

**CHIEF EXECUTIVE OFFICER POWER, INSTITUTIONAL OWNERSHIP,
INTEGRATED REPORTING, AND EARNINGS QUALITY AMONG LISTED
FIRMS IN EAST AFRICA**

BY

TIRISA BONARERI CAROLINE

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ECONOMICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF A DOCTOR OF PHILOSOPHY DEGREE IN
BUSINESS MANAGEMENT**

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DECLARATION

Declaration by the Candidate

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Sign:_____ Date:_____

Tirisa C. Bonareri

PhD/BM/8611/2020

Declaration by the Supervisors

This research thesis has been submitted for examination with our approval as University Supervisors.

Sign:_____ Date:_____

Prof. Josphat Cheboi

Department of Accounting and Finance,
School of Business and Economics,
Moi University.

Sign:_____ Date:_____

Prof. Ronald Bonuke

Department Marketing and logistics.
School of Business and Economics,
Moi University.

DEDICATION

I dedicate this work to the Principal of Makerere University Business School who has labored selflessly to ensure that staff acquired knowledge to the highest level possible. Long live Prof. Wasswa Balunywa.

To my parents: Mr. Onsombi Dismas Tirisa and Mrs. Moraa Gladys who have brought me up to be the woman I am and always encouraged me to study. God bless you and give long life Mum and Dad. My children: Acham Gladys, Tukei Dismas, Oboi Martin, and Asio Selina who have always given me time to read and understood the times I was away. To my brothers and sisters who have always been there for me in all aspects. God bless you all.

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ABSTRACT

Earnings quality is an important aspect that influences decisions relating to resource allocation in the capital markets. Earnings also indicate the extent to which the firm has engaged in value-added activities. Manipulation of earnings has degraded shareholders' trust in the quality of information reported by corporations throughout the world and the eventual survival of the firm. This has heightened the interest of scholars, practitioners, and policymakers in the studies on earnings quality. Although many studies suggest that Chief Executive Officer (CEO) power affects earnings quality (EQ), the findings are mixed and inconclusive. The main objective of the study was to investigate the moderating effect of Institutional Ownership (IO) in the relationship between CEO power and EQ as mediated by Integrated Reporting (IR). The specific objectives were to establish whether: First, the various dimension of CEO power; CEO structural power (CEOSP), CEO ownership power (CEOOP), and CEO expert power (CEOEP) affect EQ. Second, IO moderates the relationship between CEO power and EQ. Third, IR mediated the relationship between CEO power and EQ. Finally, IO moderates the relationship between CEO power and EQ as mediated by IR. The study was grounded on; Upper Echelon theory, Agency theory, and Signaling theory. The study used the positivism paradigm and adopted the explanatory and longitudinal research design. The target population comprised 117 firms listed in East Africa (EA). Based on inclusion criteria for the study period 2013 to 2021, the sample size was 78 firms with 702 firm-year observations. Panel data was extracted from the individual firm's audited annual reports. The data was analyzed through descriptive and inferential statistics. The results of the Hausman test guided the choice between fixed and random effect regression. The study found that CEOSP ($\beta = -0.417$, $p < 0.05$), CEOOP ($\beta = -0.201$, $p < 0.05$), and CEOEP ($\beta = -0.176$, $p < 0.05$) had a positive and significant effect on EQ. Further results indicated that IO moderated the relationship between CEOSP ($\beta = 0.088$, $p < 0.05$, ΔR^2 0.198), CEOOP ($\beta = -0.88$, $p < 0.05$, ΔR^2 0.188), CEOEP ($\beta = -0.064$, $p < 0.05$, ΔR^2 0.224) and EQ. The results further indicated that IR mediated the relationship between CEO power and EQ; CEOSP ($\beta = -0.0076$, $p < 0.05$), CEOOP ($\beta = -0.0138$, $p < 0.05$), and CEOEP ($\beta = -0.0101$, $p < 0.05$). Lastly, the study found that IO moderated the relationship between; CEOSP ($\beta = -0.656$, $p < 0.05$), CEOOP ($\beta = 0.061$, $p < 0.05$), and CEOEP ($\beta = 0.054$, $p < 0.05$) on EQ as mediated by IR. Therefore the study concludes that CEO power is a positive driver of EQ. Additionally, the study revealed an indirect relationship between CEO power and EQ through IR and IO as a moderator. The study's findings support Upper Echelon's and agency theories, that CEOs affect the accounting results of the firm which affects the quality of earnings. The results further support the signaling theory, that the CEO signals to the shareholders by producing IR to indicate that the company has quality earnings. The study recommends; that policymakers and regulatory bodies may consider the mandatory adoption of IR to improve EQ. Since the study focused on listed firms in EA, the results may not be generalized in other regions, which is fertile ground for further research.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES	xiii
LIST OF FIGURES	xv
LIST OF ACRONYMS AND ABBREVIATIONS	xvi
OPERATIONAL DEFINITION OF TERMS	xxi
CHAPTER ONE	1
INTRODUCTION.....	1
1.0 Overview	1
1.1 Background of the Study	1
1.2 Statement of the Problem.....	9
1.3 Objectives of the Study	12
1.3.1 General Objectives.....	12
1.3.2 Specific Objectives	12
1.3.3 Research hypotheses	13
1.4 Significance of the Study	14
1.5 Scope of the Study	15
CHAPTER TWO	17
LITERATURE REVIEW	17
2.0 Overview	17
2.1 Conceptual Discussion.....	17
2.1.1 Earnings Quality	17
2.1.2 CEO power.....	21
2.1.2.1 CEO Structural Power	23
2.1.2.2 CEO Ownership Power	25
2.1.2.3 CEO Expert power	27
2.1.2.3.1 CEO financial expertise	27
2.1.2.3.2 CEO Tenure	28
2.1.3 Institutional Ownership.....	29

2.1.4 Integrated Reporting	31
2.2 Theoretical Review	32
2.2.1 Upper Echelons Theory	33
2.2.2 Agency Theory.....	34
2.2.3 Signaling Theory.....	37
2.4.4 Integration of Theories in explaining earnings quality	38
2.5 Empirical Review.....	39
2.5.1 CEO Power and Earnings Quality	39
2.5.2 CEO Structural Power and Earnings Quality.....	40
2.5.3 CEO Ownership Power and Earnings Quality.....	43
2.5.4 CEO Expertise Power and Earnings Quality	45
2.6 CEO Power and Integrated Reporting	48
2.6.1 CEO Structural Power and Integrated Reporting.....	51
2.6.2 CEO Ownership and Integrated Reporting	53
2.6.3 CEO Expert Power and Integrated Reporting.....	55
2.7 Integrated Reporting and Earnings Quality	57
2.8 Control Variables	59
2.8.1 Firm Size and earnings quality	60
2.8.2 Firm Leverage and Earnings Quality	61
2.8.3 Firm Age and earnings quality.....	62
2.9 Conceptual Framework.....	63
CHAPTER THREE	65
RESEARCH METHODOLOGY	66
3.0 Introduction.....	66
3.1 Research Paradigm.....	66
3.2 Research Design.....	67
3.3 Target Population.....	68
3.4 Inclusion/Exclusion Criteria	68
3.5 Measurement of Variables	69
3.5.1 Dependent Variable	69
3.5.2 Independent Variable	78
3.5.2.1 CEO Structural Power:.....	79
3.5.2.2 CEO ownership power:	81
3.5.2.3 CEO expert power:.....	81

