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The Influence of Stock-Based Compensation on Emerging Markets' Revenue and Market Capitalization

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ABSTRACT

Introduction: Stock-based compensation metric is pivotal as it may be a force that threaten financial performance in emerging markets and could cause an increased volatility within markets operations in a fierce competitive industry.

Objectives: This study examines the impact of stock-based compensation (SBC) on the financial performance of emerging markets.

Methods: Using a cross-sectional dataset from Damodaran covering 94 emerging markets for 2023, the study applies Ordinary Least Squares (OLS) and Fully Modified Ordinary Least Squares (FMOLS) models to analyze short- and long-run relationships between SBC and financial performance.

Results: In the results stock-based compensation shows a marginally negative effect on market capitalization in both estimation models, despite the general success of SBC initiatives. In contrast, the number of employees and revenue per employee display a positive correlation with both market capitalization and revenue.

Conclusions: The findings are relevant to policymakers, regulators, and shareholders in emerging markets. This study offers key insights into how SBC affects financial performance, contributing to discussions on governance and investment in emerging economies. The study was limited by the lack of panel data on emerging firms. Future research should explore SBC impacts using longitudinal datasets and various SBC structures.

Keywords: Financial performance, stock-based compensation, FMOLS, Emerging markets

1. INTRODUCTION

Stock-based compensation (SBC) improves the reliability of financial earnings to users of accounting information regarding the integral strategies of executive compensation and is the potential magnitude of reducing net income, influencing earnings per share, and retained earnings. Stock-based compensation is a force to be reckoned as a tax-deductible expense, serving to provide acceptable tax benefits. The realization that SBC has a positive effect on financial performance suggests aligning the interests of executives with other shareholders, which in turn enhance emerging market performance through long-term value creation (Farooque et al., 2019). It beholds executives to identify processes in minimizing any material misstatements within the stock price and returns informativeness (Zhang et al., 2025), account balances and class of transactions to ensure accuracy, reliability and integrity of financial reporting to aid emerging markets in achieving optimal compensation plans (Farooque et al., 2019). The possibility of pursuing these objectives is highly dependent on the managerial integrity of accounting numbers and the efficacy of internal control systems in the organization (Salehi & Bahrami, 2017).

Academic research demonstrates that financial performance positively improves the quality of accounting for stock-based compensation pursuits, consequently leading to significant socioeconomic status, such as positive changes in shareholder returns, and attracts and retain top executives in the competitive marketplace. The relationship between stock-based compensation and financial performance has been a paradigm shift and much attention has been paid to the topic from accounting and finance perspectives. This shift is marked by the intervening impact of International Financial Reporting Standards on stock-based compensation and its impact on financial performance, as it is still a

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grey area for academic research. In emerging markets, their environment is turbulent in diverse economic conditions, weak regulatory framework and governance practices (Bebchuk & Fried, 2004) with relatively complications and therefore characterized by unique challenges, and opportunities (Carpenter, 1998).

It is expected that insights the influences of stock-based compensation on financial outcomes and market valuations for investors, policymakers and other stakeholders would improve the financial targets of emerging markets and increase the information quality of executive compensations. This area remains scanty in research and therefore, empirically necessary for this study to be pursue in emerging economies. In this view, it becomes imperative to examine this phenomenon in the context of emerging market industries where illiquidity and low participants are marked in the financial institutions, amidst low business funds. A gap exists in understanding how SBC influences both revenue and market capitalization performance across different industries within emerging markets, warranting a more granular examination. Prior studies affirmed a positive association between stock options, especially executive pensions (Mohammed et al., 2023) and CEO compensation on firm performance in emerging markets (Farooque et al., 2019; Murphy, 2003), and other financial targets areas such as market capitalization (Zhang & Rezaee, 2009); and other equity instruments for members may impact performance-driven outcomes (Blasi, Freeman & Kruse, 2013), especially across different industries. Murphy (2018) identified the universality of stock-based compensation as partial ownership structure that heightens the contribution to the financial performance of emerging industries in accordance with agency theory (Jensen & Meckling, 1976). Other authors have demonstrated that the increasing effect of SBC in emerging results in leveraging effects in equity incentives to reduce costs to improve the financial performance, which may facilitate growth opportunities, especially upon timely delivery of information quality (Li et al., 2018: Cooke, 2018).

