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ADOPTION OF ACTIVITY-BASED COSTING (ABC) AND ITS IMPACT ON COST REDUCTION IN SERVICE INDUSTRIES. A STUDY OF THE NIGERIAN TELECOMMUNICATION SECTOR

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ABSTRACT

This paper examined the use of Activity-Based Costing (ABC) and its impact on cost reduction in the Nigerian telecommunication sector, with reference to MTN, Airtel, Globacom, and 9mobile. The research design was descriptive and was based on primary data (questionnaires and interviews with financial managers/accountants). The findings show that the telecommunication industry in Nigeria is increasing its awareness of the ABC, but it has yet to be adopted at full scale. In the areas where it has been put into practice, the ABC has helped to increase the accuracy of costs, helped in the identification of non-value-added activities, and helped reduce costs in general, thus increasing efficiency and competitiveness. Major obstacles, however, remain, such as poor managerial performance, organizational resistance to change, high implementation cost, and the failure to fit ABC in with existing management information systems. The paper concludes that the wider use of ABC might lead to a significant change in the management of costs and strategic decision-making in the Nigerian telecom industry. It suggests building management capacity, investing in support technology, and providing institutional support to facilitate the use of ABC. The implications of the results extend well beyond Nigeria to the service sectors in other developing economies and provide thought and insight into how modern costing techniques can contribute to improved sustainability and profitability.

Keywords: Activity-Based costing, Cost reduction, communication industry, service industry, Nigeria, cost management

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1. Introduction

The world of business is becoming increasingly competitive, compelling organizations to adopt improved cost management strategies to remain efficient and profitable. Traditional costing systems have been widely criticized for failing to provide accurate cost information in service industries where costs are often indirect, complex, and activity-based. Conventional approaches to overhead allocation are typically based on simple measures such as sales volume or labor hours, which may not reflect the actual consumption of resources. Consequently, distorted cost allocation often leads to poor managerial decision-making, uncompetitive pricing, and operational inefficiencies (Kaplan and Cooper, 2018).

Activity-Based Costing (ABC) was developed to address these shortcomings by providing a more refined method of cost allocation. ABC assigns costs to specific activities and subsequently to products or services based on actual resource usage. By doing so, it improves the identification of cost drivers, highlights non-value-added activities, and provides managers with a clearer understanding of organizational cost behavior. This makes ABC particularly relevant in industries with significant and complex overhead structures, such as the telecommunications sector.

The Nigerian telecommunications industry—comprising major operators such as MTN, Airtel, Globacom, and 9mobile- has emerged as one of the fastest-growing and most competitive service sectors. Despite substantial revenue generation, these firms operate in a capital-intensive environment characterized by high infrastructure costs, exchange rate volatility, intense competition, and regulatory pressures. As a result, many telecom companies continue to face rising operating costs and declining profit margins. Accurate cost information is therefore essential for optimizing resource utilization, minimizing waste, reducing unnecessary expenditures, and enhancing competitiveness. Although ABC appears to offer solutions to these challenges, concerns remain regarding the extent of its adoption within Nigerian telecommunications firms and its actual impact on cost reduction. While ABC has been widely studied and implemented in developed economies, its application in developing countries such as Nigeria, particularly within the service sector, remains limited. This gap motivates this study.

Furthermore, the telecommunications industry in Nigeria continues to experience operational inefficiencies, rising costs, and profitability pressures driven by currency fluctuations, rapid technological changes, and stiff market competition. Traditional costing systems often fail to capture the complexity of telecom cost drivers such as network maintenance, customer service operations, and billing processes. These shortcomings frequently result in inaccurate cost information, weak cost control, and suboptimal decision-making. ABC has been identified as a more suitable alternative because it enables firms to trace costs more accurately, allocate expenses based on actual resource consumption, identify non-value-adding activities, and improve operational efficiency. However, studies (e.g., Teoh and Tiwari, 2021) indicate that ABC

remains underutilized in Nigerian service industries due to factors such as high implementation costs, inadequate managerial expertise, poor technological infrastructure, resistance to organizational change, and unreliable data systems. Addressing these barriers through training, improved information systems, and stronger institutional support could position ABC as a powerful strategic tool for cost reduction, competitiveness, and sustainability in Nigeria's telecommunications industry.

Research Questions

This study seeks to answer the following questions:

- a) To what extent have telecommunication companies in Nigeria adopted Activity-Based Costing?
- b) How does the adoption of Activity-Based Costing influence cost reduction in the Nigerian telecommunication sector?
- c) What challenges hinder the effective implementation of Activity-Based Costing in Nigerian telecom companies?
- d) What strategies can be recommended to improve cost management practices using Activity-Based Costing?

Objective of the Study

The main objective of this study is to examine the adoption of Activity-Based Costing and its influence on cost reduction in the Nigerian telecommunication sector. The specific objectives are to:

- a) Determine the extent to which Activity-Based Costing has been adopted by Nigerian telecommunication companies.
- b) Assess the relationship between ABC adoption and cost reduction in the Nigerian telecommunication sector.
- c) Identify the challenges and limitations affecting the implementation of ABC in Nigerian telecom firms.
- d) Provide recommendations for enhancing cost management practices through Activity-Based Costing.

2. Literature Review

2.1 Conceptual Literature

The cost management concept has experienced a shift from the traditional volume-based allocation methods to much more sophisticated methods that are more accurate in the complexity of modern business practices, particularly in the service sectors. The conventional costing systems use broad aggregates of direct labor hours or units of production to allocate the indirect costs. Though it might be satisfactory in a simple production context, it is often ineffective in situations where overhead and indirect expenses make a significant part of the total spending (Drury, 2018). The telecommunications industry, characterized by high

overhead rates, heterogeneous services delivered, and complicated operations, is typical of situations where standard cost systems distort cost data, leading to poor managerial decision-making.