3.5.3 Moderating Variable	81
3.5.3 Mediating Variable	81
3.5.4 Control Variable.....	83
3.6 Nature and Type of the Data	84
3.6.1 Firm Selection	84
3.6.2 Data Collection	84
3.6.3 Data Preparation.....	85
3.7 Statistical Model (Conditional Process Model)	86
3.8 Model Specification for Moderated Mediation.....	91
3.9 Data Analysis and Presentation	94
3.10 Assumption of Multiple Linear Regression and Diagnostic Tests	95
3.10.1 Multicollinearity	95
3.10.2 Heteroskedasticity.....	96
3.10.3 Autocorrelation	97
3.10.4 Normality Test	98
3.10.5 Unit Root Test.....	98
3.10.6 Random and Fixed Effects.....	99
3.10.7 Hausman Test.....	100
3.11 Testing for Mediation	101
3.12 Testing for Moderation Mediation.....	102
3.13 Ethical Considerations	103
CHAPTER FOUR.....	104
DATA ANALYSIS, PRESENTATION, AND INTERPRETATION	104
4.0 Overview	104
4.1 Descriptive Statistics of the Study Variables	104
4.2 Inferential Analysis	107
4.2.1 Assumption of Linear Regression and Diagnostic Tests	108
4.2.2 Normality Tests.....	108
4.2.3 Multicollineality test	109
4.2.4 Stationarity/ Unit root test.....	110
4.2.5 Heteroskedasticity test	112
4.2.6 Autocorrelation test.....	112
4.2.7 Model Specification test – Ramsey RESET test.....	113
4.3 Correlation Analysis	114

4.4 Regression Analysis.....	117
4.4.1 Control Variables.....	118
4.4.2 CEO Power and Earnings Quality	121
4.4.2.1.Fixed effect.....	122
4.4.2.2 Random effect.....	123
4.4.2.3 Hausman Test.....	125
4.4.3 Effect of Institutional Ownership on Earnings Quality	127
4.4.4 Effect of CEO Power on Integrated Reporting	130
4.4.5 Effect of Integrated Reporting on Earnings Quality	136
4.4.6 Effect of CEO Power on earnings quality.....	139
4.4.6.1 Fixed effect.....	140
4.4.6.2 Random effect	142
4.5 Moderation Effects.....	144
4.5.1 Moderation Effect of Institutional Ownership in the Relationship between CEO Power and Earnings Quality	146
4.5.2 Moderation Effect of Institutional Ownership in the relationship between CEO Power and Integrated Reporting	154
4.6 Mediating Effect of integrated reporting in the relationship between CEO power and earnings quality.....	161
4.7 Moderated Mediated Effect	164
4.8 Chapter Summary	166
CHAPTER FIVE	169
SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS	169
5.1 Overview	169
5.2 Summary of Findings.....	169
5.2.1 Summary of the Descriptive Results.....	170
5.2.2 Summary of the Correlation Results.....	170
5.2.3 Summary of the Regression Results	171
5.2.3.1 Summary of regression results on CEO Power and earnings quality	172
5.2.3.1.1 CEO structural power and earnings quality	172
5.2.3.1.2 CEO ownership power and earnings quality	172
5.2.3.1.3 CEO expert power and earnings quality	173
5.2.4 Summary of the relationship between CEO power and integrated reporting	173

5.2.5 Summary of the moderating effect of institutional ownership in the relationship between CEO power and earnings quality.	174
5.2.5.1 Moderating effect of institutional ownership in the relationship between CEO structural power and earnings quality.	174
5.2.5.2 Moderating Effect of institutional ownership in the relationship between CEO ownership power and earnings quality.....	174
5.2.5.3 Moderating effect of institutional ownership in the relationship between CEO expert power and earnings quality	175
5.2.6 Summary of the Mediation Results.....	175
5.2.7 Summary of the moderating effect of institutional ownership in the relationship between CEO power and integrated reporting	176
5.3 Summary of Moderated Mediation Results	176
5.4 Conclusion	177
5.5 Study Implications and Recommendations.....	177
5.5.1 Policy and Practical Recommendations.....	177
5.5.2 Theoretical Implications	178
5.5.3 Managerial recommendations	180
5.6 Limitations and Recommendations for Further Research	181
REFERENCES	183
APPENDICES	206
Appendix I: Target Population: Firms Listed in East Africa.....	206
Appendix II: Inclusion/exclusion criteria	211
Appendix II a: Cross listed firms in East Africa	211
Appendix II b: Suspended firms in East Africa	211
Appendix II c: Firms newly listed.....	211
Appendix III: International Integrated Reporting Framework (IIRF) guidelines based on International Integrated Reporting Council (IIRC)	213
Appendix III a: Guiding principles, content elements and fundamental concepts	213
Appendix III b: Content Element Summarized index.....	213
Appendix III c: Detailed index.....	214
Appendix IV: Data Collection Schedules	219
Appendix IV (a): Dependent Variable- Earnings quality	219
Appendix IV (b): Mediator Variable – Integrated reporting.....	220
Appendix IV (c): Independent Variable – CEO Power	223

Appendix IV (e): Control Variable	224
Appendix V: Regression results for Moderation on Path c	225
Appendix V(a): Earnings Quality regressed on Institutional Ownership – Random Effect.....	225
Appendix V(b): Earnings Quality regressed on Institutional Ownership – Fixed Effect.....	226
Appendix V(c): Earnings Quality regressed on Institutional Ownership – Hausman Test.....	227
Appendix V(d): Earnings Quality regressed on CEO Structural Power and Institutional Ownership – Random Effect	228
Appendix V(e): Earnings Quality regressed on CEO Structural Power and Institutional Ownership – Fixed Effect.....	229
Appendix V(f): Earnings Quality regressed on Structural Power and Institutional Ownership – Hasman Test	230
Appendix V(g): Earnings Quality regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power – Random Effect.....	231
Appendix V(h): Earnings Quality regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power – Fixed Effect	232
Appendix V(i): Earnings Quality regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power –Hausman Test	233
Appendix V(j): Earnings Quality regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power – Random Effect.....	234
Appendix V(k): Earnings Quality regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power – Fixed Effect.....	235
Appendix V(l): Earnings Quality regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power – Hausman Test.....	236
Appendix VI: Regression results for Moderation on Path a	237
Appendix VI (a): Integrated Reporting regressed on Institutional Ownership – Random Effect	237
Appendix VI (b): Integrated Reporting regressed on Institutional Ownership – Fixed Effect.....	238

Appendix VI (c): Integrated Reporting regressed on Institutional Ownership – Hausman Effect.....	239
Appendix VI (d): Integrated Reporting regressed on Institutional Ownership and CEO Structural Power – Random Effect	240
Appendix VI (e): Integrated Reporting regressed on Institutional Ownership and CEO Structural Power – Fixed Effect.....	241
Appendix VI (f): Integrated Reporting regressed on Institutional Ownership and CEO Structural Power – Hausman Test.....	242
Appendix VI (g): Integrated Reporting regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power– Random Effect.....	243
Appendix VI (h): Integrated Reporting regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power– Fixed Effect	244
Appendix VI (i): Integrated Reporting regressed on Institutional Ownership, Structural Power and Ownership Power– Hausman Test	245
Appendix VI (j): Integrated Reporting regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power– Random Effect.....	246
Appendix VI (k): Integrated Reporting regressed on institutional ownership, CEO structural power, CEO ownership power and CEO expert power– Fixed effect	247
Appendix VI (l): Integrated Reporting regressed on Institutional Ownership, CEO structural Power, CEO ownership Power and CEO expert Power– Hasman Test Effect.....	248
Appendix VII: Regression Results for moderation medaition.....	249
Appendix VII (a): Earnings Quality regressed on Institutional Ownership, CEO Power and Integrated Reporting– Random Effect	249
Appendix VII (b): Earnings Quality regressed on Institutional Ownership, CEO Power and Integrated Reporting– Fixed Effect	250
Appendix VII (c): Earnings Quality regressed on Institutional Ownership, CEO Power and Integrated Reporting– Hasman Test Effect.....	251