However, another school of thought affirmed that SBC benefits for the financial targets of industries may differ across developed economies (Baker et al., 2012). Using a longitudinal study of developed economies, Ahern and Dittmar (2012), and Edmans (2011) concluded that the long-term effects of SBC on corporate sustainability and innovation achieved a positive correlation. In contrast, result made by Gomez-Mejia et al. (2014) concluded that SBC, income inequality and social unrest undermine long-term financial sustainability to stifle emerging market competitiveness as this evidence opposed the resource-based view (Barney, 1991).

Emerging markets have a strong aversion to adopting SBC plans into strategic business affairs, considering the local market conditions, cultural norms, and regulatory frameworks that may differ significantly from those in developed economies. This condition pre-empts the management of costs and risks due to volatility and higher uncertainty level. This makes emerging markets participate in SBC low, making this study important to undertake.

This study makes an immense contribution to accounting and finance by examining the influence of SBC on emerging markets cross-sectional datasets. Similarly, this study envisaged the power of pursuing stock-based compensation policies by governance to retain managerial talents and skills that could lead to the achievement of fervent revenue and market capitalization performance of emerging markets to improve their cash flows.

This study contributes to the academic debate on the impact of stock-based compensation on market capitalization valuation and financial performance. This finding supports the agency theory, suggesting that financial performance aligns managers interests with those of emerging markets by providing them with a direct stake.

The remaining sections are outlined in separate subheadings of the literature review, research design, results analysis, policy implications and future directions.

2. REVIEW OF EMPIRICAL LITERATURE AND HYPOTHESES FORMULATION

In the recent years, the effects of stock-based compensation on the financial performance of emerging markets, particularly in terms of revenue and market capitalization, have garnered significant attention. The earnings capacity level of emerging markets drives growth opportunities, enhancing the credibility of reputations and motivating stakeholders.

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2.1 Revenue performance and Stock-Based Compensation

Stock-based compensation (SBC) has been the subject of significant research on relation to firm revenue performance. Stock-based compensation has the power to influence revenue performance through various mechanisms, including employee motivation, talent retention, and alignment of executives' interests, leading to significant economic consequences such as, earnings per share and changes in shareholder returns (Zhang & Rezaee, 2009). For instance, Kyoye et al. (2021) iterated that executive emerging markets growth strategies thrive well under stock-based compensation schemes. Studies in this area have shown mixed results regarding its impact on financial outcomes and valuation in emerging marketplace (Mohanram et al., 2020; Han & Yu, 2023). Some studies find positive effects on revenue targets and ensure reasonable assurance of growth (Martinez et al., 2017), while others show negative or insignificant relationships (Mohammed et al., 2023; Zheng et al., 2020) in SBC. There is evidence in the US that espoused the link between CEO compensation and firm performance had never been fully (Ozkan, 2011) as highlighted in their corporate governance report. Although, mixed findings are well marked in SBC and revenue performance of prior studies, this study can attest that SBC serves to reduce the revenue performance of emerging markets. Thus, the following hypothesis proposed:

H1. There is a negative relationship between SBC and revenue performance in emerging markets.

2.2 Market Capitalization and Stock-Based Compensation

Previous studies still hold this topic in high esteem due to rapid the economic growth associated with emerging markets (Murphy, 2018), especially in areas of increased labor requirements and innovative growth compensation strategies. The impact of SBC on market capitalization is complex and contingent on stock price volatility, perceived risk, and market reactions dynamics. Emerging markets with appreciable market capitalization on SBC (Nguyen, 2020) serves as a signal of market performance and future growth prospects (Chen et al., 2018) to investors (Jain & Kini, 2016) to drive economic gains or otherwise.

Stock-based compensation (SBC) has significant implications for firm valuation and market performance. In addition, prior empirical studies have proven that the synergy between executive firm valuation and ESG performance metrics could lead to improved financial performance in emerging markets (Ting et al., 2019). Research indicates that firms with higher SBC tend to exhibit higher valuation ratios but lower returns, suggesting potential overvaluation (Mohanram et al., 2020). This overvaluation is particularly pronounced for firms with larger analyst coverage, implying that sell-side optimism plays a crucial role in driving inflated valuations. Interestingly, market participants often fail to properly account for SBC as an expense, leading to equity overvaluation. Financial analysts tend to exclude more expenses from their street earnings forecasts and provide optimistically biased target prices for firms with higher SBC (Mohanram et al., 2020). This tendency to ignore SBC in valuation models results in optimistically biased price targets, whereas analysts who treat SBC as an expense in financial accounts produce unbiased estimates on average. However, there are variation in SBC disclosure and announcements arising from market reactions (Chen et al., 2018), which could result in both positive and negative effects on market valuation (Balsam et al., 2007). Therefore, SBC expense and market capitalization speed dilution of EPS and reduce retained earnings, thereby influencing the corporate governance level. Thus, the following hypothesis is proposed:

H2. A negative relationship exists between market capitalization performance and stock-based compensation in emerging markets.

