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Assessment of The Effect of Free Cash Flow and Leverage on Earnings Management Practices in Sub-Saharan Africa

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ABSTRACT

Earnings Management Practices (EMP) have significant social and economic impact influencing a firm's business activities and decision-making. Existing studies on EMP in sub-Saharan Africa were mainly based on a few countries and focused almost exclusively on accrual EMP. In contrast, this study examines the effect of Free Cash Flow (FCF) and leverage on both accrual and real EMP among selected listed firms in sub-Saharan Africa. Utilising Larcker and Richardson (2004) model for accrual EMP and Roychowdhury (2006) model for real EMP. The research employs threshold management theory while the Generalized Method of Moments (GMM) estimator was used to analyse data from 276 non-financial listed firms across six countries for eleven (11) years (2013-2023). The results show that FCF positively and significantly affects accrual EMP but negatively and significantly impacts real EMPs. Unlike leverage that reveal positive and significant effect on accruals and real EMP. The results are of essence to corporate managers and regulators and it is of interest that more disclosure practices and governance should be enhanced to enable investors to navigate the risks of earnings management better so as to make informed decision.

Keywords: Earnings Management Practices, Financial Reporting, Free Cash Flow, Leverage, Threshold Management Theory, Sub-Saharan Africa
JEL Classifications: G15, G30, M41

1. INTRODUCTION

The subject of Earnings Management Practices (EMP) is frequently associated with some ethical issues as it may be detrimental to stakeholders. Such actions are subject to distorting the upstream information and investor trust and skew the market efficiency (Soeprajitno et al., 2024; Shittu and Oladipo, 2025). The situation in Sub-Saharan Africa is of particular interest when considering EMP because of its economic environment, the different enforcement of regulations, and contrasting corporate governance frameworks, which are very different in comparison to more developed economies. The International monetary fund (IMF) trimmed down the economic growth forecasts of Nigeria in 2025 by 0.2 percent to 3 percent. In sub-Saharan Africa, the IMF predicts a slight decrease in the growth to 3.8% in 2025, compared to 4.0 in

2024, and recovery to 4.2 in 2026. South Africa has also reduced the growth forecast to lower to 0.5% in 2025 and to 0.3% in 2026. Such amendments come due to a weak than anticipated growth in 2024, uncertainty, increased confidence, spread of protection policies and deterioration of economic activity in major world markets. The implications of these economic factors with respect to corporate listed firms in sub-Saharan Africa entail how the leverage and Free Cash Flow (FCF) of the companies are managed to facilitate the efficiency of their operations. According to Odionye et al. (2025), issues such as manipulation, uncertainty, bribery and corruption are among the major hurdles in economic growth in the African continent and therefore render the place unattractive to investors.

The aspect of undermining market confidence and decreasing financial reporting transparency has attracted the attention of

professionals, regulators, and academics toward EMP over the years (Nguyen et al., 2021; Oseni et al., 2022; Al-Hawtmeh et al., 2024). Examples include manipulation of reported earnings to achieve certain financial objectives like meeting analysts' expectations, or smoothing. Moreover, the performance and effectiveness of a company highly correlates with what people report as earned through accrual accounting applicaton. As a result, the discovery of EMP can lead to higher costs of debt, decreased investment effectiveness, accelerated payments, or reduced credit lines (Biu, 2024; Kristanti et al., 2024). EMP can take two forms: accrual and real EMP. Accrual is typically the primary focus of most studies on EMP and focuses on manipulating the accounting records without any changes to operational activities. Real EMP is experienced when managers set out to manipulate everyday business practices with the perception of having met certain financial objectives via regular business practices. The practice can diminish the long-run worth of a business as actions to increase its short run profit ability may adversely affect the future flows of cash. Financial managers often prefer to influence earnings through real EMP rather than the accrual method, because real EMP is not easy to detect by regulators (Shittu and Onifade, 2023; Ali, 2024; Itan et al., 2024). Although real EMP can reduce a company's future value, neither auditors nor regulators can prevent companies from engaging in these practices (Nguyen et al., 2024; Shah et al., 2024; Anh and Hung, 2025). Moreover, managers engage in EMP for beneficial circumstances, such as deriving information value for regulatory purposes or as a growth opportunity such as smoothing earnings, facilitating strategic decisions, meeting or beating expectations, enhancing operational performance, investment in innovaton and market expansion. However, while EMP can provide short-term benefits and opportunities for growth, it's important for corporate organisations to balance these practices with transparency and ethical considerations to ensure long-term sustainability and trust with stakeholders. Furthermore, real EMP has great consequences for the accuracy and reliability of a company's financial information and as a result, has found much research and scrutiny by regulatory bodies (Sari and Cahyaningtyas, 2024).

Odior and Iwegbu (2021, cited in Akinsola et al., 2025) describe leverage as the utilisation of borrowed funds to finance operations. The study further stated that, high leverage levels can increase financial risk and the potential for bankruptcy, as the company must make regular interest and principal payments on its debt. This, in turn, creates incentives for managers to engage in EMP. Besides, FCF is the cash generated by a company's business operations after deducting the costs associated with assets. Available liquidity is that which a company can place into growth opportunities, debt paydown, or shareholder capital. In addition, risk-averse management may overlook what can be profitable deals that can attract shareholder's money. When FCF is plentiful, firms can use EMP to show financial well-being, especially when they are trying to get more investment or borrowing (Santoso, 2023; Suranta et al., 2023). There is a challenge in the relationship of FCF and EMP. It also casts the question of the issue of financial reporting integrity, and decision-making processes of enterprises. The relationship between FCF and EMP is important to investors, regulators, and corporate stakeholders to determine the quality of reported earnings and financial health of companies.