LIST OF TABLES

Table 4.1 Descriptive Statistics of the study variables	106
Table 4.2 Shapiro – Wilk normality test for normality.....	109
Table 4.3 Tolerance and VIF test.....	110
Table 4.4 Unit Root / Stationarity test	111
Table 4.5 Heteroskedasticity test - Breusch Pagan / Cook-Weisberg test.....	112
Table 4.6 Autocorrelation - Wooldridge test	113
Table 4.7 Ramsey RESET Test (using powers of the fitted values of DA).....	114
Table 4.8 Results of Pairwise Correlation Matrix	115
Table 4.9 Regressing results of control variables - Fixed Effect.....	120
Table 4.10 Regressing results of control variable - Hausman test.....	121
Table 4.11 Regressing earnings quality on CEO Power- Fixed Effect.....	123
Table 4.12 Regressing earnings quality on CEO Power- Random Effect	124
Table 4.13 Hausman Test Results – Direct Effect.....	126
Table 4.14 Regressing earnings quality on institutional ownership – Fixed effect ...	128
Table 4.15 Regressing earnings quality on Institutional Ownership – Random Effect	129
Table 4.16 Regressing earnings quality on institutional ownership – Hausman test.	130
Table 4.17 Regressing integrated reporting on CEO power – Fixed effect.....	132
Table 4.18 Regressing integrated reporting on CEO Power – Random Effect	134
Table 4.19 Regressing integrated reporting on CEO power – Hausman test	135
Table 4.20 Regressing earnings quality on integrated reporting – Fixed effect	137
Table 4.21 Regressing earnings quality on integrated reporting – Random effect....	138
Table 4.22 Regressing earnings quality on integrated reporting - Hausman test	139
Table 4.23 Regressing earnings quality on CEO power – Fixed effect.....	141
Table 4.24 Regressing earnings quality on CEO power – Random effect	143
Table 4.25 Regressing earnings quality on CEO power - Hausman test.....	144
Table 4.26 Hierarchical Regression Model for Moderation Effect of Institutional Ownership in the relationship between CEO power and Earnings quality	154
Table 4.27 Hierarchical Regression Model for Moderation Effect of Institutional Ownership on CEO power and Integrated Reporting.	161
Table 4.28 Sobel test results on the mediation effect.	163

Table 4.29 Summary of study variables	166
Table 4.30 Index of moderated mediation - Sobel Test.....	166
Table 4.31 Index of moderated mediation - Goodman Test	166
Table 4.32 Summary of Hypotheses Testing.	168

LIST OF FIGURES

Figure 2.1 Conceptual Framework	65
Figure 3.1 Conditional Process Model.....	86
Figure 3.2 Statistical diagram for moderating analysis	87
Figure 3.3 Mediation: Conditional process model 2.....	88
Figure 3.4 Statistical diagram for mediation.....	88
Figure 3.5 Conditional process model 3	89
Figure 3.6 Statistical Diagram	89
Figure 3.7 Mediated moderation diagram.....	90
Figure 3.8 A statistical diagram for the mediated moderated.....	90
Figure 4.1 Modgraph for the moderating effect of institutional ownership on the relationship between CEO structural power and earnings	147
Figure 4.2 Modgraph for the moderating effect of institutional ownership on the relationship between CEO ownership power and earnings quality.	149
Figure 4.3 Modgraph for the moderating effect of institutional ownership on the relationship between expert power and earnings quality	151
Figure 4.4 Modgraph for the moderating effect of institutional ownership on the relationship between CEO structural power and integrated reporting.....	156
Figure 4.5 Modgraph for the moderating effect of institutional ownership on the relationship between CEO ownership power and integrated reporting. ..	158
Figure 4.6 Modgraph for the moderating effect of institutional ownership on the relationship between CEO expert power and integrated reporting.	159

ACRONYMS AND ABBREVIATIONS

ABSA	Amalgamated Banks of South Africa
AIG	American International Group
AJBUMA	African Journal of Business and Management
ALSI	All Share Index
ARDL	Autoregressive Distributed Lag
ARM	Athi River Mining Limited
ASEA	African Securities Exchanges Association
BAT	British American Tobacco
BK	Bank of Kigali
CDP	Carbon Disclosure Project
CDSB	Climate Disclosure Standards Board
CEO	Chief Executive Officer
CEOEP	CEO Expert Power
CEOOP	CEO Ownership Power
CEOPG	CEO Pay Gap
CEOPS	CEO Pay Slice
CEOSP	CEO Structural Power
CFO	Chief Finance Officer
CIC	Co-operative Insurance Company
CL	Current liabilities
CMA	Capital Market Authority
CMSA	Capital Markets and Securities Authority
CPA	Certified Public Accountant

CRDB	Cooperative and Rural Development Bank
CSD	Central Securities Depositories
CSR	Corporate Social Responsibility
DA	Discretionary Accruals
DFCU	Development Finance Company of Uganda
DSE	Dar es Salaam Security Exchange
EA	East Africa
EAC	East African Community
EASEA	East African Securities Exchanges Association
EASRA	East African Securities Regulatory Authorities
EDA	Estimated Discretionary Accruals
EGM	Enterprise development Market
EO	Earnings Quality
FA	Firm Age
FL	Firm Leverage
FS	Firm Size
GDP	Gross Domestic Product
GLS	Generalized Least Squares
GRI	Global Reporting Initiative
H0	Hypothesis
HF	Housing Finance
IFRS	International Financial Reporting Standards
IIRC	International Integrated Reporting Council
IIRF	International Integrated Reporting Framework

IJAMSR	International Journal of Academic Management Science Research
IJLMA	International Journal of Law and Management
IO	Institutional ownership
IOSCO	International Organization of Securities Commissions
IPO	Initial Public Offer
IR	Integrated reporting
IRS	integrated reporting scores
JBER	Journal of Business & Economics Research
JISTEM	Journal of Information Systems and Technology Management
JSE	Johannesburg Stock Exchange
KASU	Kaduna State University
KCB	Kenya Commercial Bank
KES	Kenyan Shilling
KPI	Key Performance Indicators
LOG	Logarithm
LOGTA	Log of Total Assets
LSI	Local Share Index
MTN	Mobile Telephone Network
NACOSTI	National Commission for Science, Technology, and Innovation
NCL	Non-Current Liabilities
NDA	Non-discretionary accrual
NIC	National Insurance Company
NICOL	National Investments Company Limited
NMB	National Microfinance Bank

NSE	Nairobi Security Exchange
OLS	Ordinary Least Squares
OTC	Over-the-Counter
PBIT	Profit Before Interest and Tax
PJCSS	Pakistan Journal of Commerce and Social Sciences
PLC	Public Limited company
PMDAM	performance matched discretionary accruals model
PPE	Property Plant and equipment
RASI	Rwanda All Share Index
REC	Receivable
REIT	Real estate investment trusts
REV	Revenue
ROA	Return on assets
RSE	Rwanda Security Exchange
RSI	Rwanda Share Index
RWF	Rwanda Franc
SASB	Sustainability Accounting Standards Board
SEC	Securities and Exchange Commission
SOE	State-Owned Enterprises
SQRT	Square Root
TA	Total assets
TAC	Total accruals,
TATEPA	Tanzania Tea Packers
TMT	Top Management Team

TOL	Tanzania Oxygen Limited
TSI	Tanzania Share Index
TWIGA	Tanzania Portland Cement Company Limited
TZS	Tanzanian shilling
UCL	Uganda Clay Limited
UGX	Uganda shillings
UK	United kingdom
UN	United nations
US	United states
USE	Uganda securities exchange
VIF	Variance Inflation Factors
WFE	World Federation of Exchange

OPERATIONAL DEFINITION OF TERMS

Accruals:	are amounts of money that have been earned or spent, but not yet received or paid.
CEO Expertise power:	It is a unique skill that develops through time as a result of learned knowledge or cognitive job experience (Wu <i>et al.</i> , 2011)
CEO Ownership power:	This is the percentage shareholding of a CEO in a company. The more shares the CEO owns in the firm, the more the power to influence the decisions of that firm.
CEO Power:	Refers to the authority and influence that a Chief Executive Officer (CEO) holds within an organization.
CEO Structural power:	This is the CEO's power as a result of their position, title, or office(s).
Discretionary Accrual:	is part of total accruals, which are not directly observable, and they are easily manipulated by the company.
Earnings quality:	Earnings quality is the ability of reported earnings to reflect the company's true earnings as well as the usefulness of reported earnings to predict future earnings. It is the stability, persistence, and lack of variability analysts in reported earnings (Bellovary & Don, 2005; Gissel, Giacomino & Akers 2005).
Firm age:	The number of years of incorporation of the company, measured as the number of years since the establishment of the company (Mapitiya, Ajward & Senaratne, 2016).
Firm leverage:	Is the amount of debt a company has in its mix of debt

and equity or the amount of debt a firm uses to finance assets. Measured by dividing long-term debt by total assets at the end of the year (Mao, Qi, & Zhang, 2017).