3. DATA SOURCE AND VARIABLE MEASUREMENTS

The data source and collection, sample and criteria employed, model specification of study variables, and descriptive and correlation analysis are dealt with in this section. This study focuses on listed emerging markets in assorted industries, using secondary data obtained from publicly available sources. These emerging markets are prominent players in the industry and have a significant presence in the global markets. The data for the study were sourced from the Damodaran database.

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This timeframe allows for a comprehensive analysis of the trends and patterns in the variables shown in Table 1. Data were gathered from 94 emerging markets across nine industries, which were later grouped into four broad categories based on related sectors. The variables collected for this study are explained in Table 1.

Table 1

Definition and Explanation of Variable Used

Variable	Notation	Explanation	Var type	Expected sign	Source www.
Revenue	REV	Revenues ($ millions)	Dep. var	-/+	damodaran.com
Market Capitalization	MKTCAP	Market Capitalization ($ millions)	Dep. var	-/+	damodaran.com
Revenue Growth	REVGRW	Last year revenue minus current year one lagged last yr one	Dep. var	-/+	damodaran.com
Number of firms	NOF	Number of firms in the industry	cont. Var	_	damodaran.com
Number of Employees	NOE	Number of employee and staff	cont. Var	+	damodaran.com
Stock-based compensation	SBC	Stock-based Compensation ($ millions)	Ind. Var	+	damodaran.com
Revenue per employees	RPE	Revenues per Employee ($) signifying employee productivity	cont. Var	+/-	damodaran.com
Research and development in sales	RDS	R&D/Sales signifying extent sales support innovation	Ind. Var	+	damodaran.com
Net margin	NTM	Net Margin after cost of sales	Con	+	damodaran.com

Source(s): Author computation

3.1 Method and results

The analysis in this study consists of multiple regressions. This study follows the estimation techniques and diagnostic procedures of ordinary least squares, cointegration tests, and feasible modified OLS to model the SBC on financial performance. Other relevant tests included Pearson correlation analysis, Shapiro Wilk normality test and variance inflation factor (VIF). The three isolated financial performance econometric regression models the OLS can be expressed in the following equations (see Table 1 for explanatory variables):

$$REV_{it} = \beta_1 NOF_{it} + \beta_2 NOE_{it} + \beta_3 SBC_{it} + \beta_4 RPE_{it} + \beta_5 RDS_{it} + \beta_6 NTM_{it} + \varepsilon$$

$$MKCAP_{it} = \beta_1 NOF_{it} + \beta_2 NOE_{it} + \beta_3 SBC_{it} + \beta_4 RPE_{it} + \beta_5 RDS_{it} + \beta_6 NTM_{it} + \varepsilon$$

$$REVGW_{it} = \beta_1 NOF_{it} + \beta_2 NOE_{it} + \beta_3 SBC_{it} + \beta_4 RPE_{it} + \beta_5 RDS_{it} + \beta_6 NTM_{it} + \varepsilon$$

Where:
β_0 is the intercept coefficient, $\beta_1, \beta_2, \beta_3, \beta_4$ are the regression coefficients of independent variable, ϵ represents the error term, control variables include net margin after cost of sale, number of firms and employees, and other ones to improve the robustness of the analysis.