In Africa, the literature seems to lack the nexus between FCF and leverage on EMP in terms of empirical evidence, particularly in sub-Saharan Africa, where unstable economies exist. Most studies on FCF and EMP have been conducted in Asia; for instance, Bukit and Iskandar (2009), Zakaria et al. (2015), and Mohdsuffian et al. (2020) assessed the influence of FCF on EMP among listed firms in Malaysia. Similarly, Alzoubi (2016), Al-Omush et al. (2018), and Khanh and Thu (2019) also did in Vietnam and Jordan. Moreover, Bhundia (2012) and Chalak and Mohammadnezhad (2012) examines the effect of FCF on EMP in India and Iran, respectively. Morever, Elkalla (2017) was conducted his study among countries in the Middle-East and North Africa (MENA) region of Africa. However, this study contrasts with the majority of past research which only measured accrual based EMP and not real EMP and how African firms particularly, sub-Saharan Africa react to the debt and liquidity pressure. It is also characterized by the multi-country focus as it has six African countries to depict the regional differences in governance and development. Theoretically, it uses a more sophisticated dynamic panel-data GMM estimation techniques that enhance better precision compared to the earlier studies that utilized simple models. It expand threshold management theory by entrenching cultural and institutional peculiarities of Africa, which expands the global knowledge of earnings management.

The motivation for this study comes from several key factors that highlight the significance of the relationship between FCF, leverage, and EMP in sub-Saharan Africa. The area is economically expanding but still defined by political risk and weak regulatory system. The determinants of EMP need to be understood by the formulators and regulators of policies so as to devise strategies to increase transparency and investor confidence (Saline, 2020). These insights will enable investors and other analysts to make better dec Through the analysis of the intersection between leverage and FCF, the current research offers information on how corporate governance can be reinforced to prevent EMP and increase accountability. The analysis of the relationship between FCF and leverage and EMP in sub-Saharan Africa comes at the right time and is needed to clarify the complexity of the characteristics of accuracy and reliability of financial reporting in the country. It is upon this nexus that this exploration centres and this paper contributes to the overall discourse on financial disclosure and economic development in the sub-Saharan African context, the end result of which is to make the business environment healthier and more realistic. The paper will prove that its conclusions can be used to change policies that will enable sustainable finance by improving cash-flow and debt management. isions and find companies that handle earnings in a responsible manner. The research also offers multi-country data that is infrequent, and will be used as a source in future financial and academic research in the continent. The paper starts with an introduction and rationale for study. Section two is the theoretical review as well as hypotheses development. Section three presents the research design, with empirical findings analyzed in Section four. Section five provides the general summary of the study, practical and theoretical implications.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Theoretical Review

Burgstahler and Dichev (1997), who examined anomalies in the distribution of accounting results provided the thresholds theory, which this study is learning towards as an underpinning. According to their framework, managers manage earnings to meet specific performance thresholds. These thresholds include the zero threshold (to avoid reporting losses) and the no-change threshold (to prevent a decline in income). Moreover, Degeorge et al. (1999) expanded on this concept by introducing a new threshold: Analysts' expectations. Financial analysts use this benchmark to evaluate a company's performance. Businesses control their performance to meet or exceed specific benchmarks (Vidal, 2010). Furthermore, achieving thresholds shows the stability and expansion of the business's financial performance, which helps businesses lower the cost of loans (Toumeh et al., 2023). Threshold management theory is appropriate to this study because firms may manage their leverage to maintain specific financial ratios as a firm might avoid taking on too much debt to ensure it meets a targeted credit rating, which are thresholds that can impact borrowing costs and investor perceptions. Moreover, firms might aim to sustain a minimum level of FCF to meet operational needs or to signal financial health to investors. If FCF dip below a particular threshold, it could trigger concerns about the company's ability to invest in growth or pay dividends to shareholders (Onaolapo and Shittu, 2022).

2.2. Free Cash Flow and Earnings Management

Free cash flow hypothesis states that profitable firms having high FCF would probably invest in discretionary items and tended to invest inefficiently. Such a situation can cause increased costs on agency and dispute between the managers and the financers. Similarly, Wandeda et al. (2021) highlighted that high FCF is linked to a higher likelihood of using EMP, especially in income-increasing accruals. FCF is positive as it indicates that the company having excess liquidity that can be reinvested for growth, or distributed to shareholders (Al-Omush et al, 2018). Authentic earnings management, however, refers to calculated efforts by managers to contrive financial performance measures (revenues, costs, and assets), in order to attain certain profit targets (Nuriyah and Amir, 2023; Odionye et al., 2025). Some studies, however, offer a more nuanced view of the relationship between FCF and EMP. For example, Chung et al. (2005) found that the link between FCF and EMP is more complex, with the strength of the relationship depending on factors such as the company's growth opportunities.

Furthermore, Pangesti and Chusnah (2023) assesses the influence of FCF on EMP and found a negative effect of FCF on EMP among Indonesian consumer goods firms. Similarly, Ahmed and Sulong (2024) reported that leverage was linked to a reduction in accrual-based EMP among Pakistani non-financial firms between 2004 and 2018. In a study among 241 Vietnamese firms, Mohdsuffian et al. (2020) as well as Khanh and Thu (2019) found that FCF positively influenced real EMP. Alzoubi (2016) also identified a positive and significant effect of FCF on accrual EMP in Jordan's business environment. In another study, Zakaria et al. (2015) reported a positive connection between FCF and accrual EMP in a sample of 273 firms using panel data. Chalak and Mohammadnezhad (2012) detected a comparable positive association in Iran. Other studies by Bukit and Iskandar (2009) in Malaysia and Bhundia (2012) in India also confirmed a positive correlation between FCF and accrual EMP. On the contrary, Al-Omush et al. (2018) reported a negative effect of FCF on accrual EMP in Jordan. Nelson and Ntui (2019), in their study in Kenya and Tanzania, observed a significant positive influence of FCF on accrual EMP. Elkalla (2017) also observed an oposite relationship in the MENA region. While the available research generally suggests a connection between FCF and EMP, the specific circumstances of each company and its environment can influence the strength and direction of this relationship. More research is required to develop these complexities and find out their implication for corporate policy formulation and financial reporting especially in the African regions. From the above discourse, the following hypothess were developed.