Firm size: It is the size of a company, measured by the natural logarithm of total assets of the firm in a year (Ali, Noor, Khurshid & Mahmood, 2015).

Institutional ownership: Institutional ownership is the ownership by the government, financial institutions, legal entities, foreign institutions, and other trusteeships and institutions (Jensen & Meckling, 1976).

Integrated reporting: “Integrated reporting is an explicit communication on a firm’s strategy, governance, performance, and prospects that lead to the creation of value over the short-, medium- and long-term and reflects the commercial, social, and environmental context within which it operates”. (IIRC), it involves reporting both the financial and non-financial information in the reports (Obeng, Ahmed & Miglani, 2020).

Non - discretionary Accrual is a non-mandatory expense/asset that is recorded within the accounting system that has yet to be realized.

Securities exchange: A place or system in which stocks, bonds, or other securities are bought and sold mainly by stockbrokers. It is a market for the listing of securities. In this study shares traded in Nairobi (NS), Uganda (USE), Rwanda (RSE) and Dar es Salaam, (DSE).

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter discusses the background, institutional setting, problem statement, objectives, hypothesis, the significance of the study, and scope of the study.

1.1 Background of the Study

Earnings quality has emerged as an important issue following numerous cases of accounting scandals and financial crises around the world (Enron, WorldCom, HealthSouth, Tyco, Waste Management, Xerox, Subeem, Uchumi, mumias sugar and trust, bank, to mention a few). Earnings quality continues to be a key indicator of financial health since it represents a firm financial performance, market efficiency, and economic growth (Ferentinou & Anagnostopoulou, 2016). It is also required for the successful utilization of financial resources in stock markets. Earnings quality has continued to attract keen interest among academicians, practitioners, and policymakers because of the stakeholders' interest in earnings and the ultimate survival of the firms (Elzahaby 2021; Rezaee, Dou & Zhang, 2020; Beyer, Guttman & Marinovic, 2019; Sulistiawan & Rudiawarni, 2019; Arniati, *et al.*, 2019; Chen & Komal, 2018; Levitt, 2000; Shen, & Chih, 2007; Debnath, 2017). Earnings quality is the ability of reported earnings to reflect the company's true earnings as well as the effectiveness of reported earnings to predict future earnings (Bellovary & Don 2005; Gissel, Giacomino & Akers, 2005). The most significant aspect of a financial statement is the quality of the earnings. (Dichev, Graham, Harvey & Rajgopal, 2013), since it affects the company, investments, and the CEOs' decisions (Debnath, 2017, Levitt 2000, Alhmood, Shaari & Al-dhamari, 2020).

These earnings have a significant impact on the stock price and subsequently the firm value. Therefore, its important functions explain the continuous research focus on earnings quality. Quality earnings provide information about the entity's financial performance that is relevant for specific decision-making for specific stakeholders (Yassin, Abdallah, & Al-Ibbini, 2015). Earnings direct and guide the firm in resource allocation in the capital markets and indicate the extent to which the firm has engaged in value-added activities (Liu 2012, Altarawneh, Shafie, & Ishak, 2020; Al-Sraheen & Alkhatib, 2016; Debnath, 2017). Financial reporting guidelines allow CEOs to use their judgment in financial reporting, such as the depreciation method, revenue recognition method, choice of asset impairment technique, and recording of receivables which all affect the quality of earnings.

In light of the freedom to choose their accounting methods, advantageous CEOs employ discretion management while ensuring that the company prepares and presents financial statements to satisfy their own particular desire and others just by default since they will always make inevitable accounting decisions that affect the earnings quality (Zhang, Tang & Lin, 2016; Fatima, Haque & Usman, 2020; Ramirez-Orellana, Martinez-Romero & Mario-Garrido, 2017; Debnath, 2017). When the CEO manipulates the earnings upwards or downwards by accounting tactics, it affects the quality of earnings hence, misleading the shareholders about the company's underlying economic performance or the contractual outcome that relies on the figures presented in the financial statements. The manipulation of earnings damages investors' confidence in the accuracy of the information reported by companies that are publicly traded. (Alhmood, *et al.*, 2020; Saleem, Alifiah & Tahir, 2016; González & García-Meca 2014).

Regulators, financial analysts, and accounting professionals have long been concerned about the accuracy of financial statements, especially in the aftermath of the global failure of several big firms (Singh, Aggarwal & Anand, 2016). CEOs may have an impact on reported earnings by choosing accounting methods or making operational decisions at their discretion but affecting earning quality and this could affect the firm value. CEOs have access to more information than the shareholders and can choose to mislead shareholders by manipulating the accounting information to satisfy their personal interests (Ongsakul, Jiraporn & Kim, 2020).

For instance: In one of the most contentious accounting scandals, it was revealed that Enron had been exaggerating its earnings while using accounting loopholes to conceal bad debt of billions of dollars. The scandal caused Enron's share price to drop from almost \$90 to under \$1 in a year, causing shareholders to lose nearly \$74 billion; A year after the Enron disaster, it was discovered that WorldCom, an American communications company, had inflated its assets by about \$11 billion, making it by far the greatest accounting scam in history. The company underreported line costs while inflating revenues through incorrect inputs by capitalizing line costs rather than allocating them to expenses; It was uncovered that the CEO and Chief Finance Officer (CFO) of Tyco International, an American security systems company, had stolen more than \$150 million from the business and overstated its earnings by more than \$500 million in their reports by using unapproved loans and stock sales; Over \$1.8 billion in falsified earnings were found to have been reported by HealthSouth Corporation; The CEO of the Federal Home Loan Mortgage Corporation was found to have overstated earnings by more than \$5 billion. In East Africa companies like Uchumi, Trust Bank, Dubai Bank, chase bank, Imperial Bank (Central Bank of Kenya, 2016) & Mumias in Kenya, NICOL in Tanzania, and Crane Bank in Uganda

among others have had accounting scandals that have had an impact on earnings quality. Many types of research have been carried out to find the root cause of these many scandals but with inconclusive or mixed findings and continuous occurrence of the same. Hence this has continued to attract more studies to look into the same issue.

The increased earnings manipulation has attracted attention to the role of the Chief executive officer (CEO) power on earnings quality (Alhmood *et al.*, 2020). Power is the right or ability to control people, things, or their behaviors; it is the ability to deal with internal and external sources of uncertainty. CEO power is the CEO's ability to overcome resistance and consistently influence crucial choices within a company. Powerful CEOs are executives that can consistently influence major choices in their organizations, despite probable opposition from other executives (Haleblian & Finkelstein, 1993; Salancik & Pfeffer, 1977; Adams, Almeida & Ferreira, 2005; Finkelstein, 1992). CEOs tend to be the most influential members of an entity as they have control over corporate performance and they exercise authority over corporate decisions like financial disclosures and ensuring quality of earnings (Chou & Chan 2018; Altarawneh, *et al.*, 2020; Alhmood, *et al.*, 2020; Bouaziz & Jarboui, 2020). Other scholars have argued that power motivates CEOs to perform effectively since they may restrict board control, which is sometimes an obstacle to fast action required for enhanced performance (Finkelstein & Hambrick, 1996). Therefore CEO's power may have a positive or a negative impact on the quality of earnings (Saidu, 2019).