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In view of the deviation from the normality test result (see Table 5) from the normal distribution, this research augments the econometrics estimation to ascertain the long-run relationships of the study variable as to whether the independent variables could explain the dependent variables – financial metrics. Therefore, OLS is extended to embrace Johansen cointegration (Kao, 1999; Pedroni, 1999, 2004), and perform feasible modified ordinary least squares (FMOLS) (Phillips & Moon, 1999). The aim of these estimations' applications is to solve the endogeneity problem and to eliminate serial correlations that exist in OLS (Dreger & Reimer, 2005), especially, in the usage of small sample bias. Both the trace test and the maximum eigenvalue (equations 4 and 5) are likelihood ratio tests used by Johansen to assess canonical correlations and the reduced rank of the matrix as follows:

$$J_{trace} = -T\sum_{i=r+1}^{n} I_n[1-\lambda_i] \quad (4)$$

$$J_{max} = -TI_n(1-\lambda_{r+1}) \quad (5)$$

With T as the sample size and λi ˆ as the i-th largest canonical correlation, the trace test and maximum eigenvalue test serve distinct purposes: the trace test compares r cointegrating vectors to n, whereas the maximum eigenvalue test compares r to r+1 cointegrating vectors.

3.2 FMOLS specification

The FMOLS technique is an extension of the traditional ordinary least squares (OLS) method designed to address issues related to non-stationarity and endogeneity, especially in the presence of cointegration. It has some consistent features such as the presence of cointegration, efficiency in estimating cointegrating relationships, robustness to serial correlation and heteroscedasticity and asymptotic normality. Thus, the three inherent separate equations to estimate the relationships of variables for study under FMOLS are:

$$REV_{it}, MKCAP, REVGW = \beta_1 NOF_{it} + \beta_2 NOE_{it} + \beta_3 SBC_{it} + \beta_4 RPE_{it} + \beta_5 RDS_{it} + \beta_6 NTM_{it} + \nu$$

4. RESULTS

4.1 Descriptive results

The fundamental descriptive and correlation matrix results incorporated in this study are shown in Tables 2 and Table 3 respectively. The mean amounts of market capitalization, revenue and revenue growth in millions of dollars are 58659, 53753, and 9.19%, respectively. The minimum value for revenue growth, research and development in sales and net margin are woefully insignificant in contributing to the financial performance of emerging markets, while some maximum values indicate very high growth pathways.

Table 2
Descriptive statistics

Var	OBS	MEAN	STD DEV	MIN	MAX
Dependent variables:					
MKC	94	58659.39	98386.07	206.4	825911.1
REV	94	53753.12	70238.44	216.04	419435.9
REVGRW	93	9.187	57.356	-0.990	534.390
Independent variable:					
SBC	94	1064.72	6066.82	7.38	58578.06
Control variables:					
NOF	94	264.394	243.001	13	976
NOE	94	806458.7	971267.5	13108	6511227
RPE	94	82039.7	77212.51	2521.711	422539.6
RDS	94	0.019	0.032	0	0.191
NTM	94	0.088	0.107	-0.101	0.675

Source(s): Author

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The average number of employees is approximately 806,459, but the standard deviation is quite large, indicating significant differences in market sizes. The number of employees ranges widely, from 13,108 to over 6.5 million. On average, stock options amount to about 1,064.72 million, with a very high standard deviation, indicating that some markets have much larger stock options than others. The range is vast, from 7.39 million to 58,578.06 million. The average revenue per employee is approximately $82,040, with a wide range from about $2,522 to over $422,539, reflecting the significant variability in the revenue generated by each employee. On average, R&D spending is approximately 1.93% of sales.

Table 3
Correlation matrix

Var	MKTC	REV	REVG	SBC	NOF	NOE	RPE	RDS	NTM
MKTC	1								
REV	0.504	1							
REVG	0.070	0.243	1						
SBC	0.041	0.110	0.075	1					
NOF	0.242	0.417	0.256	0.294	1				
NOE	0.697	0.634	0.066	0.251	0.582	1			
RPE	0.152	O.316	0.102	-0.107	-0.107	-0.167	1		
RDS	0.126	-0.112	-0.038	0.152	0.152	-0.033	-0.011		
NTM	0.284	-0.062	-0.048	-0.027	-0.027	0.044	0.133	-0.039	1

Source(s): Author, 2024

Table 3 presents the correlation coefficients between the estimation variables in the dataset. As expected, the correlation between SBC and all three financial performance metrics is positive affirming the notion that SBC increases financial performance metrics as an incentive for in emerging markets. Similarly, NOF, NOE, and RDS are positively related to all three financial performance variables, indicating that appreciation of these variables connotes positive improvement in earnings of emerging markets, consistent with prior literature (Zhang & Rezaee, 2009; Han & Yu, 2023).