- H_{01}: FCF has no significant effect on accrual-based EMP.
- H_{02}: FCF has no significant effect on real EMP.

2.3. Leverage and Earnings Management Practices

The theories of the "debt covenant hypothesis" presented by Watts and Zimmerman (1986) suggests that firms with high leverage ratios are more inclined to engage in income-enhancing EMP to avoid breaching debt covenants and the associated penalties or restrictions. In sub-Saharan Africa, Akinsola et al. (2025) examined the role of oil resource rents and economic complexity on the debt burdens of oil-producing countries in the region and established a statistically negative association between economic complexity and the debt service. Literatures on the relationship between leverage and EMP further supports the idea that high leverage may prompt managers to engage in earnings management, particularly income-increasing accruals, to avoid the negative consequences of breaching debt covenants or signaling financial distress to creditors and stakeholders (Odior and Iwegbu, 2021; Yasa and Sintadeyi, 2023; Chindengwike, 2024). Though, some studies, like Kusumawati (2023), have found no significant impact of leverage on EMP. However, Nuriyanti and Trisnawati (2023) confirmed that leverage does indeed positively influence EMP. Emita et al. (2017) conducted a cross-country study across Asia and found a significant negative relationship between leverage and accrual EMP. Wandeda et al. (2021) in their search for the impact of institutional quality on the economic growth in sub-Saharan Africa indicated the positive influence of institutional quality on growth to be more prominent in the West Africa than other parts of the region. Jelinek (2007) found out that the firms with high growth prospect may not practice EMP because they have more interest in investing for future growth rather than manipulating earnings. In accordance with this, it has been revealed that the negative influence of leverage on firm value is aggravated when firms get involved in EMP that increases income which will invariably make various stakeholders and investors as distort investment decisions. Hence, this study filled the existing research gap by investigating the impact of leverage on both accrual and real EMP.

- H_{03}: Leverage does not significantly drive accrual-based EMP.
- H_{04}: Leverage does not significantly drive real EMP.

2.4. Conceptual Framework

Figure 1 depict relationship between study variables (Dependent variables: Accrual and real earnings management; Independent variables: FCF and leverage as well as Control variables: firm growth, firm age and firm size).

3. RESEARCH MEHODOLOGY

3.1. Population and Sample for the Study

All five hundred and ninety-nine (599) listed firms in six selected countries in sub-Saharan African countries as of

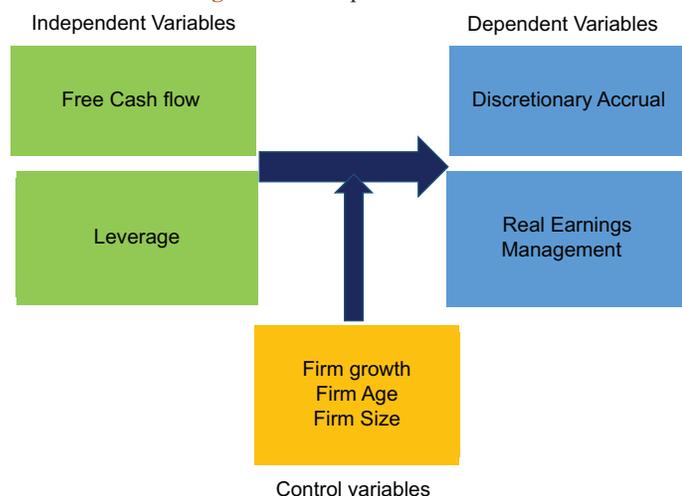**Figure 1:** Conceptual framework

Independent Variables

Dependent Variables

Free Cash flow

Discretionary Accrual

Leverage

Real Earnings Management

Firm growth
Firm Age
Firm Size

Control variables

Table 1: Countries and non-financial listed firms chosen for the study

Countries	Listed firms	Selected non-financial listed firms	Percentage
Ghana	31	12	39
Kenya	64	26	41
Nigeria	166	76	46
South Africa	250	127	51
Tanzania	25	7	28
Zimbabwe	63	31	49
Total	599	279	47

December 31, 2023, as shown in Table 1 below, represent the study population. Two (2) countries were chosen from three (3) regions (Eastern, Southern and Western regions). The central region was excluded from the study sample because two non-financial firms listed on the stock exchange in the region have no complete data for the year under study. A purposeful sampling technique was employed to select 276 non-financial listed firms with the required data for eleven (11) years from 2013 to 2023, giving 3,069 observations while Generalized Moment Method (GMM) estimator model was employed to analyze obtained data.

Table 2 shows a measurement of study variables and the source from which this study adapted the measurement was referenced.

