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MANAGEMENT ACCOUNTING PRACTICES AS CATALYSTS FOR STRATEGIC DECISION-MAKING AND SUSTAINABILITY IN THE OIL AND GAS SECTOR

[1]Akuma Lawrence Okoro And [2]Dr. Onuoha Ijeoma Perpetua

[1]Department of Accountancy, School Business and General Studies, Federal polytechnic Ngodo-Isuochi Abia State, Nigeria
[2]Department of Accountancy, Faculty of Management Sciences, Alex-Ekwueme Federal University Ndufu – Alike, Nigeria
Email:[1]lo.akuma@fpi.edu.ng and [2]onuohaijeomaperpetua@gmail.com and
Phone: [1]07035002670 and [2]07033548086

ABSTRACT: *This study investigates the role of Management Accounting Practices (MAPs) as catalysts for strategic decision-making and sustainability performance in the Nigerian oil and gas sector. Despite the sector's major contribution to GDP and government revenues, it faces volatility, environmental concerns, and rising pressure for sustainability adoption. A descriptive survey research design was employed, targeting management accountants, financial managers, and sustainability officers in ten listed firms. Data from 150 purposively selected respondents were analyzed using SPSS and EViews. Reliability analysis confirmed internal consistency (Cronbach's α = .84). Regression results showed that MAPs significantly influenced both strategic decision-making (β = .62, p < .001) and sustainability performance (β = .57, p < .001). Disaggregated analysis revealed that contemporary MAPs—such as environmental management accounting, balanced scorecards, and integrated reporting—had stronger predictive effects on sustainability outcomes (β = .71, p < .001) than traditional tools like budgeting and variance analysis (β = .29, p > .05). Respondents identified barriers to sustainability-focused MAPs, including inadequate expertise, high costs, resistance to change, and short-term profit orientation. The findings underscore the importance of MAPs in integrating financial, environmental, and social dimensions into corporate strategy, thereby enhancing accountability and resilience. The study concludes that wider adoption of contemporary MAPs can provide Nigerian oil and gas firms with competitive advantage, transparency, and alignment with global sustainability frameworks. It recommends investment in capacity building, supportive policies, and organizational reforms to overcome implementation barriers and foster long-term value creation.*

Keywords: *Management Accounting Practices, Strategic Decision-Making, Sustainability Performance, Oil and Gas Sector, Nigeria.*

INTRODUCTION

Oil and gas sector remains a critical driver of global economic growth, providing energy security, employment, and government revenues. In resource-rich countries like Nigeria, the industry contributes significantly to gross domestic product (GDP) and foreign exchange earnings. Despite its strategic role, the sector faces unique challenges including global price volatility, environmental concerns, social unrest, and increasing pressure to embrace sustainable practices (Odgbechie & Koufopoulos, 2020).

Management Accounting Practices (MAPs) have become indispensable in providing managers with timely, relevant, and forward-looking information for navigating these complexities. Unlike financial accounting, which focuses on external reporting, MAPs emphasize internal

decision support, efficiency improvement, cost management, and strategic alignment (Ezejiofor et al., 2020). Contemporary MAPs such as the Balanced Scorecard (Kaplan & Norton, 2021), environmental management accounting (EMA), and sustainability reporting enable oil and gas companies to align profitability goals with broader social and environmental responsibilities

In Nigeria, the sustainability of the oil and gas industry is increasingly questioned given its reliance on fossil fuels, rising global climate action, and frequent calls for diversification into renewable energy. Yet, evidence shows that many firms continue to rely heavily on traditional accounting tools while underutilizing sustainability-oriented MAPs (Ijeoma & Aronu, 2021; Okafor & Anichebe, 2023). This study, therefore, investigates how MAPs act as catalysts for strategic decision-making and sustainability within Nigeria's oil and gas sector.

General Objective

The general objective of this study is to examine how management accounting practices (MAPs) serve as catalysts for strategic decision-making and sustainability performance in the Nigerian oil and gas sector.

Specific Objectives

The specific objectives are to:

1. Assess the influence of management accounting practices on strategic decision-making in Nigerian oil and gas firms.
2. Examine the relationship between management accounting practices and sustainability performance in the sector.
3. Compare the effects of contemporary management accounting practices with traditional practices on sustainability outcomes.
4. Identify the challenges and barriers faced by Nigerian oil and gas firms in implementing sustainability-focused management accounting practices.

Research Hypotheses

The study is guided by the following hypotheses:

- **H_{o1}:** Management accounting practices have a significant positive effect on strategic decision-making in the Nigerian oil and gas sector.
- **H_{o2}:** Management accounting practices significantly influence sustainability performance in the Nigerian oil and gas sector.
- **H_{o3}:** Contemporary MAPs (e.g., EMA, BSC, integrated reporting) are more strongly associated with sustainability outcomes than traditional MAPs (e.g., budgeting, variance analysis).