Table 4
Multicollinearity test

VAR	**VIF**	**1/VIF**
NOF	1.66	0.602
NOE	1.64	0.608
SBC	1.11	0.899
RDS	1.09	0.920
RPE	1.05	0.950
NTM	1.04	0.966
MEAN VIF	1.27	

Source(s): Author

Table 4 presents VIF scores between 1.04 and 1.66, with a mean VIF of 1.27, indicating low multicollinearity among the variables used for this study. Specifically, it suggests that multicollinearity is not a concern in this model, meaning that the independent variables are not highly correlated with each other.

Table 5 Shapiro-Wilk for normality test

VAR	**OBS**	**W**	**V**	**Z**	**prob>z**
REVGRW	93	0.152	65.883	9.253	0.000
NOF	94	0.839	12.644	5.609	0.000
NOE	94	0.688	24.447	7.067	0.000
SBC	94	0.136	67.783	9.322	0.000

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RPE	94	0.760	18.824	6.489	0.000
RDS	94	0.610	30.523	7.558	0.000
NTM	94	0.784	16.964	6.259	0.000
MKC	94	0.470	41.525	8.238	0.000
REV	94	0.674	25.489	7.159	0.000

Source(s): Author 2024

Table 5 presents the results of the Shapiro-Wilk normality test for the study variables, with each one showing a z-score well above 5 and a p-value of 0.00000. This analysis shows that all variables deviate significantly from a normal distribution, indicating that the null hypothesis of normality is rejected for all variables. In summary, the dataset was not normally distributed, which might imply the need for a non-parametric estimation technique to be employed in the analysis of this study.

Table 6 ADF Unit root test

VAR	Level: T-stat	Level: Prob	1st Diff: T-stat	1st Diff: Prob
MKC	-9.968	0.000	-9.205	0.000
NOF	-9.107	0.000	-9.034	0.000
NOE	-8.862	0.000	-6.807	0.000
NTM	-7.972	0.000	-15.653	0.001
RDS	-8.496	0.000	-12.680	0.001
REV	-9.429	0.000	-10.145	0.000
REVGRW	-9.704	0.000	-9.313	0.000
RPE	-10.986	0.000	-9.300	0.000
SBC	-9.519	0.000	-9.269	0.000

Source(s): Author

The results of the Augmented Dickey-Fuller (ADF) test for unit roots, conducted on variables in level and first difference forms, are shown in Table 6, showing the test statistics (T-stat) and probabilities (Prob). The T-statistics for all variables at their levels were significantly negative and below the threshold of 0.05. There is strong evidence to reject this null hypothesis. The results in Table 6 indicates that both at the first level and first difference, the variables are stationary; therefore, satisfying the integrated test orders – I(0) and I(1) was not necessary.

5. Analysis of regression results

Table 7 addresses the test results three separate estimation techniques, that uphold the study hypotheses. It shows in Table 7 that SBC has significantly a negative coefficient with market capitalization, suggesting that as SBC delivery improves for executives, market capitalization targets reduce. It stands to reason that emerging markets that recognize stock-based compensation to retain and recruit top executives may tend to experience decrease in market capitalization performance. The financial revenue and revenue growth variables have no significance effects on the stock-based compensation trajectory of emerging markets as shown in Table 7. Therefore, it stands to reason that SBC policy can be recognized and pursued in the emerging markets, but it could lead to the fall of financial market capitalization, leading to negatively affect accounting quality to increase investment risk, eventually.

Table 7 Financial performance using OLS

	Revenue($m)	**Market cap($m)**	**Revenue grw($m)**
SBC	-0.970(0.799)	-1.838(1.021)***	0.0916(0.001)
NOF	32.681(24.417)	-106.5(31.19***	0.083(0.030)***
NOE	0.048(0.006)***	0.094(0.008)***	-7.60(7.720)
RPE	0.417(0.061)***	0.323(0.078)***	0.0912(0.0775)
RDS	-1944(1520)	6368.2(1942.4)***	-187.15(192.9)
NTM	-1061.3(4379.2)***	1995.6(5595.9)***	-25.54(55.637)
CONS	-1381.9(9864.3)***	-436.5(1260.9)***	-8.52(12.583

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F=24.41, Adjusted R-sq =0.601, N=94	*F=32.26, Adjusted R-sq=0.669, N=94*	*F=1.61, Adjusted R-sq=0.0385, N=93*

Note: *Dependent variables: Revenue, Market capitalization, Revenue growth, Independent and control variables: SBC=stock-based compensation, NOF=number of firms, NOE=number of employees, RPE=revenue per employee, RDS=research & development in sales, NTM=net margin. ***,** and * denote statistical significance:1%, 5% and 10% levels respectively. (t-tests in parentheses)*

With the announcement of executive compensation to retain top managerial talents, there is reasonable assurance of quality acumen managerial skills from those charged with governance, but there is the need for the auditor to qualify the audit opinion arising from disagreement with management about the decrease in market capitalization upon taking this pathway.