3.2. Model Specification

As adapted, it was from the work of Ahmed and Sulong (2024) with slight modifications.

$$DA_{it} = \alpha + \beta_1 FCF_{it} + \beta_2 FG_{it} + \beta_3 FA_{it} + \beta_4 FS + \varepsilon_{it} \qquad (1)$$

$$REM_{it} = \alpha + \beta_1 FCF_{it} + \beta_2 FG_{it} + \beta_3 FA_{it} + \beta_4 FS + \varepsilon_{it} \qquad (2)$$

$$DA_{it} = \alpha + \beta_1 LEV_{it} + \beta_2 FG_{it} + \beta_3 FA_{it} + \beta_4 FS + \varepsilon_{it} \qquad (3)$$

$$REM_{it} = \alpha + \beta_1 LVE_{it} + \beta_2 FG_{it} + \beta_3 FA_{it} + \beta_4 FS + \varepsilon_{it} \qquad (4)$$

α is the intercept in this study, i is cross-sectional, t is time identifier, ε is a model error term, and $\beta_1, \beta_2, \beta_3, \beta_4,$ = Coefficients for the respective determinants.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 3 below assessed each variable based on minimum, maximum, mean, standard deviation, skewness as well as kurtosis. The mean for DA was 0.040, ranging from −3.174 to 8.349. Its standard deviation of 0.292 shows considerable dispersion around the mean. For REM, values ranged from −3.451 to 6.709, with a mean of 0.121 and standard deviation of 0.679, suggesting moderate dispersion. FCF exhibited a mean of

Table 2: Variables measurement

Variable	Acronym	Measurements	References
Dependent			
Accrual Based	DA	$$NDA = \frac{TA}{Ai_{t-1}} = \alpha_1 \left(\frac{1}{Ai_{t-1}} \right) + \alpha_2 \left(\frac{\Delta REV - RECi_t}{Ai_{t-1}} \right)$$ $$+ \alpha_3 \left(\frac{PPEi_t}{Ai_{t-1}} \right) + \alpha_4 \left(\frac{BMi_t}{Ai_{t-1}} \right) + \varepsilon_{it}$$ (Larcker and Richardson, 2004)	Oseni et al. (2022)
Real Earnings Management	REM	AOCF+APC - ADE. Rowchowdhury (2006) model	Shittu et al. (2023)
Independent			
Free cash flow	FCF	Non-Current Asset%Total Asset	Pangesti and Chusnah (2023)
Leverage	LEV	Total liability to total assets	Ahmed and Sulong (2024)
Control			
Firm Growth	FG	Sales	Oseni et al. (2022)
Firm Age	FAGE	Current years minus year of listing on the stock exchange	Onifade et al. (2023)
Firm Size	FS	The firm's total assets	Kusumawati (2023)

AOCF is Abnormal operating cash flow; APC is Abnormal production costs; ADE is Abnormal discretionary expense

Table 3: Descriptive statistics

Variable	Minimum	Maximum	Mean	Stand. Dev.	Skewness	Kurtosis	No. of sample firms
DA	−3.174	8.349	0.040	0.292	9.020	58.779	279
REM	−3.451	6.709	0.121	0.679	0.244	11.109	279
FCF	0.244	29.262	8.889	10.540	0.087	2.434	279
LEV	0.003	17.105	6.896	4.016	1.354	4.874	279
FG	2.751	7.564	5.177	0.868	0.027	2.678	279
FA	1.000	126.000	28.436	19.345	1.179	4.538	279
FS	2.979	9.306	6.591	1.075	−0.366	2.914	279

DA is discretionary accrual, REM is real EMP, FCF is free cash flow, LEV is leverage, FG is firm growth, FA is firm age, FS is firm size

8.889, spanning from 0.244 to 9.262, with a standard deviation of 10.540 demonstrating substantial variability. LEV values ranged between 0.003 and 17.105, with a mean of 6.896 and standard deviation of 4.016, indicating significant dispersion. Regarding control variables, FG, FA, and FS displayed means of 5.177, 28.436, and 6.591, with standard deviations of 0.868, 19.345, and 1.075 respectively. Most variables exhibited positive skewness, indicating data have normal distribution curve by concentrating on the right side. Also, Kurtosis values suggest certain variables, particularly DA and REM, were highly concentrated.

4.2. Multicollinearity Test

Table 4 shows a test for multicollinearity between study variables using Pearson moment correlation. The rule of thumb is that when the coefficient between variables is >0.8 (absolute value), it is a sign of multicollinearity. Thus, findings in Table 4 reveal that the data set is free from multicollinearity problems since the highest absolute value of 0.660 (66%) is the relationship between FA and FG, which is less than the threshold of 80%.

4.3. Effect of Free Cash Flow and Leverage on EMP in Eastern Region of Sub-Saharan Africa

In eastern region of sub-Saharan Africa, as shown in Table 5. FCF have positive but not significant effect on DA in both Kenya ($\beta = 0.64$(P>|t| = 0.524 > 0.05) and Tanzania ($\beta = 1.20$(P>|t| = 0.229 > 0.05). However, it shows negative and significant effect on REM ($\beta = -6.18$(P>|t| = 0.000 < 0.05) in Kenya while positive but insignificant effect was reveal on REM ($\beta = 0.61$(P>|t| = 0.545 > 0.05) in Tanzania. This suggest that sampled firms in Kenya do not engage in REM with FCF. Moreover, LEV have positive significant effect on DA ($\beta = 5.24$(P>|t| = 0.000<0.05)) and REM ($\beta = 7.15$(P>|t| = 0.000<0.05)) in Kenya. This implies that selected firms in Kenya are engage in accrual and real EMP when they are highly geared. Though, negative and insignificant effect of leverage reveal on both DA ($\beta = -1.14$(P>|t| = 0.255 > 0.05) and REM ($\beta = -0.66$(P>|t| = 0.512 > 0.05) in Tanzania. Furthermore, FG have negative effect on DA ($\beta = -1.52$(P>|t| = 0.129 > 0.05)) and positive influence on REM($\beta = 1.71$(P>|t| = 0.086 > 0.05)) in Kenya but both are not significant. Likewise, it shows not significant positive influence on DA ($\beta = 1.27$(P>|t| = 0.204 > 0.05)) and negative effect on REM ($\beta = -0.71$(P>|t| = 0.480 > 0.05)) in Tanzania. Furthermore, FA reveals negative insignificant influence on DA ($\beta = -0.26$(P>|t| = 0.794 > 0.05)) while positive significant effect was reveals on REM ($\beta = 2.33$(P>|t| = 0.020<0.05)) which suggests that selected firms in Kenya are engage in accrual EMP as more they are older. Nevertheless, positive insignificant effect was reveal on both DA ($\beta = 1.28$(P>|t| = 0.202 > 0.05)) and REM ($\beta = 0.72$(P>|t| = 0.472 > 0.05)) in Tanzania. In addition,