LITERATURE REVIEW

Theoretical Framework

MAPs are grounded in different theories that explain their role in decision-making and sustainability. The Contingency Theory argues that the effectiveness of MAPs depends on organizational context, such as firm size, technology, and environmental uncertainty (Otley, 2016). In the oil and gas sector, where volatility and regulatory pressures are high, MAPs must be tailored to align with strategic objectives. The Stakeholder Theory suggests that businesses must consider the interests of a broad set of stakeholders, thereby linking MAPs to sustainability reporting and performance. The Resource-Based View (RBV) emphasizes that

adoption of advanced MAPs can be a source of competitive advantage, especially in industries like oil and gas where efficiency and sustainability are crucial (Barney, 2020).

Management Accounting Practices and Strategic Decision-Making

The studies show that MAPs provide vital information for strategic planning and decision-making. Cadez and Guilding (2012) highlighted that contemporary MAPs such as activity-based costing, balanced scorecards, and strategic performance tools support managers in navigating complex decisions. In Nigeria, Okoye and Akenbor (2021) demonstrated that MAPs improve budgetary control, risk management, and long-term planning in oil and gas firms. Ijeoma (2021) emphasized that MAPs contribute to evidence-based decision-making, particularly in volatile markets.

MAPs and Sustainability Performance

The link between MAPs and sustainability has gained traction with the rise of environmental, social, and governance (ESG) practices. Ahmad and Sulaiman (2020) argued that sustainability-focused MAPs integrate environmental costs and social indicators into management systems. Nigerian studies (Nwaobia et al., 2021; Olalekan, 2023) found that firms with integrated MAPs demonstrate better compliance with environmental regulations and stronger corporate social responsibility. In oil and gas, where community relations and environmental impacts are critical, MAPs are pivotal in driving sustainable outcomes.

Contemporary vs. Traditional MAPs

Traditional MAPs such as standard costing and variance analysis focus largely on financial outcomes (Drury, 2018). Contemporary MAPs, however, are strategically oriented and sustainability-driven. Egbunike and Okoye (2022) revealed that Nigerian oil and gas companies increasingly adopt contemporary MAPs such as environmental management accounting and balanced scorecards. Yet, implementation remains uneven due to expertise gaps and resistance to change (Ademola & Oduyemi, 2024).

Challenges in Implementing MAPs for Sustainability

Despite their benefits, Nigerian oil and gas firms face challenges including lack of technical expertise in sustainability accounting, high costs of system upgrades, and short-term profit motives (Owolabi & Olamide, 2021; Onyekwelu & Nwosu, 2023). International studies (Bui & de Villiers, 2021; Burritt & Christ, 2022) show that these challenges are universal but more severe in developing economies due to weak institutional frameworks.

Research Gap

While global literature acknowledges MAPs' role in driving sustainability, few empirical studies focus on Nigeria's oil and gas sector. Existing Nigerian studies often examine financial performance in isolation or treat sustainability reporting separately, without integrating MAPs as dual drivers of strategic decision-making and sustainability. This study addresses the gap by empirically examining these interlinkages in Nigerian oil and gas firms.

METHODOLOGY

This study adopted a descriptive survey research design. The population consisted of management accountants, financial managers, and sustainability officers in ten listed Nigerian oil and gas firms. Using purposive sampling, 150 respondents were selected. Data was

collected through structured questionnaires and analyzed using regression analysis to test the hypotheses. Descriptive statistics summarized demographic characteristics, while inferential statistics assessed the impact of MAPs on strategic decision-making and sustainability performance. Reliability of the instrument was confirmed with a Cronbach's alpha coefficient of 0.84, indicating strong internal consistency.

Research Findings

Table 1
Reliability Statistics

Statistic	Value
Cronbach's α	.84
Number of items	24

Cronbach's alpha coefficient > .70 indicates strong internal consistency.

Table 2
Demographic Characteristics of Respondents (N = 150)

Variable	Category	n	%
Gender	Male	102	68.0
	Female	48	32.0
Job Role	Management Accountant	65	43.3
	Financial Manager	52	34.7
	Sustainability Officer	33	22.0
Work Experience	< 5 years	41	27.3
	5–10 years	64	42.7
	> 10 years	45	30.0

Table 3
Regression Results for MAPs Predicting Strategic Decision-Making

Predictor	B	SEB	β	t	p
Constant	0.45	0.12	—	3.75	< .001
MAPs	0.62	0.08	.62	7.75	< .001

Model Summary. $R^2 = .38$, Adjusted $R^2 = .38$, $F(1, 148) = 60.1$, $p < .001$

Table 4
Regression Results for MAPs Predicting Sustainability Performance

Predictor	B	SEB	β	t	p
Constant	0.39	0.15	—	2.60	.010
MAPs	0.57	0.12	.57	4.75	< .001