ABC became a response to the weaknesses of traditional costing systems as well as an orthogon to the activity-based approach to costing and has since become a key construct in most cost management texts. ABC is a management approach in which overheads and indirect costs are allocated through the identification of activities that consume resources and matching costs and products or services according to the real utilization of the activities (Kaplan and Cooper, 2018; Innes and Mitchell, 2021). Such a paradigm shift brings the center of focus to volume-based cost allocation to an activity-based analysis and, therefore, facilitates organizations to identify specific cost objects more accurately. Accordingly, ABC provides better quality cost information, greater transparency, and contributes to better managerial decisions such as pricing, budgeting, product-service mix, and process optimization. The applicability of ABC is especially high in the context of service industries in which indirect and non-production costs constitute a major portion. Network maintenance services, customer services, billing services, and information technology services are some of the key elements of the telecommunications business, but these expenses cannot be properly allocated in traditional costing systems. ABC, on the other hand, makes allocation of costs based on relevant cost drivers, which are the number of transactions, time in the networks, or number of customers served, thus the real resource usage in the service delivery. In this way, managers can find out non-value-adding activities and eradicate waste; moreover, they can allocate resources more effectively, which is essential in eliminating costs and competitive positioning, both of which are achieved by ABC.

A very important aspect of ABC is the fact that it is both a costing approach and a strategic management tool. ABC is a better-quality cost information methodology as a costing methodology, and a better basis of organizational goals in cost control, performance measurement, and long-term competitiveness as a strategic tool. To give an example, ABC provides information that allows cost drivers to be associated with strategic cost-cutting projects, and in this way, accounting activities are synchronized with organizational objectives. This theoretical synthesis is consistent with the current paradigms in management accounting that support the existence of cost systems that can measure the cost and, at the same time, affect the behavior and strategic performance.

The conceptualization of the adoption of ABC is both a behavioral and a structural process within organizations. Adoption has structural implications, including the incorporation of ABC into existing accounting information systems, specification of activities and cost drivers, and reallocation of resources according to consumption of activities. Adoption, behaviorally, necessitates managerial attitudinal and behavioral changes, such as being willing to use detailed cost data and process reengineering based on an ABC analysis. Therefore, adoption is not a simple application but a form of organizational commitment, culture change, and alignment to strategic goals. The connection between ABC adoption and cost reduction can be theoretically supported by the idea that the more accurate cost information is used, the more effective

cost-management decisions are made. Cost reduction is not understood as a blind cut of costs, but a search for and improvement of the processes that add no value and optimization of the use of resources, as well as improvement of operations. This can be in the form of smoother processes of customer service in telecommunications companies, or better scheduling of network maintenance, or more accurate pricing policies based on the ABC cost information.

Various issues are at play in determining the level of adoption of ABC in service industries. These determinants comprise the organizational size, capability to embrace technology, managerial expertise, and competitive pressure. The bigger companies that have had advanced information systems are, in most cases, better placed to adopt more complex costing systems like ABC since they can absorb the cost of implementation and handle more data complexity. Smaller companies or those with a less advanced technology base might, on the other hand, face high barriers to adoption, such as high start-up costs, lack of technical knowledge, and resistance to change. These determinants are important to understand to explain variation in the uptake of ABC among firms in a similar industry. Within the narrower scope of the Nigerian telecommunications industry, an understanding of the situation in the industry based on the operational and competitive dynamics is necessary to conceptualize the adoption of ABC in the industry. Nigerian telecommunication companies work in a deregulated market where competition is supreme, price elasticity, regulation through policies, and technology is changing at a high rate. These characteristics create a twofold demand for precise cost data and impose significant difficulties regarding the successful implementation and utilization of the advanced costing systems. In theory, the benefits of adopting ABC in this type of environment include providing a solid platform to improve the visibility of costs, assist cost-reduction efforts, and allow companies to make strategic decisions that increase efficiency and profitability.

Overall, the theoretical model of this paper places the Activity-Based Costing as a contemporary cost allocation system that overcomes the shortcomings of the traditional costing systems in the service sector. It also theorizes the adoption of the ABC as a strategic organizational process that increases the level of accuracy in costs and promotes cost-cutting strategies. Lastly, it acknowledges that the success of adoption depends on firm-specific and environmental factors, which will dictate the level at which the ABC can achieve the intended benefits in the Nigerian telecommunications industry.

2.2 Theoretical Framework

The study is based on the Activity-Based Costing (ABC) Theory and is complemented with Contingency Theory. These theories present the theoretical basis of studying how Activity-Based Costing will be adopted and its effects on lowering costs in the service industry, specifically in the Nigerian telecommunication industry.

The Activity-Based Costing (ABC) Theory, which was developed by Kaplan, R. S., & Cooper, R. (1998), is founded on the fact that the key drivers of costs in organizations are the activities. According to the theory, activities consume resources and products or services, which in turn, consume activities. The proper management of costs, therefore, needs to identify organizational operations and assign costs to them using the right cost drivers instead of using the conventional or volume-based cost measures in terms of labor hours or output quantity. This theoretical stance explains why traditional costing systems tend to perform poorly in service sectors that have many indirect and overhead expenses as the total operating expenses.