Table 4: Correlation matrix

Variable	DA	REM	FCF	LEV	FG	FA	FS
DA	1.000						
REM		1.000					
FCF	0.105	−0.132	1.000				
LEV	−0.046	0.141	−0.192	1.000			
FG	0.035	−0.025	−0.030	−0.169	1.000		
FA	0.009	−0.007	−0.104	−0.119	0.660	1.000	
FS	0.017	−0.022	0.025	−0.072	0.103	0.065	1.000

DA is discretionary accrual, REM is real EMP, FCF is free cash flow, LEV is leverage, FG is firm growth, FA is firm age, FS is firm size

FS had negative effect on DA ($\beta = -5.74$(P>|t| = 0.000<0.05)) while it shows positive influence on REM ($\beta = 9.48$(P>|t| = 0.000 < 0.05)) which implies that larger firms are expose to REM in Kenya. Conversely, negative insignificant influence of FS was reveal on DA ($\beta = -1.27$(P>|t| = 0.206 > 0.05)) and REM ($\beta = -0.71$(P>|t| = 0.472 > 0.05)) in Tanzania.

4.4. Effect of FCF and Leverage on EMP in Southern Region of Sub-Saharan Africa

Table 6 shows the results of selected countries in southern region of sub-Sahara Africa which include South of Africa and Zimbabwe. FCF have positive and significant influence on DA in Kenya ($\beta = 2.16$(P>|t| = 0.031 < 0.05) as well as Tanzania ($\beta = 3.29$(P>|t| = 0.001 < 0.05) which suggests that selected firms in southern region of sub-Sahara Africa are engage in accrual EMP through FCF. This can happen when manager invest in negative present value investment with intention of derive personal benefits which then resort in EMP to compensate for the negative effect of this project. Though, negative insignificant effect was reveal on REM ($\beta = -1.04$(P>|t| = 0.296 > 0.05) in South Africa while positive insignificant influence was reveal on REM ($\beta = 0.20$(P>|t| = 0.845 > 0.05) in Zimbabwe. Moreover, LEV have positive significant influence on DA ($\beta = 7.19$(P>|t| = 0.000<0.05)) and REM ($\beta = 6.75$(P>|t| = 0.000<0.05)) in South Africa. This implies that selected firms in South Africa are engage in accrual and real EMP with high leverage. Although, negative and insignificant influence of leverage reveal on DA ($\beta = -0.02$(P>|t| = 0.987 > 0.05) in Zimbabwe while it shows negative and significant effect on REM ($\beta = -8.72$(P>|t| = 0.000 < 0.05) which implies that selected firms in Zimbabwe do not engage in REM regardless of their level of leverage. Control variables were also assessed. FG have positive influence on DA ($\beta = 9.88$(P>|t| = 0.000 < 0.05)) and REM($\beta = 5.61$(P>|t| = 0.000 < 0.05)) in South Africa which suggests that the more selected firms are growth the more they engage in EMP. However, negative effect of FG was observe on DA ($\beta = -4.19$(P>|t| = 0.000 < 0.05)) while negative but not significant effect was reveal on REM ($\beta = -1.55$(P>|t| = 0.121

Table 5: Effect of free cash flow and leverage on EMP in Eastern region of sub-Saharan Africa

Countries	Kenya		Tanzania	
Variables	DA Model	REM Model	DA Model	REM Model
DA_{t-1}	−7.32** (0.000)		−1.29 (0.198)	
REM_{t-1}		9.06** (0.000)		−0.04 (0.966)
FCF	0.64 (0.524)	−6.18** (0.000)	1.20 (0.229)	0.61 (0.545)
LEV	5.24** (0.000)	7.15** (0.000)	−1.14 (0.255)	−0.66 (0.512)
FG	−1.52 (0.129)	1.71 (0.086)	1.27 (0.203)	−0.73 (0.468)
FA	−0.26 (0.794)	2.33**(0.020)	1.28 (0.202)	0.72 (0.472)
FS	−5.74**(0.000)	9.84**(0.000)	−1.27 (0.204)	−0.71 (0.480)
Constant	9.07**(0.000)	−9.36** (0.000)	1.27 (0.206)	0.72 (0.472)
Sargan Test and P-value	17.373 (1.000)	20.280 (1.000)	3.59 (1.000)	6.83 (1.000)
Wald Chi² Statistic and P-value	281.75** (0.000)	8601.29** (0.000)	26.44** (0.000)	27.09** (0.00)
1st order autocorrelation test	−2.1631 (0.030)	−2.019 (0.043)	−0.662 (0.5077)	−0.6395 (0.5225)
2nd order autocorrelation test	−1.8903 (0.0587)	0.97447 (0.3298)	−0.4428 (0.6579)	−0.93087 (0.3519)

**Indicates significance at the 5% level. P values are given in parentheses. DA is discretionary accrual, REM is real EMP, FCF is free cash flow, LEV is leverage, FG is firm growth, FA is firm age, FS is firm size

Table 6: Effect of FCF and leverage on EMP in Southern region of sub-Saharan Africa

