Original Research Article

Interlocking Board Membership and Financial Performance of Publicly Quoted Companies in Sub-Saharan Africa

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Abstract

This study investigated the effect of interlocking board membership on financial performance of publicly quoted companies in sub-Saharan Africa. Ex-post facto research design was adopted and secondary data were obtained from yearly audited annual reports and accounts of publicly listed companies. The study was conducted using sixty (60) publicly listed companies drawn from all sectors in three (3) countries of sub-Saharan Africa namely; Nigeria, Kenya and South Africa, from 2013–2023. Data obtained were analyzed using descriptive, post-estimation, and inferential statistical techniques. The estimation technique was the generalized method of moment and the results revealed that interlocking board membership insignificantly influence financial performance proxied by return on assets of the publicly listed companies in sub-Saharan Africa. The implication of the finding is that board interlocking board membership is not a major driver of performance of quoted companies in sub-Saharan Africa. The study recommends among others that interlocking board membership should not be encouraged as the study found it insignificant in explaining financial performance.
Keywords: Corporate Governance Code, Firm Performance; Return on Assets, sub-Saharan Africa, Stewardship Theory.
JEL Classification: L25; M14.

1. INTRODUCTION

The last decade has witnessed growing interest on research in interlocking board membership and financial performance of quoted companies, with prime focus on developed countries. Interlocking board membership can be used to describe a situation where a board member of a company is occupying the position of a board member in another company (Hundal, Borén & Eskola, 2025). Generally, corporate board is tasked with trusteeship to control, protect and enhance performance and value of shareholders by means of strategic supervisions (Wang & Ooi, 2023). For this reason, lack of or absence of a resilient board may result to underperformance.

Performance as observed by Ahamed (2022) connotes how well a company is able to actualize it goals in the most efficient way. Morrison, Adu and Guo (2024) stated that performance can be measured using either of financial or non-financial measures. While financial performance metrics can be denoted in quantitative terms, non-financial measures are more of qualitative metrics. In this study, performance was measured using financial performance metrics. Studies indicate that financial performance is largely dependent on firm-level measures such as return on assets, return on equity, return on capital employed, earnings per share, dividend per share, return on investments, book value per share, among others (Hussam & Al-Shammari, 2021).

In the literature, studies have argued whether interlocking board membership can be defensible in terms of its contribution to performance (Al'azhary, Suherman & Buchdadi, 2022; Muzata & Marozva, 2022; Chen, *et al*., 2023; Mohammed, Ibrahim & Maitala,

2023). One line of empirical studies contend that increase in corporate failure is predominantly caused by inadequate balance of the board membership and that the practice of interlocking membership can enhance this balance (Hidayah, *et al*., 2021; Hlaing & Stapleton, 2022; Rohaida, Kamarun & Hasnah, 2022).

On the other hand, there is another line of argument that a mismatch of interlocking board membership has led to failure of companies, hence impeding financial performance (Ahamed, 2022; Mohammed, *et al*., 2023; Chen, *et al*., 2023). Arising from the foregoing, researchers do not agree on the extent to which interlocking board membership affects firm performance. This disagreement is hinged on the fact that while interlocking board membership is supposed to influence motivational level of performance, the legal and political environment in some sub-Saharan Africa nations is weak while governance mechanisms are inefficient or poor.

The Governance Index and Regulatory Quality Index by the World Bank still remained negative for some countries in sub-Saharan Africa such as Nigeria, Ghana, Kenya, in the last decades, regardless of series of amendments to their corporate governance codes (CCC). Moreover, the sub-Saharan Africa economy is plagued with corruption than many other countries. Therefore, CEOs may be prone to unethical and opportunistic behaviours when they have dual presence in several companies.

Given the above contentions, there are limited numbers of studies that have examined the effect of interlocking board membership on organizational performance of publicly listed companies sampled across all sectors, particularly as it concerns countries in sub-Saharan Africa. Consequent upon the above, there is no consensus in the literature as to the extent to which interlocking board membership together with code of corporate governance (contextualized in this study as control variable) affect organizational performance in sub-Saharan Africa; this call for an empirical investigation which this study attempts to satisfy. Therefore, the objective of this study is to investigate, using large data sample from three selected sub-Saharan African countries, the effect of interlocking board membership on financial performance of quoted firms.

