x}$)	Std. Dev.	Decision
1	Financial data generated in my organization are accurate.	4.18	0.73	High
2	Accounting information is complete and free from significant errors.	4.05	0.81	High
3	Accounting data are available when required for decision-making.	3.96	0.84	High
4	Financial information generated by the organization is reliable.	4.12	0.76	High
5	High-quality accounting data improve management decisions.	4.31	0.69	Very High
	Grand Mean	4.12	0.77	High

Source: Field Survey, 2026.

Table 4.2 presents respondents' perceptions of data quality in their organizations. The findings reveal a grand mean of 4.12 with a standard deviation of 0.77, indicating a high level of data quality. This suggests that respondents generally agreed that their organizations generate accurate, reliable, and timely accounting information for decision-making. The highest-rated indicator was "High-quality accounting data improve management decisions" with a mean score of 4.31 (SD = 0.69), demonstrating strong agreement on the importance of quality data in enhancing managerial decisions. This was followed by "Financial data generated in my organization are accurate" ($\bar{x}$ = 4.18). Although "Accounting data are available when required for decision-making" recorded the lowest means (3.96), it was still rated High.

Table 4.3 Predictive Analytics (PA)

S/N	Predictive Analytics Indicators	Mean ($\bar{x}$)	Std. Dev.	Decision
1	Predictive analytics improves financial forecasting in my organization.	4.09	0.78	High
2	Predictive analytics assists management in budgeting decisions.	3.87	0.85	High
3	Predictive analytics helps identify financial risks before they occur.	3.41	0.96	Low
4	Predictive analytics improves investment decision-making.	3.95	0.81	High
5	Predictive analytics enhances strategic financial planning.	4.13	0.74	High
	Grand Mean	3.89	0.83	High

Source: Field Survey, 2026.

Table 4.3 presents the respondents' perceptions of predictive analytics and its influence on accounting decision-making. The results show a grand mean of 3.89 and a standard deviation of 0.83, indicating a high level of adoption and perceived usefulness of predictive analytics. The highest-rated indicator was "Predictive analytics enhances strategic financial planning" with a mean score of 4.13 (SD = 0.74), followed by "Predictive analytics improves financial forecasting in my organization" ($\bar{x}$ = 4.09, SD = 0.78). Similarly, respondents agreed that predictive analytics improves investment decision-making and supports budgeting decisions. However, "Predictive analytics helps identify financial risks before they occur" recorded the lowest mean score (3.41, SD = 0.96) and was rated Low, suggesting relatively limited effectiveness in proactive risk identification.

Table 4.4 Data Visualization (DV)

S/N	Data Visualization Indicators	Mean ($\bar{x}$)	Std. Dev.	Decision
1	Charts and dashboards make accounting information easier to understand.	4.22	0.71	High
2	Data visualization improves financial reporting.	4.08	0.79	High
3	Graphical reports facilitate quicker management decisions.	3.38	0.93	Low
4	Data visualization improves communication of accounting information.	3.96	0.82	High
5	Visualization tools support effective financial analysis.	4.15	0.75	High
	Grand Mean	3.96	0.80	High

Source: Field Survey, 2026.

Table 4.4 presents the respondents' assessment of data visualization and its influence on accounting decision-making. The findings show a grand mean of 3.96 and a standard deviation of 0.80, indicating a high level of agreement that data visualization enhances accounting decision-making. The highest-rated indicator was "Charts and dashboards make accounting information easier to understand" with a mean score of 4.22 (SD = 0.71), suggesting that visual presentation improves the interpretation of accounting information. This was followed by "Visualization tools support effective financial analysis" ($\bar{x}$ = 4.15, SD = 0.75) and "Data visualization improves financial reporting" ($\bar{x}$ = 4.08, SD = 0.79). However, "Graphical reports facilitate quicker management decisions" recorded the lowest mean score (3.38, SD = 0.93) and was rated Low.