The applicability of the ABC Theory to the present research is that the correct allocation of costs results in effective cost management and cost minimization. The network maintenance, customer service, billing, and information technology support operations have high indirect costs in the telecommunications industry. These costs are usually misrepresented in traditional costing systems, and this leads to inefficiency in pricing and bad managerial decisions. The implementation of Activity-Based Costing will enable telecommunication companies to determine value and non-value activities, produce waste, make more efficient use of resources, and end up with lower operational costs of operation.

Contingency Theory by Otley, D. (1980; 2016) is a complement to the ABC Theory as it describes the differences in the use and the success of the Activity-Based Costing in organizations. According to the theory, the most appropriate management accounting system does not exist, and the effectiveness and suitability of a costing system would be determined by the organizational and environmental conditions, which include the size of firms, complexity of technologies, regulatory needs, competition, and managerial strength. This school of thought is especially pertinent to the telecommunication industry within Nigeria, which exists in a dynamic and competitive market typified by high levels of technological change and regulatory forces.

Based on the Contingency Theory, the degree to which telecommunication companies in Nigeria can embrace and successfully apply the use of Activity-Based Costing depends on contextual factors such as high implementation costs, lack of technological infrastructure, poor management skills, and organizational change resistance. These reasons contribute to the fact that some companies gain substantial cost reduction after implementing ABC, and others do not make many gains. The Contingency Theory can thus aid in the

study of the challenges of adoption and differences in the implementation of the same across the telecommunication companies.

Activity-Based Costing Theory and Contingency Theory would make a more complete explanation of the technical effectiveness of the ABC and the organizational circumstances that affect its implementation. Although the ABC Theory supports the fact that the allocation of costs using the activity approach results in the achievement of better costs and reduction of costs, the Contingency Theory provides the understanding of the reason why the degree of implementation and success of ABC is not the same in all companies. A combination of these theories supports the research problem, which is the investigation of the implementation of the Activity-Based Costing and its effects on the reduction of costs within the Nigerian telecommunication industry.

2.3 Empirical Review

A number of empirical studies have investigated the implementation of the Activity-Based Costing (ABC) and its impact on cost reduction and organizational performance, especially in service-based industries and cost-intensive industries. Even though most of the initial findings are based on manufacturing companies, current studies are more focused on the applicability of ABC to service-oriented businesses, like telecommunications, where indirect costs make up a significant portion of the operating expenses (e.g., Smith and Jones, 2018).

Nartey (2025) reported that although ABC adoption among small and medium-sized enterprises in Ghana remains relatively low, firms that adopted ABC experienced significant improvements in operational efficiency and financial performance.

Adeyemi and Salami (2025) have provided an empirical study of the application of ABC in Nigerian telecommunication companies. The results indicate that the adoption of ABC leads to significant increases in the level of accuracy in the allocation of costs and helps in lowering the operating costs. Nonetheless, resistance to change, lack of proper training, and high costs of implementing the system are found to be significant barriers to large-scale adoption (as reported in the study).

Zrar, Hassan, and Mahmood (2024) explored the impact of the adoption of ABC on the cost reduction and price decisions of service-based companies through structural equation modelling. The research shows that there is a high positive correlation between the adoption of ABC and the reduction of cost, and the increase in pricing accuracy. Based on this, the authors find that ABC is specifically useful in-service industries that are characterized by high overhead costs and activity-based costs (see also Reynolds, 2019).

Yakubu and Ibrahim (2024) evaluated the issues and advantages of the application of ABC in service industries that are regulated in another study based in Nigeria. The findings suggest that the adoption of ABC enhances the efficiency of cost and resource use, but due to the pressure of the regulations and limitations in the sphere of technology, the complete adoption of ABC is hindered. The research indicates the applicability of ABC to telecommunication companies that face the challenge of high competition and regulatory cost limits.

In their empirical study, Owolabi and Adegbe (2023) focused on the cost-management practices across the service sectors in Nigeria, one of which is the telecommunications sector. The research establishes a statistically significant influence of the adoption of ABC on cost reduction and profitability. The authors deduce that ABC improves the ability of service firms to handle the complex cost of operation, especially costs relating to technology and customer-service provision.

Paradzal, Wadesango, and Sitsha (2023) conducted a study that targeted Africa as a service-based small and medium-sized enterprise. The results indicate that ABC implementation has a positive impact on the reduction of costs and operational efficiency. However, the extent of this impact depends on the size of the organization, the level of competence among the staff, and access to quality cost information- all of which are also applicable to large telecommunication companies in Nigeria.

In third-world economies, the adoption has already led to efficiencies, but has not been without its challenges, including the high costs of implementation and managerial incompetence (Narayanan, 2023; Yahya & Husin, 2022). Nigeria's studies have adopted manufacturing as the main subject in research, with the result that technologically advanced companies tend to implement ABC and have more benefits in terms of cost control (Agwu, 2019; Oladipupo and Izedonmi, 2023).

Al-Omiri and Drury (2022) investigated the association between the use of ABC and its effectiveness in managing costs in large service organizations. They prove in their empirical evidence that the adoption of ABC is strongly related to better allocation of overhead costs and greater managerial control. The authors note that service companies whose indirect costs are high, like telecommunications companies, are more likely to make use of ABC than the traditional costing systems.

Similarly, Eze, Okeke, and Nwoye (2022) examined the level of adoption of the ABC in the telecommunication companies of Nigeria through questionnaire data of accounting and finance managers. The results reveal that the adoption of ABC in the industry is low to moderate; however, the companies that adopted it partially showed that it provided them with better cost transparency and greater control over

overheads associated with networks, which, in turn, presents the possibility of the method in terms of cost reduction in the industry.