2. REVIEW OF RELATED LITERATURE
2.1 Interlocking Board Membership
Practically, the board is responsible for controlling the behaviour of management. Its prime role is that of trusteeship to control, protect and enhance shareholders value via strategic supervision. In modern organizations, the board represents one of the key internal corporate governance systems (Wang & Ooi, 2023). Lack or absence of a stronger board is often attributed to failure of numerous organizations (Yuli, Dyah & Aulia, 2023). According to Iliyasu, Nasir and

Umar (2020), the board helps in giving an overview of the standard expected from management. Hence, the board can assist in ensuring proper transparency, accountability and integrity of information as well as in facilitating financial performance and the overall interests of shareholders (Ibrahim & Ahmed, 2020).

The board is deemed to possess some attributes known as board attributes. Board attributes refers to those characteristics, elements, features or traits that can be used to describe the quality of a board. In the literature, several measures of board attributes have been identified. It includes, but not limited to, age, member tenure, size, gender diversity, political connection, nationality, independence, interlocking membership, frequency of meeting etc. Notably, studies found that these attributes have the tendency to influence financial performance (Chen, *et al*., 2023; Chen & Hassan, 2021; Yangzi, 2022); however, the findings are mixed. Be that as it may, this study employed one board attribute namely, interlocking board membership, given its peculiarity and scanty empirical research on it.

The term board interlocking board member or membership refers to where a board member occupies the position of a board member in more than one company. It also refers to where a board member is occupying the position of a board member in different companies. Ahmad, Sadiqa and Khan (2021) asserted that the presence of interlocking board membership negatively influence organizational performance. On the other hand, the study by Nurul, *et al*., (2020) revealed that inter-locking board membership positively influence organizational performance. In view of the above, there is mixed findings on the interaction between inter-locking board membership and organizational performance.

Furthermore, it appears that there are limited studies that had assessed whether inter-locking board membership influences organizational performance in sub-Sahara Africa; hence there is a need to carry out an investigation as to whether inter-locking board membership affects the level of performance of publicly listed companies in sub-Sahara Africa. In this study, interlocking board membership was measured via dichotomous variable '1'; where a board member occupies the board of another company, and otherwise as '0'

2.2 Financial Performance
Performance refers to how well an organization is able to realize it goals in the most effective and efficient way. It can be ascertained through financial and non-financial measures (Ahamed, 2022). In this study, performance was measured using financial performance, expressing relationship between variables reported in annual statements, such as return on assets (ROA), return on equity (ROE), return on capital employed (ROCE), earnings per share (EPS), return on investment (ROI),

dividend per share (DPS), book value per share, among others. On the other hand, non-financial performance measures include but not limited to customers' satisfaction, employee retention, and product quality.

According to Appah *et al*., (2020), performance is a core issue in strategic management as most strategic management studies employ the construct of business performance in a bid to examine various strategy contents and processes. In the literature, the import of performance is vivid via the many prescriptions offered for financial performance enhancements (Chen, *et al*., 2023). Research indicates that organizational performance is largely dependent on financial-based measures (Hussam & Al-Shammari, 2021). Consequently, studies either used financial-based or market-based measures.

Financial-based measures are broadly seen as effective ways companies use in evaluating their performance (Mohammed, *et al*., 2023). In this study, one financial-based measure was employed, that is, return on assets (ROAs). ROAs usually are computed as net incomes divided by total assets or ratios of operating income to total assets. Hence, this study included ROAs as organizational performance variable in order to resolve the puzzle in management literature where some prior studies find either negative/positive link between interlocking board membership and financial performance of publicly quoted companies in sub-Saharan Africa.