Countries	South Africa		Zimbabwe	
Variables	DA Model	REM Model	DA Model	REM Model
DA_{t-1}	72.80** (0.000)		−9.03** (0.000)	
REM_{t-1}		40.24** (0.000)		16.00** (0.000)
FCF	2.16** (0.031)	−1.04 (0.296)	3.29** (0.001)	0.20 (0.845)
LEV	7.19** (0.000)	6.75** (0.000)	−0.02 (0.987)	−8.72** (0.000)
FG	9.88** (0.000)	5.61** (0.000)	−4.19** (0.000)	−1.55 (0.121)
FA	5.21**(0.000)	−0.51 (0.611)	25.32**(0.000)	−9.19** (0.000)
FS	−3.49** (0.000)	−1.37 (0.170)	−3.87** (0.000)	4.70** (0.000)
Constant	−10.61** (0.000)	−6.96** (0.000)	−0.81 (0.419)	3.36 (0.001)
Sargan Test and P-value	68.0305 (0.0801)	71.0273 (0.0497)	28.3341 (0.9978)	26.4643 (0.9991)
Wald Chi² Statistic and P-value	9494.18** (0.000)	1967.7** (0.000)	2962.4** (0.000)	2100.3** (0.000)
1st order autocorrelation test	−2.923 (0.0035)	−3.9024 (0.0001)	−1.6112 (0.1071)	−1.74 (0.0819)
2nd order autocorrelation test	1.4316 (0.1523)	0.6269 (0.5307)	−0.9393 (0.3476)	−0.5429 (0.5872)

**Indicates significance at the 5% level. P-value are given in parentheses. DA is discretionary accrual, REM is real EMP, FCF is free cash flow, LEV is leverage, FG is firm growth, FA is firm age, FS is firm size

> 0.05)) in Zimbabwe. Furthermore, FA shows positive and significant effect on DA (β = 5.21(P>|t| = 0.000<0.05)) and REM (β = 25.32(P>|t| = 0.000<0.05)) in both South Africa and Zimbabwe which implies that selected firms in Southern region are engage in accrual EMP as more they are older. However, FA reveal negative but not significant effect on REM (β = −0.51(P>|t| = 0.611 > 0.05)) in South Africa while it shows negative influence on REM (β = −9.19(P>|t| = 0.020 > 0.05)) in Zimbabwe. Moreover, FS have negative and significant influence on DA in South Africa (β = −3.49(P>|t| = 0.000<0.05)) and Zimbabwe (β = −3.87(P>|t| = 0.000<0.05)) which suggests that selected firms in Southern Africa region are not engage in DA regardless of their size. However, FS reveal negative and insignificant effect on REM (β = −1.37(P>|t| = 0.170 > 0.05)) in South Africa while it reveals positive and significant effect on REM IN Zimbabwe which implies that larger firms in firms in Zimbabwe are engage in REM.

4.5. Effect of FCF and Leverage on EMP in Western Region of Sub-Saharan Africa

Ghana and Nigeria were considered in Western region of sub-Saharan Africa as shown in Table 7 were selected for the study. FCF reveal negative and insignificant influence on DA (β = −1.61(P>|t| = 0.107>0.05) and REM (β = −1.42(P>|t| = 0.154 > 0.05) in Ghana. Similarly, FCF shows negative insignificant

effect on DA (β = −0.05(P>|t| = 0.958 > 0.05) in Nigeria. However, it reveals negative and significant effect on REM (β = −3.86(P>|t| = 0.000 < 0.05) in Nigeria which implies that selected firms in Nigeria were not engage in REM with their free cash flow. Besides, LEV reveal positive insignificant effect on DA (β = 0.18(P>|t| = 0.858 > 0.05) in Ghana as well as REM (β = 0.37(P>|t| = 0.710 > 0.05) in Nigeria. Also, LEV show positive and significant effect on REM (β = 2.73(P>|t| = 0.006 < 0.05) in Ghana and on DA (β = 1.98(P>|t| = 0.048 < 0.05) in Nigeria. This suggest that selected firms Ghana and Nigeria were engage in REM and DA respectively in structure their leverage. Also, FG have negative effect on DA (β = −2.03(P>|t| = 0.042 < 0.05)) and REM(β = −2.06(P>|t| = 0.040 < 0.05)) in Ghana. However, FG reveal positive and significant effect on DA (β = 6.57(P>|t| = 0.000<0.05)) while it shows negative and significant effect on REM (β = −7.77(P>|t| = 0.000<0.05)). These implies that selected firms in Ghana are not engage in EMP regardless of their growth level. In Nigeria, selected firms are engage in accrual EMP when they are growing while they are not partaking in REM irrespective of their growth level. FA was positive and significant on DA (β = 3.04(P>|t| = 0.002 < 0.05)) and REM (β = 2.68(P>|t| = 0.007 < 0.05)) in Ghana as well as DA in (β = 2.86(P>|t| = 0.0.004 < 0.05)) Nigeria. On the other hand, FA reveal negative on REM (β = −7.58(P>|t| = 0.000 < 0.05)) in Nigeria. Furthermore, FS have negative influence on

Table 7: Effect of FCF and leverage on EMP in Western region of sub-Saharan Africa

Countries	Ghana		Nigeria	
Variables	DA Model	REM Model	DA Model	REM Model
DA_{t-1}	0.60 (0.545)		−19.35**(0.000)	
REM_{t-1}		−1.56 (0.119)		21.99**(0.000)
FCF	−1.61 (0.107)	−1.42 (0.154)	−0.05 (0.958)	−3.86**(0.000)
LEV	0.18 (0.858)	2.73**(0.006)	1.98**(0.048)	0.37 (0.710)
FG	−2.03**(0.042)	−2.06**(0.040)	6.57**(0.000)	−7.77**(0.000)
FA	3.04**(0.002)	2.68**(0.007)	2.86 (0.004)	−7.58 (0.000)
FS	−0.21 (0.833)	0.18 (0.859)	2.44**(0.015)	4.19**(0.000)
Constant	−2.36** (0.018)	0.44 (0.658)	−9.68 (0.000)	1.36 (0.172)
Sargan test and P-value	4.269 (1.000)	5.122 (1.000)	49.621 (0.6065)	53.190 (0.4668)
Wald χ^2 statistic and P-value	49.30** (0.000)	103.57** (0.000)	502.80** (0.000)	2427.25 (0.000)
1st order autocorrelation test	−1.4772 (0.1396)	−1.4941 (0.1352)	−2.9113 (0.0036)	−3.2124 (0.0013)
2nd order autocorrelation test	1.1677 (0.2429)	−0.91603 (0.3596)	1.0983 (0.2721)	1.0945 (0.2737)