In the results of the control variables, financial revenue and market capitalization show a positive relationship with the number of employees, revenue per employee, and number of firms with financial revenue growth, while negative relationship exists between R&D in sales and net margin with financial revenue, and the number of firms with market capitalization metrics. This result suggests that the importance of workforce efficiency could positively drive the revenue performance in emerging economies, as positive revenue per employee may highlight the necessity of driving emerging market value. The result of a strong positive relationship between the R&D in sales emphasize the quality of innovation and research in enhancing the value of emerging markets. Conversely, when there is an increase in the numbers of firms within fierce competition, the emerging market value of financial performance could have a negative impact.

The F-statistics for both the financial revenue and capitalization models are statistically significant at the 1% level, suggesting a joint negative effect of the independent variables on the dependent variable. However, the revenue growth model achieved a very low adjusted R-square value of the coefficient of determination.

5.1 Feasible Modified OLS estimation

In view of the fact that the results of the Shapiro Wilks normality test in Table 4 deviates from the behavior of the normal distribution, this study employs FMOLS techniques to augment the robustness of the OLS estimation results (see Table 7). This study used the Johansen cointegration test to establish long run associations between the study variables (Johansen & Juselius, 1990). Therefore, the FMOLS is employed to address endogeneity, serial correlation, and heteroscedasticity tendencies. The FMOLS test provides reliable results and is considered the most consistent test with a small sample size. Table 10 reveals both the Trace and Maximum Eigen-Value statistic, at least seven cointegrating relationships among the variables, which indicates refusal to accept the H0 of no cointegration.

Table 8 Johannsen cointegration results

Rank	Trace value			Max-Eigen		
	Trace stat.	Crit. val.	Prob.	Eigen val.	Crit. val.	Prob.
None*	208.1602*	125.6154	0.000	46.66399*	46.23142	0.045
At most 1*	161.4962*	95.75366	0.000	43.37616*	40.07757	0.021
At most 2*	118.1200*	69.81889	0.000	34.25722*	33.87687	0.045
At most 3*	83.86281*	47.85613	0.000	27.89312*	27.58434	0.045
At most 4*	55.96969*	29.79707	0.000	23.91672*	21.13162	0.019
At most 5*	32.05297*	15.49471	0.001	19.80434*	14.26460	0.006
At most 6*	12.24863*	3.841465	0.005	12.24863*	3.841465	0.005

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No long-run relationships of
the variables, *declination of null hypothesis at 1%(P<0.01), **Declination of null hypothesis at 5%(P<0.05),
source: Author computation

The Johansen cointegration test reports both the trace and max-eigenvalue statistics, along with their corresponding critical values and probabilities. The results show that the null hypothesis is rejected for all ranks because the trace statistics for each rank exceed their respective critical values at the 5% level, suggesting multiple cointegrating relationships in the system. The max-eigenvalue statistic tests the null hypothesis of "r" cointegrating relations against the alternative of "r+1" cointegrating relations. With the max-eigenvalue test evaluating r versus r+1 cointegrating relations, the null hypothesis is rejected at all levels because the statistics exceed the critical values at 5%, further confirming multiple cointegrating equations (Johansen & Juselius, 1990). The results from both the trace test and max-eigenvalue test show rejection of the null hypothesis, suggesting a minimum of seven cointegrating vectors. This implies that several long-term equilibrium relationships exist among the variables under study. These relationships suggest that the variables co-move over time and adjust to maintain long-term equilibrium.