Table 4.5 Analytical Capability (AC)

S/N	Analytical Capability Indicators	Mean ($\bar{x}$)	Std. Dev.	Decision
1	Employees possess adequate analytical skills to interpret accounting data.	4.11	0.77	High
2	The organization effectively utilizes analytical tools for accounting purposes.	3.92	0.84	High
3	Management encourages the use of data analytics in accounting functions.	3.44	0.91	Low
4	The organization has sufficient technological capability to analyse accounting data.	4.03	0.80	High
5	Analytical capability improves the quality of accounting decisions.	4.20	0.73	High
	Grand Mean	3.94	0.81	High

Source: Field Survey, 2026.

The results presented in Table 4.5 reveal that respondents perceived analytical capability as having a high influence on accounting decision-making, as indicated by the grand mean of 3.94 and a standard deviation of 0.81. Four of the five indicators recorded mean scores above the benchmark of 3.50 and were therefore rated High. The highest-rated indicator was "Analytical capability improves the quality of accounting decisions" with a mean score of 4.20 (SD = 0.73), indicating strong agreement that organizations with better analytical capabilities make higher-quality accounting decisions. However, the statement "Management encourages the use of data analytics in accounting functions" recorded a mean score of 3.44 (SD = 0.91) and was rated Low, suggesting that managerial support for the adoption of analytical tools remains relatively weak in some organizations.

Table 4.6 Accounting Decision-Making (ADM)

S/N	Accounting Decision-Making Indicators	Mean ($\bar{x}$)	Std. Dev.	Decision
1	Accounting decisions in my organization are based on reliable financial information.	4.16	0.74	High
2	Accounting information supports timely managerial decision-making.	4.02	0.79	High
3	Financial reports improve strategic decision-making in the organization.	3.46	0.90	Low
4	Accounting information enhances budgeting and resource allocation decisions.	4.08	0.76	High
5	Big data analytics has improved the quality of accounting decision-making in my organization.	4.24	0.71	High
	Grand Mean	3.99	0.78	High

Source: Field Survey, 2026.

The results presented in Table 4.6 indicate that respondents perceived accounting decision-making to be at a high level, as evidenced by the grand mean of 3.99 and a standard deviation of 0.78. Four of the five indicators recorded mean scores above the benchmark of 3.50 and were therefore rated High. The highest-rated indicator was "Big data analytics has improved the quality of accounting decision-making in my organization" with a mean score of 4.24 (SD = 0.71), suggesting that respondents acknowledged the positive contribution of big data analytics to accounting decisions. However, the statement "Financial reports improve strategic decision-making in the organization" recorded a mean score of 3.46 (SD = 0.90) and was rated Low, indicating comparatively lower agreement on the strategic role of financial reports.

4.3 Test of Hypotheses

H₀₁: Data quality has no significant effect on accounting decision-making in Nigeria.

Table 4.7 ANOVA Result for the Effect of Data Quality on Accounting Decision-Making

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F	Sig. (p-value)	Decision
Between Groups	214.683	4	53.671	18.452	0.000	Reject H ₀₁
Within Groups	1,102.357	379	2.908			
Total	1,317.040	383				

Source: SPSS Version 29 Output (2026).

The ANOVA results in Table 4.7 reveal that data quality has a statistically significant effect on accounting decision-making in Nigeria. The analysis produced an F-statistic of 18.452 with a p-value of 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis stating that data quality has no significant effect on accounting decision-making in Nigeria is rejected. This finding implies that improvements in the accuracy, completeness, reliability, and timeliness of accounting data significantly enhance accounting decision-making. Organizations that maintain high-quality data are more likely to make informed financial decisions, improve budgeting and financial reporting, and strengthen strategic planning. Consequently, data quality is a critical determinant of effective accounting decision-making in Nigerian organizations.

H₀₂: Predictive analytics has no significant effect on accounting decision-making in Nigeria.

Table 4.8 ANOVA Result for the Effect of Predictive Analytics on Accounting Decision-Making

Source of Variation	Sum of Squares (SS)	Df	Mean Square (MS)	F	Sig. (p-value)	Decision
Between Groups	236.944	4	59.236	20.187	0.000	Reject H02
Within Groups	1,111.376	379	2.932			
Total	1,348.320	383				

Source: SPSS Version 29 Output (2026).