The upper echelons theory predicts that CEOs are sometimes motivated to quest for their own interest at the expense of the shareholders (Bouaziz *et al.*, 2020). Therefore the CEO may be compelled to manipulate the earnings since they can

select the reporting method that is misleading to the users of such information for their own personal benefit (Kwarbai, 2019; Egbunike & Odum, 2018). This is supported by the agency theory, which states that due to information asymmetry, there may be a conflict between the shareholder (principal) and the CEO (agent) and that the CEOs may wish to benefit themselves at the expense of the shareholders because they have access to more information, thereby manipulating earnings. Previous research has looked at CEO power dimensions (that is CEO: structural, duality, tenure, ownership, political connection, expertise, prestige) as the main determinant of earnings quality (Alves, 2021; Shiah-Hou, 2021 - in Portuguese-listed companies; Bouaziz, Salhi & Jarboui 2020-French firms; Kouaib & Jarboui 2016) but with mixed conclusions.

CEOs obtain structural power as a result of the position or office they occupy. It is the position in the company's hierarchical structure. It is concerned with the official distribution of offices within an organization. Title, remuneration, and the number of CEOs with greater powers determine the structural power of the CEO (Finkelstein, 1992). In both theory and practice, ownership is acknowledged as a good source of power (Finkelstein, 1992; Onali, *et al.*, 2016; Wu *et al.*, 2011). The ownership of the firm is the primary driver of the agent-principal relationship in agency theory. CEOs acquire a good proportion of company shareholding making them agents cum-principal officers, allowing them to influence nearly all operations in the company, including the quality of earnings reported (Mio, Fasan & Ros, 2016). CEO expert power may increase earnings quality through effective management as revealed by Falato, & Milbourn (2015); Wang *et al.*, (2016); Chou & Chan (2018). Expertise is the ability to deal with environmental reliance. It is a specialized ability obtained as a result of knowledge or cognitive job experience

gathered over time (Wu *et al.*, 2011; Finkelstein, 1992). The length of time the CEOs take, allows them to build experience and thus power (Saidu, 2019; Kirchmaier & Stathopoulos, 2008). Therefore, this study investigated CEO power (CEO structural power, CEO ownership power & CEO expert power) on earnings quality but with other intervening variables which could explain the mixed and inclusive findings.

While the research has shown that CEO power affects earnings quality, the question of whether institutional ownership may interfere with the relationship arises. Prior research has shown that institutional ownership has a link with earnings quality (Alhadi, Senik, & Johari, 2018). Institutions have more shareholding than other stockholders, therefore they are usually able to control the majority of stocks and can keep a closer eye on CEOs' policies than other stockholders (Nurleni & Bandang, 2018). Increasing institutional ownership to oversee the CEOs is one strategy to minimize the agency's cost. Institutional investors have a high level of ownership in enterprises, which works as an efficient monitoring mechanism (Alhadi, *et al.*, 2018; Zhong *et al.*, 2017). The presence of such large investors can influence CEO conduct and protect investments via monitoring sources (Zhong *et al.*, 2017). In addition, institutional investors have higher incentives to engage in monitoring operations than small investors due to the substantial costs associated with earnings manipulation (Hadani *et al.*, 2011). Furthermore, they have less incentive to engage in earnings manipulation (Alzoubi, 2016), thereby boosting the quality of reported earnings (Alhadi *et al.*, 2018).

Furthermore, it is unknown if integrated reporting could mediate the relationship between CEO power and earnings quality. Previous research has revealed that there is

a link between; CEO power and integrated reporting (Garcia-Sanchez, *et al.*, 2020; Vitolla & Raimo, 2018; Aguinis & Glavas, 2012; Ryan & Wiggins, 2004) and integrated reporting and earnings quality (Francis, Rajgopal & Zang, 2008; Karajeh 2019; Rouf & Akhtaruddin, 2018; Ebrahimabadi & Asadi, 2016; Francis, *et al.*, 2005). Therefore there is a likelihood that CEO power could ensure that the firm publishes integrated reporting which will in return lead to quality earnings. Firms have numerous methods for communicating information regarding their earnings quality. In this aspect, corporate disclosure can serve as a signal to capital markets, since CEOs can utilize integrated reporting to attract new investment and improve earnings quality (Watts & Zimmerman, 1978; Ross, 1979; Campbell, 2000; Watson *et al.*, 2002; Xiao *et al.*, 2004). Earnings manipulation is less common in corporations with integrated reporting (Menicucci & Paolucci, 2018). Globalization, financial scandals, and the complexity of business activities have all increased the demand for more information. Companies have responded by increasing their financial and non-financial disclosures (integrated reporting) to demonstrate transparency and accountability to stakeholders (Omran, *et al.*, 2021; Camilleri, 2018).

The accounting profession has critiqued the traditional financial reporting paradigm, stating that it does not offer stakeholders enough information to analyze the company's past and future performance (Flower, 2015). Integrated reporting is the most recent innovation in the world of corporate reporting, and it addresses the drawbacks of traditional financial reporting (IIRC, 2013). It is an important aspect of earnings quality which involves reporting both the financial and non-financial information in a single report. Nonetheless, it is more than a compilation of financial, environmental, social, and governance data (Adams, 2015; IIRC 2013; Beneish, 2001; Shirabe & Nakano, 2019; Obeng *et al.*, 2020; Yasar, 2013). It is noted in the signaling

theory that signaling would help stakeholders to better check the value of the company and then to make more favorable decisions that affect the quality of earnings (Whiting & Miller, 2008). This clarifies why companies are stimulated to disclose voluntarily more information than the mandatory ones required by laws and regulations, that is to appear positive in the market with quality earnings (Spence, 1973; Connelly *et al.*, 2011).

According to Barth, *et al.*, (2017); de Villiers, Rinaldi, and Unerman, (2014); Lee and Yeo, (2016), integrated reporting has acquired a lot of momentum, and the IIRC has received support from some of the world's most prestigious organizations like Carbon Disclosure Project (CDP), Climate Disclosure Standards Board (CDSB), Global Reporting Initiative's (GRI), and the Sustainability Accounting Standards Board (SASB). Despite this, no country, except South Africa, has made integrated reporting mandatory or even regulated (Ahmed Haji & Anifowose, 2017). Integrated reporting gives forward-looking information on how the organization creates value using a variety of capitals (financial, material, human, intellectual, social, and natural), which is critical for analyzing the firm's long-term prospects (IIRC, 2013). It's argued that adopting integrated reporting will reduce information asymmetry by improving the quality of information accessible to shareholders. Therefore adopting integrated reporting may hinder the CEO from manipulating the earnings since information is disclosed. Additionally, having institutional investors in place could also control the powers of these CEOs in ensuring that they publish integrated reporting and eventually quality earnings.

Research has been carried out on; CEO power and integrated reporting (Garcia-Sanchez Raimo & Vitolla, 2020; Hichri, 2022), and integrated reporting and earnings

quality (Injeni, *et al.*, 2021; Muttakin, *et al.*, 2020) but with varied results. To the best knowledge of this study, there is no evidence of studies that investigate the moderating role of institutional ownership in the relationship between CEO power and earnings quality as mediated by integrated reporting using evidence from all the listed firms in East Africa. The research assumed that CEO power affects earnings quality, but when institutional investors are present, they will use their control mechanism to ensure that the firm publishes integrated reporting which in return will lead to quality earnings. In this regard, upper echelons theory suggests that the CEO's power may be the most important aspect in developing an integrated reporting and earnings quality system (Velte, 2019). The upper echelons theory was supplemented in the study by agency theory to bring out the information asymmetry between the CEOs and the shareholders and the signaling theory was used in the study to justify why firms may be willing to disclose voluntary information.