Broadly, ROA is often computed on the basis of net income divided by total assets or the ratio of operating income to total assets. However, in this study, ROA was measured as net profit after tax divided by total assets. Prior studies (Wang & Ooi, 2023; Yuli, *et al*., 2023; Iliyasu, *et al*., 2020) showed mixed results on how the board affects ROA of companies. Hence, this study included ROA as a financial performance metric in order to resolve the variable definition problem in the literature that has made studies found either negative or positive relationship between ROA and performance.

2.3 Code of Corporate Governance
Corporate governance aids organizations in aligning activities of management for the overall good of shareholders (Soesetio, Adiningsih & Rudiningtyas, 2022). Sobhan (2021) stated that corporate governance is a structure of rules or laws controlling organizations' activities. In the same vein, Rath, *et al*., (2020) referred to corporate governance as the mechanisms put in place in directing the affairs of an organization towards achieving increased performance which brings enhancement in the value of shareholders. The role corporate governance plays in enhancing organizational performance has been a subject of debate in the literature in both developed and developing nations.

Corporate governance guarantees credibility, accountability and transparency to maintain clear-cut disclosure of facts that would result to increased organizational performance (Nurul *et al*., 2020). Over the years, there have been series of changes in code of corporate governance in most countries of sub-Sahara Africa. Some affected countries in sub-Saharan Africa where there has been series of changes in code of corporate governance include but not limited to Nigeria, South Africa, Kenya, Malawi, Mauritius, Namibia etc. In Nigeria for instance, Securities and Exchange Commission (SEC) issued Code of Best Practices of Corporate Governance in 2003 which was reviewed in 2006 and 2017 as a means of strengthening corporate governance practices (Akinwole & Ajide, 2020).

In South Africa, the King's Report of Corporate Governance Code was issued in 1994 to promote corporate governance practices due to the series of executive directors' misuse of their powers leading to financial scandals. The code was also aimed at enhancing the level of accountability, transparency and safeguarding shareholders' interests (Erik & De Wet, 2023). In 2011, the current King IV report on corporate governance practices was revised and subsequently revised again in 2016; hence South Africa is a product of three codes of governance reviews, the first being in 1994, followed by 2011 and lastly in 2016.

In Kenya for instance, several codes of corporate governance have been issued; the codes review occurred in 2010 and 2022 as a way of strengthening mechanisms of corporate governance (Akinwole & Ajide, 2020). In this study, the relationship between the codes of corporate governance and organizational performance in sub-Sahara Africa was examined using codes of corporate governance as a control variable. Specifically, dummy variable was used as a measure of codes of corporate governance; dummy variable '1' was assigned to a period where changes in codes of corporate governance exists and if otherwise, '0'.

In the literature, there is no clear result as to whether changes in codes of governance control the relationship between executive remuneration, corporate governance variables and organizational performance in sub-Saharan Africa in a single study; hence, the need to see the controlling effect of change in the codes of corporate governance in the relationship between corporate governance variables and organizational performance in sub-Saharan Africa.

2.4 Theoretical Framework
This study was hinged on the stewardship theory propounded by Donaldson and Davis in 1991. The theory is concerned with the notion that management should consider interests of the organization with high esteem before their interest. The theory focuses on actions that are geared towards the benefit of a company by management. It does not permit the postulation that

the boards or executives drive are dissimilar from those of owners of wealth. Hence, management has to align their interest to those of the company for the foreseeable future.

Albrecht, Albrecht and Albrecht (2004) as cited in Nurul, *et al.,* (2020) opined that the theory showed that interests of companies' executives-stewards is linked with interests of the organization and its owners, unlike the agency theory. According to Habbash (2010) the theory is concerned with how to motivate managers instead of how to monitor and control them as opposed to agency theory. The theory argues that the boards or executives are trustworthy and they can conduct themselves in good manners capable of protecting companies' resources under their control, thereby making it imperative to monitor (Donaldson & Davis, 1991 cited in Nurul, *et al.,* 2020).

Stewardship viewpoint indicates that agents are trustworthy and good stewards of economic resources entrusted to them by the principal, which therefore makes monitoring mechanism not necessary (Davis, Schoorman, & Donaldson 1997 as cited in Nurul, *et al.,* 2020). Since the boards are not opportunistic, they should thus be given some level of autonomy anchored on trust which inextricably reduces monitoring cost.