Adebayo and Ogunleye (2021) engaged in an empirical study of Nigerian service companies to determine how modern management accounting methods led to cost-efficiency. Their findings indicate that the companies that use ABC have lower operational costs and better efficiency in decision-making. The authors conclude that ABC gives more credible cost information as compared to non- modern costing methods in service organizations with complex cost structures.

Teoh and Tiwari (2021) performed a similar study focusing on the factors and the results of the adoption of ABC in service industries by developing nations. The authors determined that the relationship between the adoption of ABC and the reduction in costs is positive and statistically significant. However, the research underlines that the high cost of implementation and lack of managerial skills limit the adoption, especially in service-based industries that demand heavy capitalization, like the telecommunications industry.

The study by Abdul-, Rahman and Omar (2020) concerns the adoption of ABC in service firms in emerging economies basing on the survey data of telecommunication and financial service providers. According to their findings, ABC adoption helps a great deal in increasing the accuracy of costs and the cost control mechanisms. Additionally, the firms that embraced ABC were in a better position to detect non-value adding activities and minimize overhead expenses relative to other firms using the conventional costing systems.

Alsayegh (2020) provided a systematic review of ABC adoption and outcomes across developed and developing countries. While not strictly quantitative, this review synthesizes empirical findings showing that ABC adoption generally leads to improved cost accuracy, stronger cost control, and enhanced managerial decision-making though adoption levels remain higher in developed contexts.

Kaplan and Cooper's (2018) study also emphasized that innovation-related factors such as trialability and observability positively influence adoption decisions. The second benefit of ABC is scientifically established because it has resulted in the achievement of improved profitability and cost control in both manufacturing and services across the global market.

However, the research in the Nigerian telecommunication sector is limited despite the industry being an overhead-driven sector and a large research gap. This paper thus fills this gap by investigating the use of ABC and its contribution towards cost saving in the Nigerian telecommunication companies.

3. Methodology

Research Design

This study adopted a descriptive survey research design to examine the adoption of Activity-Based Costing (ABC) and its impact on cost reduction within the Nigerian telecommunication sector. The descriptive survey design was considered appropriate because the study seeks to investigate existing organizational practices, managerial perceptions, and observable outcomes relating to ABC adoption without manipulating any variables.

Given that the research focuses on understanding the current state of ABC implementation and its operational consequences across firms, the survey approach allows for systematic and structured data collection from professionals directly involved in cost management decisions. Furthermore, the design supports the integration of both quantitative and qualitative evidence, thereby enhancing the depth and reliability of findings. The study adopts a cross-sectional approach, meaning that data were collected at a single point in time across selected firms. This approach is suitable for examining prevailing cost management practices within the dynamic and competitive Nigerian telecommunications industry.

Population of the Study

The population of the study comprised accounting and finance-related personnel within the four dominant telecommunications companies operating in Nigeria:

MTN Nigeria, Airtel Nigeria, Globacom, 9mobile,

These firms were selected because they control the largest share of the Nigerian telecommunications market and operate in a highly capital-intensive, technology-driven environment where effective cost management systems are critical for sustainability and competitiveness.

The targeted respondents included:

Financial Managers, Management Accountants, Internal Auditors

Cost Accountants, Budget Officers, Finance Controllers

These categories of professionals were selected because they are directly involved in cost allocation, budgeting, financial reporting, and management accounting practices, including the possible implementation of ABC systems.

Sources and Methods of Data Collection.

The study utilized both primary and secondary sources of data.

Primary Data:

Primary data were collected using: Structured Questionnaires, Semi-Structured Interviews

The questionnaire consisted of both closed-ended and open-ended questions and was divided into four major sections:

Section A: Demographic Characteristics.

Section B: Extent of ABC Adoption.

Section C: Impact of ABC on Cost Reduction.

Section D: Challenges Affecting ABC Implementation.

The questionnaire items were measured using a five-point Likert scale ranging from:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

This scaling method allowed for quantitative measurement of perceptions and organizational practices relating to ABC adoption.

Interviews:

Semi-structured interviews were conducted with selected senior finance personnel to obtain in-depth insights into:

Practical experiences with ABC implementation

Organizational resistance factors

Technological integration challenges

Managerial decision-making processes

The qualitative component enriched the quantitative findings and enabled contextual interpretation of statistical results.

To maximize response rate, questionnaires were administered using both electronic (email distribution) and physical methods, with follow-up reminders to participants.

Sampling Technique and Sample Size.

The study employed a purposive sampling technique, which is appropriate when selecting respondents with specific technical knowledge relevant to the research objectives. Since ABC adoption and cost reduction analysis require specialized understanding of costing systems, purposive sampling ensured that only qualified and knowledgeable personnel participated in the study.

A total of 100 respondents were targeted, comprising 25 respondents from each telecommunications firm. This distribution ensured proportional representation across the four organizations while maintaining analytical balance.

Out of the 100 questionnaires administered, 85 valid responses were retrieved, representing an 85% response rate. This response rate is considered statistically adequate for social science research and strengthens the reliability and generalizability of the findings within the context of the selected firms.

Instrument Validation and Reliability:

To ensure the credibility and scientific rigor of the research instrument, several validation procedures were undertaken.

Content and Face Validity

The questionnaire was reviewed by senior academics and professionals in accounting and management accounting to ensure that:

Questions were relevant to the research objectives.

Items adequately captured the constructs of ABC adoption and cost reduction.

Ambiguities and structural inconsistencies were eliminated.

Pilot Testing

A pilot study was conducted using a small group of respondents outside the selected firms to test clarity, structure, and comprehension of questionnaire items.

Reliability Testing

Reliability of the instrument was tested using Cronbach's Alpha, which produced a coefficient of 0.70.