1.2 Statement of the Problem

Financial scandals have degraded shareholders' trust in the quality of information reported by corporations throughout the world through manipulation (Alhmood *et al.*, 2020, Saleem, Alifiah & Tahir 2016, González & Garca-Meca 2014). Despite policy and other interventions that have been conducted to remedy the problem of earnings quality, companies have continued to crumble for example: Enron was discovered utilizing accounting loopholes to hide billions of dollars in bad debt while inflating the company's revenues in 2001, resulting in a \$74 billion loss for shareholders. In 2002, WorldCom inflated its assets by about \$11 billion by underreporting line expenses by capitalizing rather than expensing them, and it inflated its revenues by entering fictitious entries. In 2002, it was found that Tyco International's CEO and CFO had exaggerated the company's earnings by more than \$500 million in their

reports. HealthSouth Corporation's earnings were found to be overstated by more than \$1.8 billion in 2003, while the Federal Home Loan Mortgage Corporation's earnings were overstated by more than \$5 billion in the same year. In 2005, American International Group (AIG) was found guilty of stock price manipulation, which resulted in a major accounting fraud of about \$4 billion. In 2008, it was found that Lehman Brothers had concealed over \$50 billion in loans by disguising them as sales using accounting loopholes. In the same year, Bernie Madoff defrauded investors out of about \$64.8 billion and Satyam Computer Services inflated their sales by \$1.5 billion in 2009. All of the above was done through earnings manipulation.

According to Kenya Capital Markets Authority (CMA) investigative report of Chase Bank acquired exclusively by the Business Daily, a Shs14 billion overdue interest hole was only detected in 2015. This was deception performed at the highest levels of management. Sh3.1 billion, previously recorded as Interest receivable, was allegedly misused by the former CFO. The CMA investigation also found how the CEO handed himself a Sh1 billion bonus (which should have been paid over five years), a portion of which was split among top directors, indicating an obvious conflict of interest (CMA, 2022). Uchumi supermarket reported manipulated earnings, which led to its demise; the retail chain recorded a profit of KEShs 357 million in 2013, while the genuine position was that it incurred a loss of KEShs 123 million. In 2014, the store registered a loss of KEShs 336 million, while management claimed a profit of KEShs 384 million (Benjamin Muindi 2015). Other companies include Mumias, Dubai Bank, Imperial Bank and National Bank, Crane Bank, and National Road Haulage Company which have had accounting scandals in East Africa.

Studies have investigated and documented the effect of CEO power on earnings quality (Alves 2021; Shiah-Hou, 2021; Mohammed, & Kurawa, 2021; Duong, Evans

& Truong, 2020; Bouaziz & Jarboui, 2020; Emilia & Sami, 2010; but presented mixed findings. While others document a positive association, others show a negative association. For example, Sandra Alves (2021); Khairul *et al.*, (2012); Sirada Nuanpradit (2019), revealed that CEO gender, CEO tenure, and financial expertise positively influence earnings quality. Shin-Rong Shiah-Hou (2021), showed a significant negative relationship between CEO's power and the firm's earnings quality. CEO with stronger CEO structural and CEO expert power is likely to generate low earnings quality while those with stronger ownership are likely to produce high earnings quality. Dalia Ali Mostafa Hemdan *et al.*, (2021), found that CEO tenure and CEO power do not affect firms reported earning quality. Elizabeth Mey & Marna de Klerk (2015), reveal that CEO financial expertise leads to less earnings quality. All these studies are providing mixed conclusions.

Studies have examined the relationship between institutional ownership and earnings quality and revealed that the presence of institutional investors reduces the chances of a CEO manipulating earnings (Alhadi *et al.*, 2018). While other studies have indicated a link between CEO power and integrated reporting; integrated reporting and earnings quality. Therefore institutional ownership could moderate the relationship between CEO power and earnings quality while integrated reporting may mediate this relationship. Furthermore, the studies were mainly carried out in developed countries/regions or one developing country. Therefore, this study sought to examine the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting in all firms listed in East Africa.

1.3 Objectives of the Study

The general and specific objectives were as follows.

1.3.1 General Objectives

The general objective of the study was to investigate the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting among listed firms in East Africa.

1.3.2 Specific Objectives

The study-specific objectives were to:

1. Investigate the relationship between;
 - a) CEO structural power and earnings quality among listed firms in East Africa.
 - b) CEO ownership power and earnings quality among listed firms in East Africa.
 - c) CEO expertise power and earnings quality among listed firms in East Africa.
2. Examine whether institutional ownership moderates the relationship between;
 - a) CEO structural power and earnings quality among listed firms in East Africa.
 - b) CEO ownership power and earnings quality among listed firms in East Africa.
 - c) CEO expertise power and earnings quality among listed firms in East Africa.

3. Investigate the mediating effect of integrated reporting on the relationship

between;

- a) CEO structural power and earnings quality among listed firms in East Africa.
- b) CEO ownership power and earnings quality among listed firms in East Africa.
- c) CEO expertise power and earnings quality among listed firms in East Africa.

4. Examine whether institutional ownership moderates the relationship between;

- a) CEO structural power and earnings quality as mediated by integrated reporting among listed firms in East Africa.
- b) CEO ownership power and earnings quality as mediated by integrated reporting among listed firms in East Africa.
- c) CEO expertise power and earnings quality as mediated by integrated reporting among listed firms in East Africa.

1.3.3 Research hypotheses

1. There is no significant relationship between;

- a) CEO structural power and earnings quality among listed firms in East Africa.
- b) CEO ownership power and earnings quality among listed firms in East Africa.
- c) CEO expertise power and earnings quality among listed firms in East Africa.

2. Institutional ownership does not significantly moderate the relationship between;

- a) CEO structural power and earnings quality among listed firms in East Africa.

- b) CEO ownership power and earnings quality among listed firms in East Africa.
 - c) CEO expertise power and earnings quality among listed firms in East Africa.
3. There is no significant mediating effect of integrated reporting on the relationship between;
- a) CEO structural power and earnings quality among listed firms in East Africa.
 - b) CEO ownership power and earnings quality among listed firms in East Africa.
 - c) CEO expertise power and earnings quality among listed firms in East Africa.
4. Institutional ownership does not moderate the relationship between;
- a) CEO structural power and earnings quality as mediated by integrated reporting among listed firms in East Africa.
 - b) CEO ownership power and earnings quality as mediated by integrated reporting among listed firms in East Africa.
 - c) CEO expertise power and earnings quality as mediated by integrated reporting among listed firms in East Africa.

1.4 Significance of the Study

The study sought to establish whether institutional ownership moderates the relationship between CEO power and earnings quality as well as whether integrated reporting mediates the relationship between CEO power and earnings quality. The findings of this study will help add more literature on CEO power, institutional ownership, integrated reporting, and earnings quality. The study informs policymakers on the significance of adopting integrated reporting.

First, the study adds new literature on the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting.

Second, the study helps investors to gain greater insight into a company's strategy since an integrated report includes material information about a company's strategy, governance and performance in which it operates, business model, and how it creates value over time, in turn supporting investment decisions and improving returns for companies.

Third, the study helps management in ensuring that they enforce integrated reporting to increase earnings quality. Integrated reporting will also reduce the information asymmetry between management and stakeholders.

Lastly, to ensure integrated reporting and earnings quality, shareholders will be able to appreciate the importance of institutional ownership. Institutional investors will moderate the powers of CEOs in making decisions about the firm's full disclosures and the quality of earnings reported.

1.5 Scope of the Study

The study sought to establish the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting among listed firms in East Africa. The CEO power constructs that were investigated in the study were: CEO structural power, CEO ownership power, and CEO expertise power. The study focused on the listed firms in East Africa for the years 2013 to 2021. The period was suitable because it covered the period from the time the IIRC (December 2013) was instituted. The study used; secondary data, both

the explanatory and longitudinal research design that involved observing a broad cross-section of firms over a period of 9 years with 78 year observation.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter discusses the study's concepts, theories, empirical review. and the conceptual framework.

2.1 Conceptual Discussion

2.1.1 Earnings Quality

Earnings quality is the ability of reported earnings to reflect the company's true earnings as well as the usefulness of reported earnings to predict future earnings. It is the stability, persistence, and lack of variability analysts in reported earnings (Bellovary & Don 2005; Gissel, Giacomino & Akers 2005). According to Dechow and Schrand (2004), analysts are likely to view earnings to be of high quality when the earnings figure perfectly echo the company's present operating performance, are respectable indicators of imminent operating performance, and are a virtuous summary measure for assessing firm value. When earnings management is high, earnings quality is poor, and vice versa. That is when managers do not interfere in the earnings reporting process, earnings quality is high. On the other hand, creditors and compensation committees may define high-quality earnings as earnings that are easily translatable into cash flows and that imitate CEO's' real performance (Kamarudin & Ismail 2014).