Nurul, *et al.,* (2020) showed that the board or executive pursue their satisfaction together with the realization of organizational goals (organizational performance). The attainment of organizational goals also satisfies the personal goals of the stewards, thus stewards' decisions are influenced by financial motives such as increased pay, bonuses and other financial gratifications. According to the stewardship theory, corporate governance should be based on the notion that stewards on behalf of stakeholders are good stewards of companies which work diligently to improve corporate profits and shareholders returns and not that there is a conflict of interest or managerial opportunistic tendencies.

2.5 Prior Empirical Studies

Hundal, Borén and Eskola (2025) investigated the linkages between performance-based compensation of CEOs, board of directors' attributes and performance among companies in Nordic using secondary data involving 113 publicly traded firms from 2012-2022.The fixed and random effect regression results showed that performance-based pay of CEOs have positive effect on financial performance. It also reported that board size and performance-based pay of CEOs is negatively linked with financial performance. Furthermore, it was found that board independence positively and significantly affects performance-based pay of CEOs.

Morrison, Adu and Guo (2024) examined whether executive compensation and sustainable business practices influence firm performance. Findings indicated that while executive compensation positively and significantly influence firm performance, sustainable business practices had negative and significant influence on firm performance. Similarly, Mahran and Elamer (2024) examined the relationship between chief executive officer and corporate environmental sustainability. Findings showed that chief executive officer is significantly linked with corporate environmental sustainability.

Mohammed, Ibrahim and Maitala (2023) investigated the effects of CEO compensation on financial performance of listed non-financial companies in Nigeria. A correlational design was employed and data obtained were analyzed using the Generalized Methods of Moments. Findings indicated that salary emoluments, stock-based and bonuses had negative significant effect on return on equity of non-financial companies in Nigeria. In the same vein, Yuli, Dyah and Aulia (2023) evaluated how implementation of corporate governance affects performance of companies listed on the Indonesia Stock Exchange. The panel regression results revealed that implementation of corporate governance (board meeting and size) had a positive significant effect on companies' performance.

Omamo, K'obonyo and Muindi (2022) investigated whether CEO compensation determines performance, customer satisfaction and companies' internal processes, as mediated by firm size in Kenya. Fixed and random effects and structural equation modeling statistical methods were employed and findings showed that while CEO compensation significantly affects performance and companies' internal processes, it was shown that CEO compensation negatively affects customer satisfaction. On the other hand, it was found that firm size mediates the relationship between CEO compensation, performance, internal processes and customer satisfaction.

Ahmad, Sadiqa and Khan (2021) examined corporate governance characteristics and firm performance of non-financial firms in Pakistan from 2010-2019. The fixed and random effect regression results revealed that board size, education, experience, nationality and executive compensation have significant negative effect on return on assets and Tobin's Q (measures of firm performance).

Nurul, *et al.,* (2020) investigated the effect of board political connections on organizational performance in Malaysia from 2012-2017. The regression results indicated that the presence of political ties in an organization has positive but insignificant effect on the level of performance measured by Tobin's Q. On the other hand, it was found that board political connection has significant and favourable effects on performance measured by return on assets (ROA) and return on equity (ROE).

Osazevbaru and Tarurhor (2020) assessed the link between unobservable attributes of boards (board gender diversity, board size and board independence) and organizational performance (using Tobin's Q, return on asset and share price) of 23 financial listed companies from 2006-2018. The non-linear GARCH result indicated that the unobservable attributes significantly and positively influence organizational performance. However, Tobin's Q had an insignificant positive relationship with the unobservable traits.