5.2 FMOLS test results

The FMOLS regression results provide insights into the relationships between SBC and several explanatory variables (NOF, NOE, RPE, RDS, and NTM) and dependent variables: Market Capitalization (MKTCAP), revenue (REV), and Revenue Growth (REVGRW). Table 9 presents the results for each dependent variables in the three estimation models. The test result of SBC has a negative coefficient amount with only market capitalization at the 10% significance level, suggesting that high compensation-based delivery provides a reduction in market capitalization performance, leading to deteriorated emerging markets reporting earnings and dilution in investors' confidence (Ozkan, 2011). In addition, the results reveal that positive relationships between the number of firms and revenue growth at the 1% significance level to enhance earnings growth in the long run, while the same variable has a negative effect on market capitalization performance, which deteriorate the value of emerging market operations (Kyoye et al., 2012). However, the number of employees and research and development in sales control variables have positive effects on market capitalization, suggesting that a higher labor force and increased productivity would tend to improve the efficiency and value of emerging markets (Li et al., 2018).

Table 9 Feasible Modified OLS results

Var	MKTCAP	REV	REVGRW
SBC	-0.67(-1.83)*	-0.67(-0.08)	0.00(0.32)
NOF	-114.48(-4.36)***	-3.66(-0.20)	0.05(2.70)***
NOE	0.08(13.03)***	0.04(9.58)***	-8.11e-06(-1.48)
RPE	0.25(0.05)***	0.26(6.51)***	0.000(0.225)
RDS	0(0.000)	0(0.000)	0(0.000)
NTM	0(0.000)	0(0.000)	0(0.000)
	N=93, R-sq=0.2899	N=93, R-sq=0.0600	N=92, R-sq= -0.1678

Note: *Dependent variables: Revenue, Market capitalization, Revenue growth, Independent and control variables: SBC=stock-based compensation, NOF=number of firms, NOE=number of employees, RPE=revenue per employee, RDS=research & development in sales, NTM=net margin. ***,** and * denote statistical significance:1%, 5% and 10% levels respectively. (t-tests in parentheses)*
Source: Author computation

However, all three models have low R-squared scores, suggesting that they may be weakly suitable for predicting the financial performance of emerging markets in the long-run. The test results reveal that both revenue and market capitalization performance measure the long-run standard errors of the estimated long-run coefficient of 35016.13 and 50830.37 respectively. These large values suggest that, there is more uncertainty, which has less predictive power for the estimation coefficients.

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6. DISCUSSION AND CONCLUSION

This study influences the agency theory by elucidating the relationship between stock-based compensation (SBC) and financial performance metrics. The correlation between the SBC and the three financial models established positive relationship. This assertion support of agency the theory that SBC may align the interests of those charged with governance with those of members, by permitting governance managers a direct stake in the emerging markets financial performance. In similar findings, the control variables, number of employees and revenue per employees reveal positive relations to market capitalization performance in emerging markets. This study affirms that, primarily SBC actions lead to improved financial market capitalization in both the short-run and long-run periods to incentivize top managerial talents under both OLS and FMOLS estimation techniques. Moreso, the study reveals positive relationships between market capitalization and revenue performance, and the number of employees, revenue per employees, and net margins whiles only the number of firms shows a negative relationship with market capitalization in both the OLS and FMOLS models.

This study examines policy implications in two areas. This study highlights the relevance of agency theory in accentuating the SBC concept in aligning the interests of those charged with governance to impact financial performance within positive financial targets. This condition reduces earnings dilution. Regulators of emerging markets and those charged with governance could use the study outcomes to improve policies on the SBC of emerging markets in developing nations. The reason is that the relevance of SBC to financial performance serve to catalyze, recruit and retain top executives to achieve a sustainable growth in emerging markets, given resilient economies. Our findings complement prior studies, confirming that, on average SBC significantly impacts emerging markets' market capitalization valuation performance in a negative manner (Mohanram et al., 2020; Callan & Thomas, 2012; Farooque et al., 2019) in the short and long-term periods. This may suggest that despite quality team groups or governance, emerging markets may fail to realize improved financial targets (Mohammed et al., 2023).

6.1 Limitation and Future Studies

Our study embraces the limitation of employing only emerging markets, instead of firms within the markets, so the quality of measure of the models is hindered. Again, this study does not delve deeply into the nuances of why this relationship exists or how it might vary across different industries of with varying characteristics. Future studies could explore different forms of compensations, their timing, and how they align with long-term firm performance in future estimations. A limitation of this study is its cross-sectional design, which precludes definitive conclusions about causality between the variables and financial performance. Nevertheless, the findings have crucial relevance to those charged with governance, regulation and shareholders in emerging markets. It is expected that future research should be directed to use firms' dataset in the form of a longitudinal panel study to reveal broad and detailed insights to aid policy decisions and formulations.

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