This value meets the minimum acceptable threshold for internal consistency in social science research, indicating that the instrument reliably measures the intended constructs.

The rigorous validation process strengthens confidence in the consistency and accuracy of the data collected.

Decision Rule:

Reject null hypothesis if $p\text{-value} < 0.05$,

Accept null hypothesis if $p\text{-value} > 0.05$.

3.8 Qualitative Data Analysis:

Qualitative data obtained from interviews were analyzed using thematic analysis. Key themes were

identified, categorized, and interpreted in line with the research objectives. This process allowed the identification of recurring patterns relating to:

Managerial resistance,
Technological constraints,
Cost-benefit considerations,
Organizational readiness.

The integration of qualitative and quantitative evidence enhances methodological robustness and triangulation validity.

Model Specification:

To empirically examine the relationship between ABC adoption and cost reduction, the study specified the following regression model:

Where:

CR = Cost Reduction

ABC = Level of Activity-Based Costing Adoption

CHAL = Implementation Challenges

β_0 = Intercept

β_1, β_2 = Regression Coefficients

ε = Error Term

A priori expectations:

$\beta_1 > 0$ (ABC adoption positively influences cost reduction)

$\beta_2 < 0$ (Implementation challenges negatively influence cost performance).

This model enables quantitative testing of the predictive impact of ABC adoption while controlling for implementation challenges.

Methods of Data Analysis.

Data analysis combined descriptive and inferential statistical techniques using SPSS software,

Descriptive Statistics,

Frequencies,

Percentages,

Means,

Charts,

These were used to summarize demographic characteristics and extent of ABC adoption.

Inferential Statistics,

Chi-square Test:

These were used to examine associations between categorical variables, particularly the extent of ABC adoption and cost-saving outcomes.

Pearson Correlation Analysis:

This was used to determine the strength and direction of the relationship between ABC adoption and cost reduction.

Multiple Regression Analysis:

Multiple Regression Analysis was used to determine the predictive impact of ABC adoption on cost reduction.

ANOVA Test:

This was used to determine overall model significance.

All hypotheses were tested at a 5% level of significance ($\alpha = 0.05$).

4. Result and Discussion

4.1 Result

The data gathered on the adoption of Activity-Based Costing (ABC) and its impact on cost reduction in the Nigerian telecommunication industry is presented and analyzed based on the responses obtained through the experimental research methodology. The chapter one research questions and hypotheses form the basis of the analysis. This is done through both descriptive and inferential statistical analysis, complemented with qualitative information in the form of interviews.

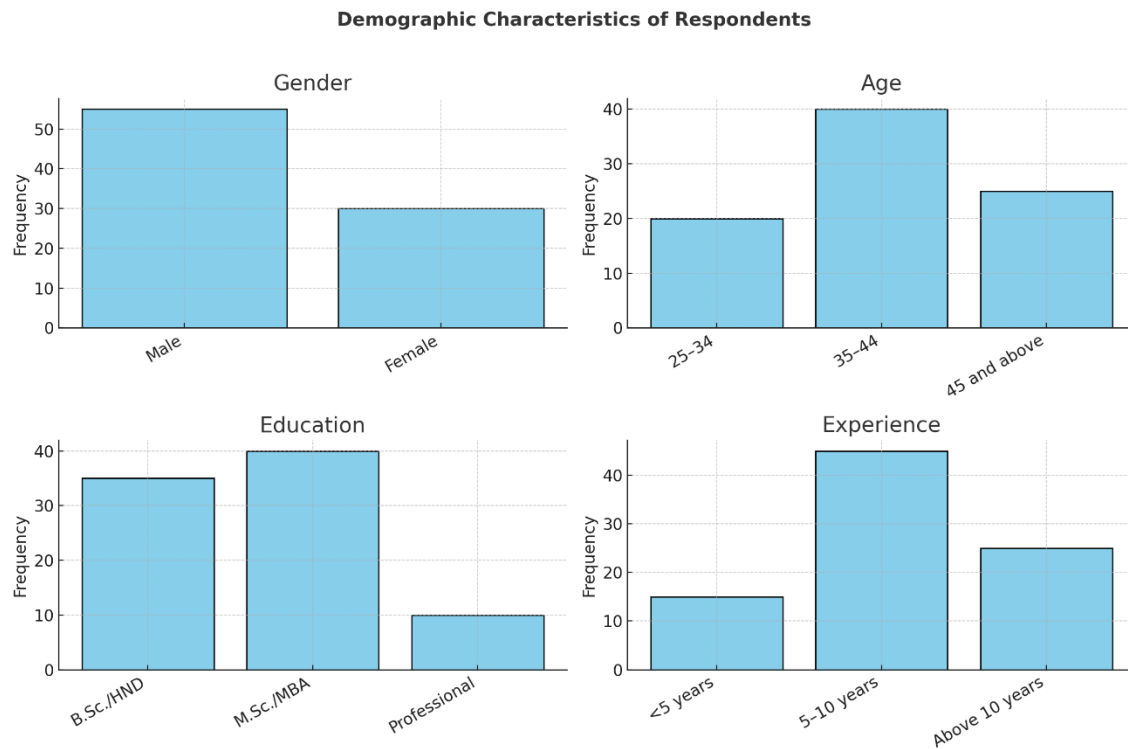
One hundred questionnaires were issued to the managers, accountants, and financial officers of four leading telecommunication firms in Nigeria, i.e., MTN, Airtel, Globacom, and 9mobile. Among them, 85 were duly filled and sent back, giving a response rate of 85.

All the tables and figures in this chapter have been derived using the primary data obtained through questionnaires given by the researcher and evaluated using the descriptive and inferential statistical tools.