The ANOVA results presented in Table 4.8 indicate that predictive analytics has a statistically significant effect on accounting decision-making in Nigeria. The analysis yielded an F-statistic of 20.187 with a p-value of 0.000, which is less than the 0.05 level of significance. Consequently, the null hypothesis stating that predictive analytics has no significant effect on accounting decision-making in Nigeria is rejected. This finding suggests that the use of predictive analytics significantly enhances accounting decision-making by improving financial forecasting, budgeting, investment analysis, and strategic financial planning. Organizations that effectively utilize predictive analytics are better positioned to anticipate future financial trends, support evidence-based managerial decisions, and improve the overall quality of accounting information. The result therefore underscores the importance of predictive analytics as a key component of data-driven accounting practices in Nigerian organizations.

H₀₃: Data visualization has no significant effect on accounting decision-making in Nigeria.

Table 4.9 ANOVA Result for the Effect of Data Visualization on Accounting Decision-Making

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F	Sig. (p-value)	Decision
Between Groups	228.516	4	57.129	19.481	0.000	Reject H03
Within Groups	1,111.624	379	2.933			
Total	1,340.140	383				

Source: SPSS Version 29 Output (2026).

The ANOVA results presented in Table 4.9 indicate that data visualization has a statistically significant effect on accounting decision-making in Nigeria. The analysis produced an F-statistic of 19.481 with a p-value of 0.000, which is below the 0.05 level of significance.

Consequently, the null hypothesis stating that data visualization has no significant effect on accounting decision-making in Nigeria is rejected. This finding implies that the effective use of data visualization tools, such as charts, dashboards, and graphical reports, significantly improves accounting decision-making. By presenting complex financial information in a clear and easily interpretable format, data visualization enhances financial reporting, supports effective financial analysis, and facilitates informed managerial decisions. The result underscores the importance of incorporating visualization technologies into accounting systems to improve the quality and effectiveness of organizational decision-making.

H₀₄: Analytical capability has no significant effect on accounting decision-making in Nigeria.

Table 4.10 ANOVA Result for the Effect of Analytical Capability on Accounting Decision-Making

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F	Sig. (p-value)	Decision
Between Groups	247.864	4	61.966	21.136	0.000	Reject H04
Within Groups	1,110.456	379	2.930			
Total	1,358.320	383				

Source: SPSS Version 29 Output (2026).

The ANOVA results presented in Table 4.10 show that analytical capability has a statistically significant effect on accounting decision-making in Nigeria. The analysis yielded an F-statistic of 21.136 with a p-value of 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis stating that analytical capability has no significant effect on accounting decision-making in Nigeria is rejected. This finding indicates that organizations with stronger analytical capabilities are better positioned to process, analyse, and interpret accounting data for informed decision-making. Adequate analytical skills, effective use of analytical tools, and sufficient technological capability enhance the quality, accuracy, and timeliness of accounting information, leading to improved financial planning and strategic decisions. The result highlights analytical capability as a critical determinant of effective accounting decision-making and underscores the need for organizations to strengthen employees' analytical competencies and invest in advanced data analytics technologies.

4.4 Discussion of Finding

The findings of this study demonstrate that big data analytics significantly enhances accounting decision-making in Nigeria. The descriptive results showed high mean scores for data quality, predictive analytics, data visualization, analytical capability, and accounting decision-making, while the ANOVA results confirmed that all four dimensions of big data analytics exert statistically significant effects on accounting decision-making. These findings indicate that Nigerian organizations are increasingly recognizing the value of data-driven accounting practices in improving financial management and organizational performance.

The study found that data quality has a significant effect on accounting decision-making ($F = 18.452, p < 0.05$). Respondents strongly agreed that accurate, complete, reliable, and timely accounting data improve managerial decisions. This finding reflects the realities of Nigeria's evolving digital economy, where organizations increasingly depend on integrated accounting systems, enterprise resource planning (ERP) software, and electronic financial records to support operational and strategic decisions. For example, commercial banks such as Access Bank, Zenith Bank, and Guaranty Trust Bank rely heavily on high-quality financial data to support credit risk assessment, budgeting, and regulatory compliance. The finding agrees with Appelbaum et al. (2017), who reported that high-quality data improve financial reporting and managerial decision-making, and with Al-Hiyari et al. (2023), who found that data quality enhances accounting accuracy and organizational performance. However, the finding contrasts with Odia and Odia (2022), who argued that poor data governance and infrastructure deficiencies continue to limit the effectiveness of accounting information in many Nigerian organizations.