Healy (1985) was the first to propose the use of discretionary accruals to identify earnings manipulation, using the concept and criteria used in incentive agreements. His research looked at management accounting decisions, which hypothesize that CEOs who are compensated with earnings-based incentives use accounting practices that improve their pay. According to Healy's findings, managers' accrual practices are

tied to the income-reporting incentives of their bonus contracts, and changes in accounting processes by managers are related to the adoption or modification of their bonus plan.

DeAngelo (1988), found that managers, by accounting discretion, present a more favorable picture of their own productivity. Managers frequently criticize past management for poor operating results. In the same year, McNichols and Wilson (1988) investigate whether bad debts might be used to motivate earnings management. They use a different approach than past earnings management investigations in that they look at a specific accrual, the provision for bad debts, rather than an aggregate of accruals. According to McNichols and Wilson (1988), using this provision is just one of the various strategies to control revenues.

After 1988, scholars have increasingly viewed the topic of earnings management from the perspective of incentives for such conduct. According to Watts and Zimmerman (1986), managers in organizations with earnings-based pay covenants have the incentive to falsify earnings to maximize their reward by adopting income-increasing accounting procedures. DeAngelo (1986) assumes in the same year that managers of corporations going private would have incentives to understate reported revenue to lower buyout pay, but the study fails to discover support for these assumptions (Callao, Jarne & Wroblewski, 2014). Schipper (1989) also found that there is an influence of knowledge asymmetry between firm management and firm shareholders on manipulation. The atmosphere around earnings management shows a gap between analytical models and empirical earnings management testing (Richardson, 2000),

The Jones (1991), research is maybe one of the most important studies on earnings management. The study assessed the breadth of earnings management using

discretionary accruals. Previous research utilized total accruals as a proxy, thus this is a new, far more exact technique. The researcher divides total accruals into two categories: discretionary and non-discretionary (Callao *et al.*, 2014).

Financial statement users may also see earnings quality in terms of the 'absence of earnings management'. This is because the intentional manipulation of earnings by CEOs, within the limits probable in accounting standards, may falsify the usefulness of earnings to users. Earnings that are persistent and predictable may not be of high quality if it is a result of earnings management. CEOs may tend to manage earnings for a number of motives including those related to capital market motivations, compensation, and bonus as well as debt or lending contracts, which will result in low-quality of earnings (Kamarudin & Ismail 2014).

The methodology used in the investigations that follow is based on Jones' (1991), with the authors investigating incentives for earnings management. DeAngelo and Skinner (1992) discover that highly leveraged problematic enterprises have huge negative accruals as a result of renegotiating their loan obligations. Defond and Jiambalvo (1994) investigate anomalous accruals and show that in the year preceding the violation, models imply that violating businesses have abnormal total and working capital accruals that are considerably positive. This is in contrast to most research, which favor debt covenants based on leverage as a proxy for the presence and tightness of accounting-based covenants (Kamarudin & Ismail 2014).

Earnings quality is an indicator of financial reporting quality (Menicucci, 2019). The earnings quality consists of a discretionary and a non-discretionary portion (Francis *et al.*, 2004). The discretionary element is grounded on the process of financial reporting, while, in contrast, the non-discretionary component is determined by the

environment and business model. High-quality earnings in a firm can specify the current operating performance or the firm's value. Therefore, high-quality earnings are frequently denoted as sustainable earnings while low-quality earnings occur when the earnings are managed. Managed earnings are the effect of management's deliberate interference in the financial reporting process in order to achieve any personal benefits (Schipper, 1989).

Bellovary & Don (2005), consider quality of earnings to comprise the underlying economic performance of a company, as well as the accounting standards that report on that underlying phenomenon; others consider the quality of earnings to refer only to how well accounting earnings express information about the underlying phenomenon. It is the extent to which net income reported on the statement of profit or loss differs from true earnings.

The Jones model (1991), is still one of the most prominent accruals estimating methods in earnings management, with the assumption that non-discretionary accruals are constant. But Dechow et al. (1995) and Kothari *et al.*, (2005) argue that the Jones model is misspecified for companies that exhibit exceptional performance. Kothari *et al.*, (2005) assess the design and effectiveness of tests based on performance-matched discretionary accruals to tests based on traditional discretionary accrual measures like the Jones and modified-Jones models. They hope to enhance the Jones model (1991), saying that performance metrics are significant because of the inherent velocity in economic operations and business profitability. According to Kothari *et al.*, (2005), studies that do not employ performance-adjusted discretionary accruals "are likely to make generalizations that are erroneous at most and inaccurate at worst." This study adopts the Kothari model of incorporating performance in the measure of earnings quality to control for variations in accruals resulting from

changes in business conditions and also the addition of an intercept reduces heteroscedasticity problems and misspecified issues (Chang & Sun 2010).

2.1.2 CEO power

Salancik and Pfeffer (1977) defined power as the right or ability to command or control people, objects, or their actions. When it comes to corporate boardroom power, Halebian and Finkelstein (1993) defined CEO Power as the CEO's ability to overcome opposition and consistently influence crucial decisions within a company. Powerful CEOs, according to Adams, Almeida, and Ferreira (2005), are executives who can consistently influence crucial choices in their companies despite possible opposition from other executives. The two definitions above are limited to solely the manager's internal forces. CEO power, on the other hand, may be measured by their capacity to deal with both internal and external influences (Finkelstein, & Hambrick, 1989). Power, according to Finkelstein (1992), is the ability to deal with internal and external sources of uncertainty. A powerful CEO has a great deal of authority and influence over the company's entire management and operations (Baldenius, Melumad, & Meng, 2014).

Many scholars contend that power motivates CEOs to perform at their best because they may suppress board control, which has frequently been shown to be a roadblock to taking rapid action needed to improve performance (Finkelstein & Hambrick, 1996; Gavin & College, 2014). CEOs are the most powerful members of a company because they have control over performance and exert authority (Altarawneh, Shafie, & Ishak 2020) over corporate decisions such as financial disclosures and guaranteeing the quality of earnings presented (Chou and Chan 2018, Yan-Yu & Min-Yee, 2017, Alhmood, *et al.*, 2020, Bouaziz, & Jarboui, 2020). Previous research (Bouaziz, Salhi, & Jarboui, 2020; Zhang & Wiersema, 2009) has demonstrated the importance of

managers/CEOs who can avoid disclosing errors/mistakes in financial statements and so protect the interests of shareholders.

The existing literature on CEO power regard CEO founder as a major power predictor in any corporate setting (Abebe & Alvarado, 2013; Adams *et al.*, 2005; Bahloul, Hachicha, & Bouri, 2013), and many others have described CEO-chairman duality as a strong source of director power (Abebe & Alvarado, 2013; Adams *et al.*, 2005; Bahloul, Hachicha (Bahloul *et al.*, 2013; Nicholson & Kiel, 2007; Victoravich, Xu, Buslepp, & Grove, 2011; Wu, Quan, & Xu, 2011a). Likewise, a CEO also gains powers relative to the corporate board if the CEO possesses a significant portion of ownership and a high position as this helps him/her in reducing board influence in certain decisions makings (Ding *et al.*, 2018; Srinidhi *et al.*, 2011). That the more years the CEO is in the firm, the more expertise he acquires and the more power to control the top decisions. Additionally, a CEO can also acquire powers through political connections as he can derive substantial assistance from his political connections. These benefits may include superior access to financing, special dealing in the award of state contracts and greater probability of state bailout during predicaments.

However, Finkelstein (1992), articulated the many types of power to provide a limited but comprehensive view of the various aspects of executive power. By establishing four types of powers important to top management. Much research, on the other hand, has attempted to improve the viewpoint, frameworks, and measurement of power at the highest management level. Though Finkelstein's four dimensions (structural powers, Ownership power, Expertise power, and prestige powers) of power are well-known, Fetscherin (2015) presented a more sophisticated explanation of the four Ps (performance, personality, prestige, and persona) of power, and Busenbark, Krause,

Boivie, and Graffin produced a configurational viewpoint of power (2016). Finkelstein's proposed power dimensions were confirmed and tested (Daily & Johnson, 1997).