Table 4.1.1: Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	55	64.7
	Female	30	35.3
Age	25–34	20	23.5
	35–44	40	47.1
	45 and above	25	29.4
Educational Qualification	B.Sc./HND	35	41.2
	M.Sc./MBA	40	47.1
	Professional (ICAN/ACCA)	10	11.7
Years of Experience	Less than 5 years	15	17.6
	5–10 years	45	52.9
	Above 10 years	25	29.5

Source: Authors' analysis based on questionnaire responses (2025).



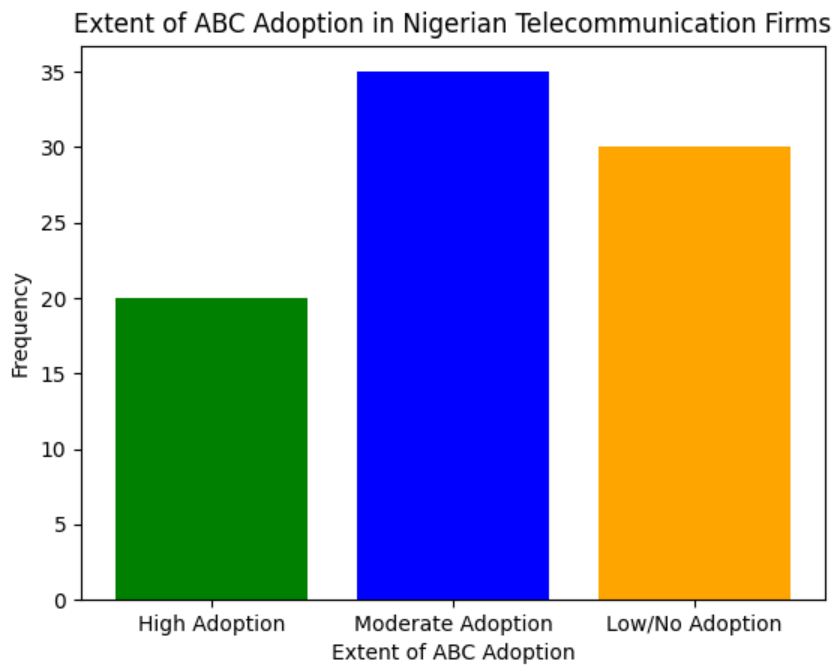
Interpretation

The results show that respondents were mostly middle-aged professionals with considerable work experience. The majority held postgraduate or professional qualifications, suggesting that the responses were drawn from knowledgeable individuals capable of providing reliable insights on cost management practices.

Table 2: Extent of ABC Adoption in Nigerian Telecommunication Firms

Extent of Adoption	Frequency	Percentage (%)
High Adoption	20	23.5
Moderate Adoption	35	41.2
Low/No Adoption	30	35.3

Source: Authors' analysis based on questionnaire responses (2025).



Source: Authors' analysis based on questionnaire responses (2025).

Interpretation

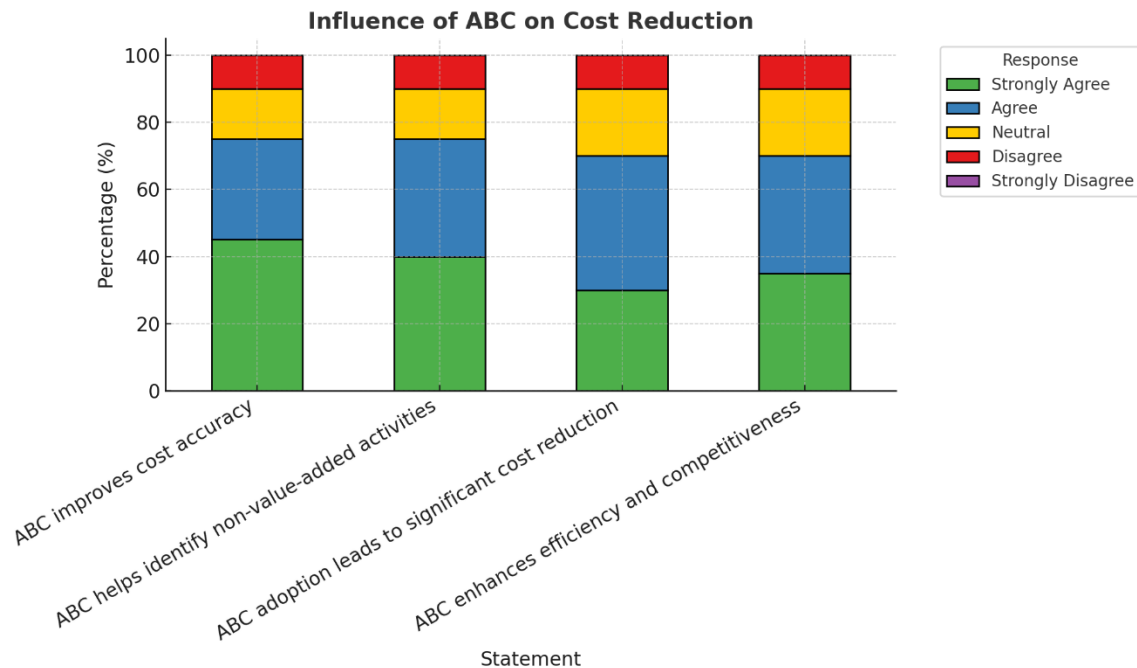
The findings indicate that while awareness of ABC exists, only 23.5% of firms have adopted it extensively. A majority (41.2%) reported moderate adoption, while 35.3% either have not adopted or only minimally use ABC. This suggests that ABC is still emerging in the Nigerian telecommunication sector.