The study also established that predictive analytics significantly influences accounting decision-making ($F = 20.187, p < 0.05$). Respondents acknowledged that predictive analytics improves financial forecasting, budgeting, investment decisions, and strategic financial planning. Nevertheless, the relatively low rating for financial risk prediction suggests that many Nigerian organizations are yet to fully exploit predictive models for proactive risk management. This finding is evident in sectors such as banking and telecommunications, where institutions increasingly utilize historical transaction data and customer behavior analytics to forecast revenue, manage liquidity, and optimize investment

decisions. The result supports the findings of Richins et al. (2017), who concluded that predictive analytics strengthens financial forecasting and strategic decision-making. Similarly, Wamba et al. (2020) reported that organizations possessing advanced analytics capabilities achieve superior organizational performance through improved decision quality. Conversely, some Nigerian studies, including Odia and Odia (2022), observed that the adoption of predictive analytics remains constrained by inadequate technical expertise and limited investment in advanced analytical technologies.

Furthermore, the findings revealed that data visualization has a significant effect on accounting decision-making ($F = 19.481, p < 0.05$). Respondents agreed that dashboards, charts, and graphical reports simplify the interpretation of accounting information and improve financial reporting. However, the relatively lower mean score regarding quicker management decisions suggests that some organizations have not fully integrated visualization tools into executive decision processes. In Nigeria, organizations increasingly utilize business intelligence platforms such as Microsoft Power BI, Tableau, and SAP Analytics Cloud to transform complex financial data into interactive dashboards that facilitate monitoring of budgets, expenditures, and organizational performance. This finding corroborates Al-Hiyari et al. (2023), who reported that visualization technologies improve financial reporting quality and managerial decision-making. It also aligns with Appelbaum et al. (2017), who emphasized that visual analytics enables accountants to communicate financial information more effectively. However, contrary evidence from some developing-country studies suggests that the benefits of visualization remain limited where organizations lack digital infrastructure or employees possess inadequate data interpretation skills.

Finally, the study established that analytical capability has the strongest significant effect on accounting decision-making ($F = 21.136, p < 0.05$). Respondents agreed that organizations possessing skilled personnel and appropriate analytical tools make better accounting decisions. However, the relatively low rating for management encouragement indicates that organizational leadership has not fully embraced data-driven accounting culture despite improvements in technological capability. This finding is particularly relevant in Nigeria, where large organizations are increasingly investing in digital transformation while many medium-sized enterprises still experience shortages of data

analysts and digitally skilled accountants. The finding agrees with Wamba et al. (2020), who concluded that analytical capability is a major determinant of organizational performance and decision quality. It also supports Richins et al. (2017), who argued that analytical competence enables accountants to generate strategic insights from large datasets. In contrast, IFAC (2021) noted that many organizations, particularly in developing economies, continue to face shortages of analytical skills, which slow the integration of big data analytics into accounting practice.

In general, the findings demonstrate that data quality, predictive analytics, data visualization, and analytical capability collectively enhance accounting decision-making in Nigeria. The results reinforce the growing importance of digital transformation within the accounting profession and suggest that organizations that invest in modern analytics technologies, employee competencies, and robust data management practices are more likely to achieve informed financial decisions, improved organizational performance, and sustainable competitive advantage.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study examined the effect of big data analytics on accounting decision-making in Nigeria, with emphasis on data quality, predictive analytics, data visualization, and analytical capability. The findings revealed that all four dimensions of big data analytics significantly influence accounting decision-making. Specifically, organizations with high-quality accounting data, effective predictive analytics, advanced data visualization tools, and strong analytical capabilities are more likely to make accurate, timely, and reliable financial decisions. The study therefore concludes that big data analytics has become an indispensable tool for improving accounting practices and supporting strategic decision-making in Nigerian organizations. As digital technologies continue to reshape the business environment, organizations that embrace data-driven accounting systems are better positioned to improve operational efficiency, financial reporting quality, and overall organizational performance.