3. METHODOLOGY

This study investigated the extent to which interlocking board membership together with code of corporate governance (control variable) influence financial performance of publicly quoted companies in sub-Saharan Africa. Hence, ex-post facto research design was used because the study investigated already existing events or variables such that the researcher does not have the chance or opportunity of manipulating the data. The population of study comprised publicly quoted firms on the Nigerian Exchange Group (NGX), Johannesburg Stock Exchange (JSE) and Nairobi Stock Exchange as at 31st December 2023. A total of one hundred and sixty-eight (168) companies for Nigeria (NGX, 2023), four hundred and three (403) for South Africa (JSE, 2023) and sixty-seven (67) for Nairobi (NSE, 2023), constituted the study population.

The population of study cuts across firms in diverse sectors in three sub-Saharan Africa countries; the sectors include agriculture, automobile, banking, breweries, building materials, chemicals and paints, computer/office equipment, conglomerates, construction, engineering technology, food/beverages, healthcare, petroleum (marketing), packaging, insurance, industrial and domestic. In order to arrive at the sample of the study, multi-stage sampling techniques was employed. The first stage of sampling involves the selection of one hundred and eighteen (118) companies publicly quoted on the Nigerian Exchange Group, two hundred and one (201) companies quoted on the Johannesburg Stock Exchange and fifty-seven (57) companies quoted on the Nairobi Stock Exchange using inclusion and exclusion criteria.

This was implemented by selecting companies with consistent datasets from 2013-2023 among the selected countries in Sub-Saharan Africa.

The second stage involved the use of stratified random sampling where the companies were categorized into strata such as industrial and consumer goods, conglomerates, healthcare, agriculture, services, ICT, etc. Having divided the companies into strata, purposive sampling technique was adopted in selecting twenty (20) firms each from the countries of sub-Saharan Africa, hence totaling a sample size of sixty (60) sampled firms. Purposive sampling is a non-probability tool of sampling where elements to be selected from the population are based on the researcher's knowledge to have an even distribution of firms.

Secondary data comprising interlocking board membership, code of corporate governance (control variable) and financial performance variable (return on assets) were computed from yearly published annual reports and accounts of the selected companies from 2013-2023. Notably, the firms' year observations for the selected countries were one thousand, eight hundred (1,800). The dependent variable is financial performance; control variable is code of corporate governance while independent variable is interlocking board membership.

The study employed the Generalized Method of Moments (GMM) estimation technique. GMM was used because it accounts for unobserved heterogeneity, endogeneity and serial correlation in an empirical model. The following models incorporating the components of GMM were estimated as follows:

ROA = f(BIM, CCG)   Eq.1

$$ROA_{it} = \alpha_0 + \beta_1 BIM_{it} + \beta_2 CCG_{it-1} + \gamma Z_{it-1} + \varepsilon_{it} \qquad Eq.2$$

Where: ROA is return on assets; BIM is interlocking board membership; α is regression constant; CCG is code of corporate governance; ε is error term; *i* is individual companies; *t* is time dimension; Z_{it} is vector of explanatory variable at firm-level; γ is the response variable.

Table 1: Operationalization of Variables

Parameters	Measurements	Source
Return on Asset	Net Profit after Tax divided by Total Assets	Sobhan (2021); Osazevbaru and Yahaya (2021)
Interlocking Board Membership	This is measured using dichotomous variable '1'; where a board member occupies the board of another company, otherwise as '0'	Ahmad, *et al*., (2021); Nurul, *et al*., (2020)
Changes in Code of Corporate Governance	Changes in the codes of corporate governance is measured using dummy variable: '1' is assigned to period where there are changes in codes of corporate governance and if otherwise, '0'.	Muzata and Marozva (2022); Iliyasu, *et al*., (2020)

Source: Compiled by the Researchers (2025)

The study employed balanced panel dataset. Data obtained were analyzed via descriptive statistics (mean, minimum value, maximum value, standard deviation, skewness, kurtosis), Karl Pearson correlation,

diagnostic statistics (variance inflation factor, Breusch Pagan-Cook test, Ramsey RESET test), and inferential statistics (Generalized Method of Moments - GMM).