Table 3: Influence of ABC on Cost Reduction

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
ABC improves cost accuracy	45	30	15	10	—
ABC helps identify non-value-added activities	40	35	15	10	—
ABC adoption leads to significant cost reduction	30	40	20	10	—

ABC enhances efficiency and competitiveness	35	35	20	10	—
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Source: Analysis based on questionnaire responses (2025).

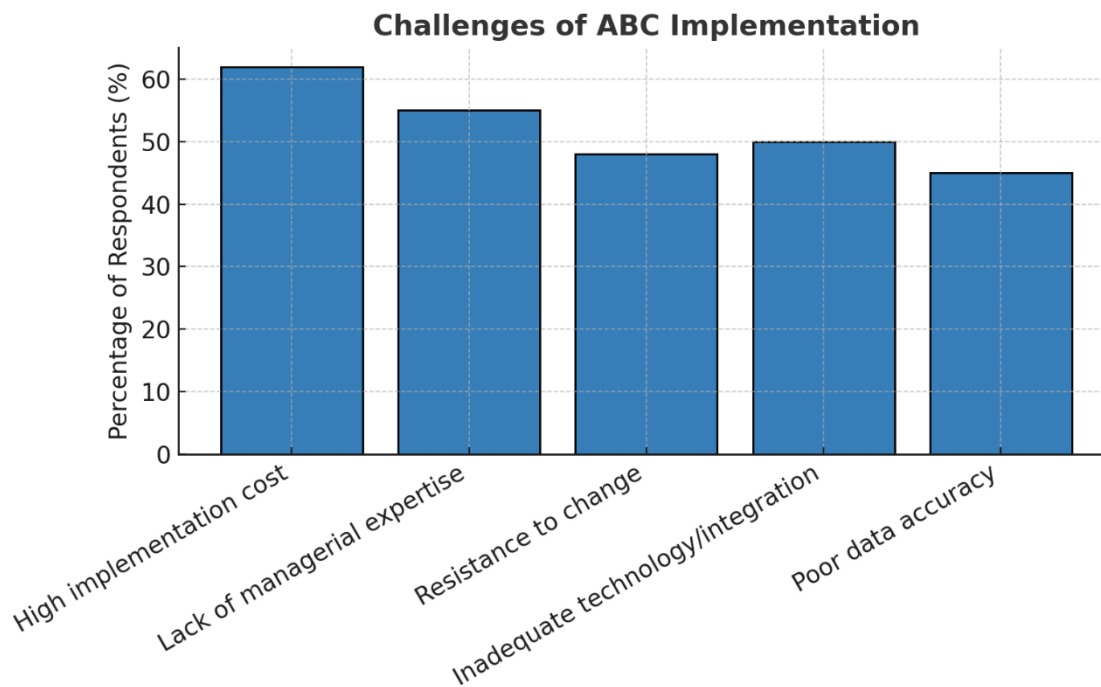


Source: Analysis based on questionnaire responses (2025).

Interpretation: The majority of respondents agreed that ABC improves cost accuracy, identifies wasteful activities, and contributes to cost reduction. This indicates a positive perception of ABC’s impact on efficiency and competitiveness.

Table 4: Challenges of ABC Implementation

Challenge	Percentage of Respondents (%)
High implementation cost	62
Lack of managerial expertise	55
Resistance to change	48
Inadequate technology/integration	50
Poor data accuracy	45
Lack of managerial expertise	55
Resistance to change	48
Inadequate technology/integration	50
Poor data accuracy	45



Source: Authors' analysis based on questionnaire responses (2025).

Interpretation: High implementation costs and lack of managerial expertise were identified as the two major barriers to effective ABC adoption. Resistance to change and weak technological infrastructure also pose significant challenges.

Table 5: Regression Analysis of Activity-Based Costing (ABC) Adoption on Cost Reduction

Model Variables	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (β)	t-value	Sig. (p-value)
Constant	1.214	0.287	—	4.23	0.000
ABC Adoption	0.583	0.172	0.620	3.38	0.001

Source: Computation from SPSS 16 output based on field survey data (2025).

Model Summary

R	R ²	Adjusted R ²	Std. Error of Estimate
0.62	0.39	0.37	0.41

ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.45	1	12.45	11.45	0.001
Residual	19.60	83	0.24		
Total	32.05	84			

Decision Rule

- **p-value (0.001) < 0.05**
- Reject H_{02}
- Accept H_{12}

The results show that Activity-Based Costing (ABC) has been significantly adopted in Nigeria's telecommunication sector ($\chi^2 = 15.27$, $p = 0.002$), though adoption remains uneven across firms. Further, regression analysis confirmed a significant positive relationship between ABC adoption and cost reduction ($R = 0.62$, $R^2 = 0.39$, $F = 11.45$, $p = 0.001$), highlighting ABC's role in improving efficiency and competitiveness. However, correlation analysis revealed that implementation challenges, particularly cost, managerial expertise, and technological barriers significantly affect its effectiveness ($r = 0.58$, $p = 0.004$).

4.2 Discussion of Findings

The results of this research provide empirical data on the implementation of Activity-Based Costing (ABC) and the effect on cost-reduction in the Nigerian telecommunications industry, and they generally support the theoretical forecasts and previous empirical studies. The findings suggest that the adoption of ABC is moderate in the context of the telecommunications companies in Nigeria, with only a small percentage of the firms claiming to use the system extensively. This indicates that although the knowledge of ABC is widely practiced in the industry, not all its aspects are fully carried out. It is consistent with previous Nigerian research, including Egbunike et al. (2013) and Adigbole and Oludoyi (2016), which reported partial and uneven implementation of ABC by firms because of organizational and environmental factors. This finding was also found by Yahya and Husin (2022) in developing economies, where the adoption of ABC did not occur universally, but selectively, as an addition to organizational cost-management systems.