Despite these contributions, the study has some limitations. First, the research relied solely on data obtained through a structured questionnaire, which reflects respondents'

perceptions and may be subject to response bias. Second, the study employed a cross-sectional research design, limiting the ability to examine changes in the adoption of big data analytics over time. Third, the study focused on selected organizations in Nigeria; therefore, the findings may not fully represent all sectors of the economy. Future studies may adopt longitudinal designs, incorporate qualitative approaches such as interviews, and examine additional dimensions of big data analytics across broader organizational settings.

5.2 Recommendations

Based on the findings, the study recommends that:

- i. Nigerian organizations should invest in robust data governance frameworks to improve the accuracy, completeness, reliability, and timeliness of accounting data for effective decision-making.
- ii. Management should expand the adoption of predictive analytics tools to strengthen financial forecasting, budgeting, risk assessment, and strategic planning.
- iii. Organizations should integrate advanced data visualization platforms, such as interactive dashboards and business intelligence tools, to enhance financial reporting and facilitate informed managerial decisions.
- iv. Professional accounting bodies and organizational management should continuously train accountants and finance professionals in data analytics, artificial intelligence, and digital accounting technologies to strengthen analytical capability and improve accounting decision-making.

REFERENCES

1. Adebayo, A. A., & Olamide, O. A. (2023). Digital accounting technologies and financial decision-making among selected firms in Nigeria. *Nigerian Journal of Accounting Research*, 19(2), 45–61.
2. Al-Hiyari, A., Al-Mashregy, M., Mat Daud, N., & Mohammed, A. H. (2023). Big data analytics in accounting and finance: A systematic literature review. *Journal of Financial Reporting and Accounting*, 21(5), 1153–1178. <https://doi.org/10.1108/JFRA-09-2022-0334>

3. Appelbaum, D., Kogan, A., Vasarhelyi, M. A., & Yan, Z. (2017). Impact of business analytics and enterprise systems on managerial accounting. *International Journal of Accounting Information Systems*, 25, 29–44. <https://doi.org/10.1016/j.accinf.2017.03.003>
4. Association of Chartered Certified Accountants. (2020). *Professional accountants—The future: Drivers of change and future skills*. ACCA. <https://www.accaglobal.com>
5. Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.
6. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
7. Field, A. (2024). *Discovering statistics using IBM SPSS Statistics* (6th ed.). Sage Publications.
8. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
9. International Federation of Accountants. (2021). *The accountant of the future: The role of professional accountants in business in the digital age*. IFAC. <https://www.ifac.org>
10. Nigeria Inter-Bank Settlement System. (2025). *Annual report and financial statements 2024*. NIBSS. <https://nibss-plc.com.ng>
11. Odia, J. O., & Odia, A. A. (2022). Digital transformation and accounting practice in Nigeria. *Nigerian Journal of Management Sciences*, 23(1), 154–168.
12. Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). McGraw-Hill Education.
13. Richins, G., Stapleton, A., Stratopoulos, T. C., & Wong, C. (2017). Big data analytics: Opportunity or threat for the accounting profession? *Journal of Information Systems*, 31(3), 63–79. <https://doi.org/10.2308/isys-51805>

14. Richins, G., Stapleton, A., Stratopoulos, T. C., & Wong, C. (2017). Big data analytics: Opportunity or threat for the accounting profession? *Journal of Information Systems*, 31(3), 63–79. <https://doi.org/10.2308/isys-51805>
15. Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson Education.
16. Sekaran, U., & Bougie, R. (2020). *Research methods for business: A skill-building approach* (9th ed.). John Wiley & Sons.
17. Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
18. Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J.-F., Dubey, R., & Childe, S. J. (2020). Big data analytics capabilities and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 112, 65–77. <https://doi.org/10.1016/j.jbusres.2019.08.052>
19. Warren, J. D., Moffitt, K. C., & Byrnes, P. (2015). How big data will change accounting. *Accounting Horizons*, 29(2), 397–407. <https://doi.org/10.2308/acch-51069>
20. Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.