**Indicates significance at the 5% level. P-values are given in parentheses

DA (β = −0.21(P>|t| = 0.833 > 0.05)) and positive effect on REM (β = 0.18 (P>|t| = 0.859 > 0.05)) in Ghana, but they are not significant. However, FS shows positive and significant effect on DA (β = 2.44(P>|t| = 0.015<0.05)) and REM (β = 4.19(P>|t| = 0.000<0.05)) which implies that larger firms are probable to engage in EMP in Nigeria.

4.6. Effect of FCF and Leverage on EMP Across Six Countries

A dynamic analysis was employed to assess the influence FCF and LEV on DA and real EMP among Non-Financial Listed Firms (NFLF) in SSA. The results from the dynamic model estimation indicated that both FCF and LEV had significant effects on DA and REM. The model also captured the speed of adjustment through the coefficient δ, with the inverse relationship reflected in the term (1−δ), associated with the lagged dependent variable (DAt−1). This lagged DA coefficient was negative and significant at 5%, confirming the presence of adjustment dynamics in accrual behavior. As presented in Table 8, FCF had a positive and significant influence on DA (β = 0.002, P>|t| = 0.006 < 0.05), indicating that firms with higher FCF tend to exhibit greater discretionary accruals. LEV similarly reveal a positive and significant effect on DA (β = 0.003, P>|t| = 0.021 < 0.05), implies that more leveraged companies are more probable to manipulate their earnings through accruals. Among the control variables, firm growth (FG) negatively and significantly impacted DA (β = −0.141, P>|t| = 0.012 < 0.05), while firm age (FA) also negatively and significantly influenced DA (β = −0.235, P>|t| = 0.000<0.05). Conversely, firm size (FS) positively and significantly affected DA (β = 0.425, P>|t| = 0.000 < 0.05), indicating that larger firms are more likely to engage in accrual EMP.Regarding REM, the analysis showed that FCF had a negative and significant effect (β = −0.261, P>|t| = 0.000 < 0.05), which suggests that higher FCF is associated with less real EMP. In contrast, LEV had a positive and significant effect on REM (β = 0.126, P>|t| = 0.000<0.05), implying that firms with higher leverage are more likely to manipulate earnings through real activities. The control variables FG, FA, and FS showed positive but statistically not significant effects on REM, with coefficients and P-values as follows: FG (β = 1.000, P>|t| = 0.118>0.05), FA (β = 0.004, P>|t| = 0.369 > 0.05), and FS (β = 0.000, P>|t| = 0.815 > 0.05).

Diagnostic tests were conducted to assess validity of model. The Wald test statistics were 204.81 for DA and 95.04 for REM, with

Table 8: Effect of FCF and leverage on EMP in selected six countries

Variables	DA model	REM model
DA_{t-1}	0.129** (0.000)	
REM_{t-1}		0.3292** (0.000)
FCF	0.002** (0.006)	−0.261** (0.000)
LEV	0.003** (0.021)	0.126** (0.000)
FG	−0.141** (0.012)	0.100 (0.118)
FA	−0.235** (0.000)	0.004 (0.369)
FS	0.425** (0.000)	−0.000 (0.815)
Constant	−1.350** (0.000)	−0.125** (0.033)
Sargan Test and P-value	62.249 (0.3672)	54.055 (0.2864)
Wald chi2 Statistic and P-value	204.81**(0.000)	95.04** (0.000)
1st order autocorrelation test	−2.7282 (0.0064)	−4.709 (0.000)
2nd order autocorrelation test	1.5187 (0.1288)	0.409 (0.682)

** indicates significance at the 5% level. P-value are given in parentheses

probability values of 0.000, indicating a robust model fit. The Sargan test values were 62.249 for DA and 54.055 for REM, with P-values of 0.3672 and 0.2864, respectively. These results suggest that the instruments used in the estimation were valid and appropriate. Additionally, the Arellano-Bond test for second-order autocorrelation revealed no significant serial correlation, confirming the reliability of the results. Other confirmation of the regression estimates were done through the Arellano-Bond test for the second-order autocorrelation. For the discretionary accruals (DA), the Z-statistic was 1.5187; P = 0.1288, and for REM, the Z-statistic was 0.409; P = 0.682. With both P > 0.05, there is no way the null hypothesis of no second-order autocorrelation be rejected (Oseni et al., 2022). This supports the credibility of the model's estimates and worthiness of the results for possible policy implications.

4.7. Discussion of Findings

The results from the analysis of REM explained that there was a negative and significant influence of FCF. When based from the above finding, the available cash had not been utilized by managers for REM activities. an outcome that is different to that observed by Khanh and Thu (2019) in the case of Vietnam and Elkalla (2017) for the MENA region. Non-financial firms in sub-Saharan Africa (SSA) seem to have used capital structure to manage earnings instead of spending excess cash to manipulate earnings. This shows evidences from previous finding in Indonesia (Nanik and Nur, 2019) Palestine (Abdelkarim and Zuriqi, 2020),