4. RESULTS AND DISCUSSION

Table 2: Summary Statistics (Nigeria)

STATISTICS	ROA	BIM	CCG
Mean	1.2802	0.3681	0.6363
Standard Deviation.	18.620	0.4834	0.4821
Minimum Value	-119.6	0	0
Maximum Value	53.960	1	1
Skewness	-2.513	0.5466	-0.5669
Kurtosis	16.785	1.2987	1.3214

Source: Compiled by the Researchers (2025)

Table 2 captured the mean (average) and standard deviation (degree of dispersion) for the sample companies in Nigeria from 2013-2023. ROA had a standard deviation value of 18.620 while CCG had a low dispersion with a standard deviation value of 0.4821. Overall, the standard deviation revealed that the publicly listed companies' performance is similar coupled with the several codes of corporate governance initiated in the country; an indication of relative change in financial performance. Also, BIM had an average of 0.3681; the high mean value for ROA (1.2802) is expected since it is expressed as a ratio of net profit after tax divided by total assets of companies.

Furthermore, minimum values for BIM and CCG were zero (0); an indication that there were board members who do not occupy the board of another company and absence of corporate governance codes regime in some years in Nigeria. On the other hand, the maximum values for BIM and CCG were one (1); an indication that there were board members occupying the board of another company, and presence of corporate governance codes regime in some years in Nigeria. Skewness values for ROA (-2.513), and CCG (-0.5669) were negative; indicating that they moved in opposite direction with the other variables while BIM (0.5466) had positive skewness, indicating that the variable moved in same direction. The kurtosis values for BIM (1.2987), and CCG (1.3214) were less than 3 (mesokurtic - normal distribution), implying that BIM and CCG would result to increased tremendous positive events (ROA).

Table 3: Summary Statistics (South Africa)

STATISTICS	ROA	BIM	CCG
Mean	6.0860	0.4863	0.2000
Standard Deviation.	9.6902	0.5009	0.4009
Minimum Value	-38.10	0	0
Maximum Value	67.21	1	1
Skewness	-0.062	0.0545	1.500
Kurtosis	12.151	1.0029	3.2500

Source: Compiled by the Researchers (2025)

Table 3 captured the mean (average) and standard deviation (degree of dispersion) for the sample companies in South Africa from 2013-2023. First, ROA, BIM, and CCG had averages of 6.0860, 0.4863, and 0.2000 respectively. The minimum values for BIM and CCG were zero (0); an indication that there are board members who do not occupy the board of another company and absence of corporate governance codes regime in some years in South Africa. On the other hand, the maximum values for BIM and CCG were one (1); an indication that there were board members occupying board of another company, and presence of corporate governance codes regime in some years in South Africa.

Skewness values for ROA (-0.062) is negative; indicating that it moved in opposite direction with the other variables BIM (0.0545) and CCG (1.500) had positive skewness values, indicating that these variables moved in the same direction. The kurtosis values for BIM (1.0029) is positive but less than 3 (mesokurtic - normal distribution), implying that BIM, would result to increased tremendous positive events (ROA) while CCG (3.2500) is greater than 3 (leptokurtic distribution), indicating that it would result in greater chances of extreme events (ROA) for the sampled listed companies in South Africa.

Table 4: Summary Statistics (Kenya)

Statistics	Roa	Bim	Ccg
Mean	2.5229	0.4272	0.0700
Standard Deviation.	16.942	0.8649	0.4593
Minimum Value	-179.9	0	0
Maximum Value	108.90	1	1
Skewness	-4.981	8.3943	-0.8728
Kurtosis	70.188	102.52	1.7619

Source: Compiled by the Researchers (2025)

Table 4 captured the mean (average) and standard deviation (degree of dispersion) for the sample companies in Kenya from 2013-2023. First, CCG had the least dispersion with a standard deviation value of 0.4593. Generally, the standard deviation revealed that listed companies' performance is similar coupled with the several codes of corporate governance initiated in Kenya; an indication of relative change in financial performance. ROA, BIM and CCG had averages of 2.5229, 0.4272 and 0.0700 respectively. The minimum values for BIM and CCG were zero (0); an indication that there were board members who do not occupy the board of another company and absence of corporate governance codes regime in some years in Kenya. On the other hand, the maximum values for CCG was one (1); an indication that there was existence of corporate governance codes regime in some years in Kenya.