Although the adoption rate is moderate, the study indicates strong evidence that ABC adoption has positive impacts on cost reduction in the telecommunications industry. According to the regression analysis, the relationship between cost reduction and ABC adoption is statistically significant, which shows that companies adopting ABC enjoy improved cost control and operational efficiency. The result supports the hypotheses of the Theory of Activity-Based Costing, as developed by Kaplan and Cooper (2018), which

states that effective allocation of resources and removal of non-value-adding activities are possible with the correct identification of activities and cost drivers. This outcome also supports empirical data provided by Gunasekaran and Sarhadi (2023), who proved that the use of ABC in the service sector improves the accuracy of the cost and the efficiency of operations.

Moreover, the respondents gave a high level of agreement that ABC increases cost accuracy, makes it more competitive, and enables it to identify wasteful activities. These impressions are in line with the results of Anyadiegwu and Ifurueze (2016) and Muoneke and Dandago (2024), who found that the adoption of ABC has a significant role in enhancing cost management and competitive advantage of Nigerian organizations. The relevance of the model ($R^2 = 0.39$) indicates that the use of ABC explains a significant percentage of cost-cutting results, which supports the claim that ABC is a strategic cost-management instrument in technology-driven and service-oriented sectors like telecommunications.

The study, however, also shows that there are a number of challenges that significantly limit the efficiency of the implementation of ABC. Lack of managerial experience, high implementation, poor technological infrastructure, resistance to change, and poor data accuracy were found to be serious impediments. The findings are supported by previous studies conducted by Udeh et al. (2024) and Yahya and Husin (2022), stating similar barriers in developing economies. Within the Nigerian context, Oladipupo and Izedonmi (2023) also noted that the poor institutional capacity and low technical expertise in the country have hindered the effective use of advanced management accounting methods in the country.

The impact of these issues on the effectiveness of ABC empirically proves Contingency Theory, as explained by Otley (2016), according to which the effectiveness of management accounting systems is dependent upon the factors of the organization and the surrounding environment. The telecommunications industry is a very competitive and technologically complex industry in Nigeria, and unless sufficient investments are made in human capital, information systems, and change management, it is impossible to fully enjoy the fruits of ABC. This definition explains the gap that has been noted between the perceived advantages of ABC and its real degree of implementation in the industry.

In general, the results indicate that Activity-Based Costing has the potential to help significantly lower costs and achieve efficiency in the Nigerian telecommunications industry. However, its effects are limited due to financial, technical, and managerial constraints. These findings are consistent with the international and local empirical data that suggest the idea that though ABC is a useful cost-management instrument, its effective implementation depends on organizational preparedness, as well as institutional enabling factors. The research thus adds to the available literature by giving evidence that is specific to the sector and

showing that there is a need to build capacity, invest in technology, and have favorable policies to increase the adoption and effectiveness of ABC in service industries in Nigeria.

5. Conclusion and Recommendation

5.1 Conclusion

This research concludes that Activity-Based Costing is a useful and useful cost-management tool that can improve the accuracy of costs, help identify activities that do not add value, and minimize operational expenses in the Nigerian telecommunication industry. The empirical data prove that the companies implementing ABC are characterized by better cost control and increased operational efficiency compared to those using only the conventional costing systems. Nevertheless, the paper also finds that the level of adoption of ABC in telecommunication companies in Nigeria is moderately heterogeneous. This means that although the benefits of using ABC are well known, the potential of the system has not been realized because of the financial, technical, and managerial limitations. As a result, the performance of ABC depends on the organizational preparedness, the presence of a qualified workforce, and a favorable technological platform.

In general, the research confirms the applicability of the Activity-Based Costing Theory and the Contingency Theory in explaining the advantages and drawbacks of adopting ABC in service-based sectors. It concludes that to ensure long-term cost reduction and competitiveness of Nigerian telecommunication firms, ABC should be supported by the proper organizational and environmental conditions.

5.2 Recommendations

Based on the findings, the following recommendations can be suggested:

The research suggests that the Nigerian telecommunication companies should invest in capacity building and training of managers, accountants, and financial officers through continuous professional development. The improved technical knowledge and practical skills are considered to be crucial to the successful implementation of the Activity-Based Costing (ABC). Moreover, organizations ought to undertake technological integration; they need to integrate ABC in their Management Information Systems (MIS). Such integration will enhance the accuracy of the data, promote real-time tracking of costs, and also enhance the ease of use and maintenance of the costing system.

Additionally, the research recommends the necessity of a cost-effective and gradual implementation process of the ABC. It is recommended that management start pilot projects in the areas that are most expensive or where business operations are crucial, and then expand ABC to the organization. This incremental solution minimizes the cost of the first implementation and restricts change resistance. Other key elements that can

help achieve organizational resistance include efficient change-management plans, including sensitizing employees, holding workshops, and using case studies of industries that have already successfully adopted the new costing system.

At the policy level, the paper has indicated the need to have regulatory support through institutions like the Nigerian Communications Commission (NCC) to lay down guidelines or incentives that would facilitate the implementation of the modern cost-management practices. This study bridges a significant research gap as it uses empirical data about the adoption of ABC in the telecommunication field in Nigeria, where there has been minimal research on the matter. It shows how the ABC can positively influence cost reduction, what practical implementation issues can be identified, and what actionable recommendations can be offered, which will be of good value to the managers, policymakers, and researchers.

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