Kore (Anabelen et al., 2020) and Nigeria (Ogiriki and Iweias, 2020). This pattern, however, contradicts the results of the studies conducted by Owusu et al. (2020) and Owusu et al. (2020), which revealed a different trend in the behaviour of REM.Also, FG that have negative, and statistically significant relationship with DA implies that firms showing great potential for growth in sub-Saharan Africa are less likely to influence earnings by means of accruals. The findings are in keeping with the results of Ugrin et al. (2017), Khanh and Thu (2019) and Nanik and Nur (2019). However, this outcome differs from the results of Das et al. (2018), who reported a positive relationship between growth and DA.Firm age also emerged as a significant factor. Older firms in the sample were less likely to rely on discretionary accruals for earnings management. This negative relationship aligns with the findings of Bassiouny et al. (2016), though it opposes the results of Orazalin and Akhmetzhanov (2019), who observed that older firms were more prone to such practices.On the contrary, firm size had a positive and significant association with DA. This means that larger non-financial listed firms in sub-Saharan Africa were more likely to manipulate earnings using accruals. The finding aligns with previous research on Rajeevan and Ajward (2020) and Abubakar et al. (2020). Nonetheless, it is contrary to the results of (Anabelen et al., 2020; Nyatichi et al., 2020), who demonstrated no or reverse changes.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The research findings conclude that FCF and leverage are positive yet important predictors of accrual EMP. This is an implication that a company that has a lot of cash and a high debt rate will tend to manipulate its accounting to adjust its earnings. Equally, firm size is a positive and significant influence, which demonstrates that larger firms are prone to have a predisposition or be in a better position to do accrual EMP. On the other hand, the growth and age of firms have a negative and significant association with accrual EMP. This means firms which are flourishing and those that have been in existence longer are unlikely to engage in such practices. Moreover, there is a negative and significant relationship between FCF and real EMP, which indicates that firms having cash in their disposal are likely to not distort real business activities in order to affect reported earnings. However, the leverage still generates positive and significant impact, which means that companies which are overloaded with debt may perform real activity alteration. More so, the cross-sector analysis demonstrates that FCF and leverage play an important role in the determination of EMP in sub-Saharan Africa. To address the risks of aggressive EMP, policymakers should also pay attention to increasing the level of transparency, ethical reporting, and regulatory frameworks. In the meantime, EMP can be greatly minimized by means of stringent regulations and best practices.

5.2. Recommendations

According to these results, the research recommends that the firms in sub-Saharan Africa should be cautious when they are exploiting the non-current asset with the aim of using it as an instrument of securing debt. The use of excessive amount of debt can cause earnings pressure and therefore raise the financial risk level. Investors should carry out financial analysis, particularly one that will provide cash flow statements and level of debts. Earnings management could be manifested in high FCF and leverage, and thus, more attention is required. Other than financial analysis, the investors ought to engage the management of companies in dialogue to foster the culture of transparency and responsibility in presenting finances. The regulators ought to intervene by strengthening not only the financial reporting requirements but rather, the procedures in which the firms report the leverages and cash flow positions. The manipulation would be avoided by tightening the control over the entities that are highly leveraged and providing pertinent punishment on misleading reporting. Promotion of financial literacy is also important. Educating investors and the general population on financial statement interpretation can offer the investors with a measure of how to identify a financial statement earnings manipulation and then make more credible investment decisions. Firms should implement sensible leverage policies that will produce long-term financial soundness instead of immediate earnings. Disclosure in giving reasons behind the accounting decisions earns credibility among the investors and lessens suspicion. Moreover, the application of such alternative performance indicators as the evaluation of operational efficiency and long-term value may alter the attention from earnings' figures only. Finally, dealing with the earnings management resulting from leverage and FCF necessitates joint efforts of the companies, investors, and the regulators. With enhanced governance, improved reporting standards and enhanced financial awareness, the stakeholders in the sub-Saharan Africa can minimise the risks of manipulations, investor confidence and an economical environment that is stable and sustainable.

5.3. Theoretical and Practical Implications of the Study

This research furthers the material existing in the literature by considering the unique setting of sub-Saharan Africa. It touches on the manner through which the unusual economic environment, legislation, and approach towards finances of this region determine the practices of financial reporting. Taking these local dimensions into consideration, the current research results in the opportunities for theoretical models to embrace the rampant regional problems such as economic volatility, inefficiencies in the market, and the laggard governance. The results policy side would mean that there should be stricter regulations in terms of earnings disclosure. In the economies where companies possess huge quantities of free cash and are strongly leveraged, strict rules are required to regulate the threat of financial manipulation, and improve the transparency, in general. The policy makers also need to remember how they can promote sustainable financial behaviour, by using proper leverage and healthy cash flow policy. This kind of dependence on manipulation of earnings, based on the short term, can be encased by such measures and assisted in the improved financial levels. The study helps in coming up with better regulation structures, good governance and leads to ethical practice in financial reporting which are all much needed in the long run economy and stability of the sub-Saharan Africa.

5.4. Limitations of the Study

The study limited in generalisation to non-financial listed companies in six sub-Saharan African nations, but not to financial institutions and non-listed companies. Second, the secondary data can lead to measurement errors and limit the analysis into the managerial motives. Third, the use of the models of Larcker and Richardson as well as Roychowdhury (2006) might not address all aspects of the earnings management. Also, macro-economic and institutional variations between the countries were not highly regulated. Lastly, it is possible that the timeframe of the study (2013-2023) does not portray structural changes over time, which limits the generalisability of the results to various periods and settings.

5.5. Suggestions for the Future Studies

The future research can broaden the study by involving financial institutions and unlisted companies to increase generalisability. Further studies can also examine other areas or do cross-continental comparisons to find out how earnings management practices are contextually different. The inclusion of primary data, including interviews or surveys, might offer further information about the motivations of the management of these companies and the processes of governance. Further studies might look into the role of institutional quality as a moderator, corporate governance schemes, or ownership structure as a moderator of future work. It would also be better to use other empirical models and extend time horizons in order to provide robustness. Lastly, further research might examine the influence of new drivers of earnings management behaviour, including digitalisation, ESG practices, regulatory reforms.

6. ACKNOWLEDGEMENT

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