Skewness values for ROA (-4.981) and CCG (-0.8728) were negative; indicating that the observations are skewed to the left. BIM (8.3943) had positive skewness value. The kurtosis value for CCG (1.7619) was less than 3 (normal distribution), though positive, implying that CCG would result to increased tremendous positive events (ROA) while BIM (102.52) was greater than 3 (leptokurtic distribution), indicating that BIM would result in greater chances of extreme negative events (ROA) for the sampled listed companies in Kenya.

Table 5: Summary Statistics (Aggregate)

Statistics	Roa	Bim	Ccg
Mean	3.2963	0.4272	0.5121
Standard Deviation.	15.683	0.6418	0.5002
Minimum Value	-179.9	0	0
Maximum Value.	108.9	1	1
Skewness	-3.633	6.9052	-0.048
Kurtosis	44.509	112.24	1.0023

Source: Compiled by the Researchers (2025)

The results of descriptive statistics demonstrate that on the average, selected companies in sub-Saharan Africa (Nigeria, South Africa and Kenya) had positive values for ROA (3.2963) over the period investigated. The minimum value of ROA is -179.9 while the maximum value is 108.9. The variation in minimum and maximum values revealed that ROA was differently influenced by distinct set of circumstances such as cross-country government policies. Only a small number of the listed companies have low ROA but majority of the companies have high ROA in the period investigated, as indicated by the distinction between the mean, maximum and mean values.

Furthermore, BIM (0.4272) and CCG (0.5121) recorded significantly low mean values; this was further supported by their low standard deviation values. The minimum value (0) revealed that while some listed companies had no board members sitting in the board of another company and do not experience frequent changes in codes of corporate governances in some years under investigation, the maximum value (1) showed that there are some listed companies in Sub-Saharan who has board members sitting in the board of another company and experience subtle changes in codes of corporate governances in some years under investigation.

The skewness values for ROA (-3.633) and CCG (-0.048) were negative; indicating that they moved in opposite direction while BIM (6.9052) had positive skewness. The kurtosis value for CCG (1.0023) was less than 3 (normal distribution), implying that CCG would eventually result to increased tremendous positive events (ROA) while BIM (112.24) was greater than 3 (leptokurtic), suggesting that it would result in greater chances of extreme negative events (ROA) for the sampled listed companies in Sub-Saharan Africa.

Table 6: Correlation Matrix (Aggregate)

Statistics	Roa	Bim	Ccg
ROA	1.0000		
BIM	0.0162	1.0000	
CCG	-0.0007	0.0673	1.0000

Source: Compiled by the Researchers (2025)

The outcome in Table 6 demonstrates positive correlation between ROA and BIM (0.0162), except CCG (-0.0007) that is negatively correlated with ROA. The outcome revealed that a unit increase in BIM would boost ROA of the listed companies in sub-Saharan Africa. On the other hand, a unit increase in CCG would decrease ROA of the listed companies.

Table 7: Variance Inflation Factor (VIF) Results

Variables	VIF	1/VIF
CCG	1.24	0.8064
BIM	1.03	0.9724
Mean VIF	**1.14**	

Source: Compiled by the Researchers (2025)

Table 7 is the multicollinearity result for the panel data of the sampled companies. The mean VIF is 1.14, which is not greater than the benchmark mean VIF of 10.0, an indication that there is non-existence of multicollinearity in the empirical model of the study and that most likely the data are reliable for performing statistical inferences.

Table 8: Heteroskedasticity Results

Variables	Fitted Values of ROA	
Chi2(1)	4.52	
Prob. > Chi2	0.0335	

Source: Compiled by the Researchers (2025)

Table 8 is the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity for panel data of the sampled companies. Breusch-Pagan/Cook Weisberg Chi2(1) is 4.52, with probability of 0.0335 which is not greater than 0.05 percent significance level; an indication of non-existence of heteroskedasticity in the empirical model for companies in sub-Saharan Africa. It implies that the sample employed in the panel regression in Sub-Saharan Africa does not contain unequal variance and as such, there is evidence that the results are valid.