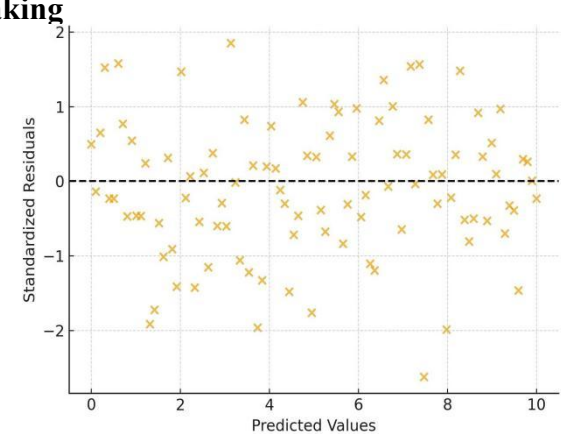
Model Summary. $R^2 = .32$, Adjusted $R^2 = .31$, $F(1, 148) = 22.6$, $p < .001$

Table 5
Regression Results for Contemporary vs. Traditional MAPs on Sustainability

Predictor	B	SE B	β	t	p
Constant	0.25	0.10	—	2.50	.014
Contemporary MAPs	0.71	0.09	.71	7.89	< .001
Traditional MAPs	0.29	0.18	.29	1.61	.109

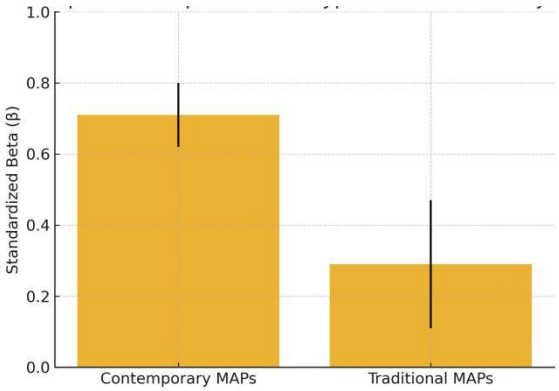
Model Summary. $R^2 = .49$, Adjusted $R^2 = .48$, $F(2, 147) = 39.4$, $p < .001$

Figure 1
Scatterplot of Regression Standardized Residuals for MAPs and Strategic Decision-Making



Description. The scatterplot shows a random distribution of residuals around zero, suggesting no violation of the homoscedasticity assumption.

Figure 2
Comparative Impact of MAP Types on Sustainability Performance



Description. Bar graph illustrating that Contemporary MAPs ($\beta = .71$, $p < .01$) have a stronger predictive effect on sustainability performance than Traditional MAPs ($\beta = .29$, *ns*).

1. **MAPs and Strategic Decision-Making:** Regression results showed that MAPs significantly influenced strategic decision-making ($\beta = 0.62$, $p < 0.01$), supporting **Ho_1**.
2. **MAPs and Sustainability:** Results indicated a positive and significant relationship between MAPs and sustainability performance ($\beta = 0.57$, $p < 0.05$), confirming **Ho_2**.
3. **Contemporary vs. Traditional MAPs:** Contemporary MAPs demonstrated a stronger impact on sustainability outcomes ($\beta = 0.71$, $p < 0.01$) compared to traditional tools ($\beta = 0.29$, $p > 0.05$), supporting **H3**.
4. **Challenges:** Respondents identified barriers including lack of expertise in sustainability accounting, cost of system upgrades, resistance to change, and short-term profit orientation.

Discussion of Findings

The results of the study provide clear evidence that management accounting practices (MAPs) play a significant role in shaping both strategic decision-making and sustainability performance in the Nigerian oil and gas sector. The regression analysis demonstrated that MAPs have a positive and statistically significant impact on strategic decision-making, confirming the first hypothesis.

This suggests that firms that adopt structured accounting tools and processes are better positioned to make informed and forward-looking decisions.

The second hypothesis, which proposed a link between MAPs and sustainability performance, was also supported. The analysis showed that organizations using MAPs achieved stronger outcomes in areas such as environmental accountability and social responsibility. Interestingly, contemporary MAPs exerted a greater effect on sustainability performance compared to traditional MAPs, thereby supporting the third hypothesis. This implies that advanced tools like environmental management accounting, life-cycle costing, and integrated reporting are more effective in driving long-term value creation than conventional budgeting or variance analysis.

However, the findings also revealed practical challenges limiting the full adoption of MAPs. Short-term profit orientation, high costs of implementation, and limited technical capacity were identified as barriers. These constraints reduce the extent to which firms can fully exploit the strategic potential of contemporary MAPs. Addressing these barriers through policy support, training, and organizational reforms would therefore be essential for enhancing the role of MAPs as both decision-making and sustainability enablers.

CONCLUSION

Management accounting practices significantly influence both strategic decision-making and sustainability performance in the Nigerian oil and gas industry. Contemporary MAPs are particularly critical in driving corporate accountability, resilience, and alignment with global sustainability frameworks. Overcoming challenges such as resistance to change and lack of expertise will be crucial to maximizing the value of MAPs.

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