Table 9: Ramsey RESET Test

Ho	Model has no Omitted Variables	
F(3, 641)	7.17	
Prob. >F	0.0001	

Source: Compiled by the Researchers (2025)

Table 9 showed the Ramsey regression specification-error test (RESET) for omitted variables and fitted values of response variables (dependent variable – ROA). The result revealed that F(3, 641) is 7.17 with probability value of 0.0001, indicating that the alternate hypothesis was rejected while the null hypothesis was accepted. This suggests that the empirical model of the study has no omitted variables, thus the empirical model for board interlocking membership and organizational performance do not suffer from functional form misspecification.

Table 10: Cameron & Trivedi's Decomposition of IM-Test

Sources	Chi2	df	p
Heteroskedascity	117.82	33	0.0000
Skewness	8.28	7	0.3086
Kurtosis	2.24	1	0.1342
Total	**128.34**	**41**	**0.0000**

Source: Compiled by the Researchers (2025)

The Cameron and Trivedi's decomposition of information matrix (IM) test was carried out to determine whether the empirical models are not violating any of the assumptions of panel data regression to be able to make

good inference. The heteroskedasticity result (Chi2 = 117.82; p-value = 0.0000 < 0.05) is statistically significant except skewness (Chi2 = 8.28; p-value = 0.3086), and kurtosis (Chi2 = 2.24; p-value = 0.1342).

However, the aggregate value (Chi2 = 128.34; p-value = 0.0000) is suggestive of rejection of the null hypothesis. Accordingly, the empirical model did not violate any of the assumptions of panel data regression.

Table 11: Generalized Method of Moments Results for BIM and ROA

Parameters	Equation
	ROA
L1	0.015 (13.47)
BIM	0.2978 (0.37)
CCG	-1.8123 (-1.66)
Constant	9.7963 (12.23)
R-Squared	0.195
P-Value	0.711

Source: Compiled by the Researchers (2025) ***significant at 5%

Table 11 showed the GMM panel estimation results which was employed to ascertain the effect of interlocking board membership (BIM), codes of corporate governance (CCG) on financial performance (ROA). It demonstrates that coefficient of BIM (0.2978) is positive except CCG (-1.8123) that is negative. Thus, there is positive insignificant effect of BIM on ROA of the selected companies in Sub-Saharan Africa. In addition, it was found that BIM explained about 20% (R-squared 0.195) of the systematic variation in ROA.

Ahmad, Sadiqa and Khan (2021) asserted that the presence of interlocking board membership negatively influence organizational performance. On the other hand, the study by Nurul, *et al*., (2020) revealed that BIM positively influence organizational performance. The outcome of this study partially supports this submission though positive influence is not statistically significant. Clearly, our finding disagrees with the result of Ahmad, *et al*., (2021) who found that interlocking board membership had significant negative effect on financial performance. From the foregoing, there is mixed findings on the interaction between BIM and organizational performance. Consequently, there is a need to carry out further investigation on the effect of BIM on performance of publicly listed companies in sub-Sahara Africa.

5. CONCLUSION AND RECOMMENDATIONS
In this study, we investigated the extent to which interlocking board membership affects financial performance of publicly listed companies in sub-Saharan Africa. The study employed a sample of sixty (60) companies drawn from all sectors in three (3) countries of sub-Saharan Africa (Nigeria, South Africa and Kenya) during the period 2013–2023 to provide insights into the relationship between interlocking board membership, code of corporate governance and financial performance (return on asset). The study demonstrates that interlocking board membership together with code of corporate governance as control variable insignificantly influence financial performance of companies in sub-Saharan Africa.

The conclusion obtained from the investigation is that interlocking board membership does not determine financial performance (return on asset) of listed companies in sub-Saharan Africa. The study recommends that interlocking board membership of publicly listed companies in sub-Saharan Africa should be discouraged as the study found interlocking board membership to have insignificant effect on performance.

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