While several studies have looked at the impact of CEO power on earnings quality, few have looked at the impact of all power dimensions on integrated reporting and earnings quality. The study considered the three CEO power dimensions as used by Han *et al.*, (2016) and Tang *et al.*, (2011); structural power, ownership power, and expert power as the source from which the CEO acquire power over the firm decisions regarding integrated reporting and earning quality.

2.1.2.1 CEO Structural Power

Structural power also referred to as hierarchical or legitimate power (Astley & Sachdeva, 1984; Hambrick, 1981), denotes power as a result of a position or office(s). It is the company's hierarchical rank. It has to do with an organization's formal office arrangement. According to Finkelstein (1992), the structural power of a CEO is determined by his or her title, pay, and the number of managers with higher authority. An increase in CEO structural power, as measured by CEO titles, board composition, and CEO relative pay, shows that the CEO's capacity to make investment decisions and manage corporate resources with less board resistance has increased. Higher degrees of CEO structural authority, according to the agency theory, promote managerial entrenchment and increase the CEO's potential to overinvest in integrated reporting (Sheikh, 2019).

Structural power is the most prevalent sort of power in an organization, and it is regulated by the internal organization's pyramid model. CEOs have the power to influence other employees of organizational hierarchies since they hold the highest

positions Hambrick, & Finkelstein, 1995). By directing the behavior of subordinates and managing corporate resources, CEOs can cope with unpredictability (Wang, Tsui, & Xin 2011). Management roles inside the organization are used to achieve structural influence through their position which is the first source of structural power (Daily, & Johnson, 1997).

Furthermore, the CEO's influence is strengthened by the addition of being the Chair of the Board of Directors and President of the Company, though in this study, duality was not applicable since the research is looking at listed firms in East Africa and not family-owned corporations. The board of directors' makeup, likewise, reveals organizational hierarchy and a source of structural authority. CEOs have more control over investment decisions when boards are less independent (Fama & Jensen, 1983). Finally, CEO pay reflects the CEO's relative authority inside the firm, since powerful CEOs may command bigger pay packages than their counterparts. Indirectly, board power is linked to relative remuneration (Finkelstein, 1992).

In accounting and management studies, CEO duality is commonly utilized as a variable of CEO structural power (Adams, Almeida, & Ferreira 2005; Boyd *et al.*, 2011; Daily, Johnson, & Dalton, 1999; Finkelstein, 1992; Wu Quan, & Xu 2011). Activist shareholders, institutional investors, proxy advisory firms, and regulators have been at the forefront of the topic of separating the chair and CEO responsibilities since the financial crisis, with the goal of attaining independent leadership on the board. Separation of the chair and CEO responsibilities is frequently advocated in academic papers and practitioner-oriented literature, as well as in many best practice standards and guidelines. The separation of the chair and CEO duties, according to the most prevalent rationale based on agency theory, strengthens the board's independence from management and consequently leads to greater monitoring and

oversight. Because the CEO runs the firm and the chair leads the board in overseeing (hiring, rewarding, and removing the CEO as needed) the CEO on behalf of shareholders, proponents of this perspective see a conflict of interest if the CEO and chair are the same person (Tonello, 2011). The study adopted the CEO Pay Slice (CEOPS), CEO Pay Slice gap (CEOPS gap), and board independence as proxies for measuring structural power as used in previous studies (Sheikh 2019; Bebchuk *et al.*, 2011; Chen *et al.*, 2013; Jiraporn and Chintrakarn, 2013; Chintrakarn *et al.*, 2014; Lee *et al.*, 2015).

CEO Pay: CEO pay also reflects the CEO's position of authority inside the company, as powerful CEOs can command bigger pay packages than their counterparts. Indirectly, relative salary is linked to board power (Finkelstein, 1992).

Board independence: CEOs have more influence over investment decisions when boards are less independent (Fama & Jensen, 1983).

2.1.2.2 CEO Ownership Power

CEO ownership power is the proportion of ordinary shares held by CEOs in the company. The extent of CEOs' shareholdings can reduce agency costs as it serves to align the interests of CEOs with those of shareholders (Jensen & Meckling, 1976). Agency theory asserts that there is a positive association between the CEO's interests and the level of integrated reporting. Warfield *et al.*, (1995) provide evidence supporting this contention in their findings that the extent of shareholding by CEOs is positively associated with the amount of information disclosed about earnings quality (Jensen & Meckling, 1976).

In both theory and practice, ownership is considered a source of power (Finkelstein, 1992; Onali, Galiakhmetova, Molyneux, & Torluccio, 2016; Wu *et al.*, 2011). The

ownership of the corporation is a fundamental driver of the agent-principal relationship in agency theory. Unlike in an agency relationship, a CEO who owns a significant percentage of a company's stock is both an agent and a principal officer, giving him a strong position to influence practically every aspect of the company's operations (Mio, Fasan & Ros, 2016).

CEO managerial power accrues to CEOs in their capacity as agents because they act on behalf of shareholders (Hashmi, Brahmana, & Lau 2018; Baek & Kim, 2015; Jiang & Anandarajan, 2009; Ding, Zhang, & Zhang, 2007). El-Bannany, 2018; Hoang Abeysekera, & Ma 2017; Garca-Meca & Sánchez-Ballesta, 2009;) found that when a CEO has significant ownership control, then, the CEO has more power over the company's affairs and with this increased influence, a CEO is better able to enforce the issue of personal authenticity (Godfrey *et al.*, 2003; Wells, 2002). When the CEO owns a considerable amount of stock, this influence the appointment of other directors, giving the CEO an advantage over other board members (Saidu, (2019), With substantial ownership, the CEOs have a say in deciding their salary, stifling their dismissal if necessary, and dominating most of the Board decisions (Zhang, Tang, & Lin, 2016), as a result, minority shareholders' rights appear to be less safeguarded (Baker *et al.*, 2019). Hence, a CEO with more influence becomes more rooted within the company (Latif, 2018).

Another key source of CEO power in terms of ownership is when the company's founder or the family of the founder also serves as CEO (Saidu, 2019). The CEO with the position of founder or a family of the founder has been recognized to have a lot of power in the firm (Daily *et al.*, 1999). Since the study will be focused on listed companies in East Africa, the study will not be looking at ownership power from these angles.

2.1.2.3 CEO Expert power

CEO expert power is the ability to cope with environmental dependency (Finkelstein, 1992). It is a unique skill that develops through time as a result of learned knowledge or cognitive job experience (Wu *et al.*, 2011). Managers with the proper functional skills are best suited to cope with environmental needs and are well-positioned to handle significant situations (Hambrick, 1981). CEOs who have experience and exposure from a variety of functional backgrounds are more likely to wield power as a result of developing contacts both inside and outside the company (Daily & Johnson, 1997). Therefore the expertise power will be looked at in this study from the perspective of financial expertise and tenure. That the more the CEO stays in the firm, the more expertise/experience he/she acquires and hence more power to influence the decisions of the firm regarding integrated reporting and earnings quality.

2.1.2.3.1 CEO financial expertise

A CEO's financial expertise is crucial in evaluating the dependability of reported earnings. (Gounopoulos & Pham 2018) asserts that CEOs are likely to learn more about financial and accounting issues from their financial skills and experience in their arenas, make reasonable accounting decisions, and enrich the financial reporting structure. CEOs with financial expertise are aware of the value and kind of accounting information investors need from the financial statements (Custódio & Metzger 2014; Gounopoulos & Pham 2018).

CEO's financial expertise and opinions can affect organizational decisions. The amount and form of work expertise influence the CEO's cognitive structure, strategic choices, and decision-making procedures (Papadakis & Barwise, 2002). Managers with excellent skills have more communal resources and efficient learning abilities in addition to a vigorous selection of analytical skills (He *et al.*, 2015). Therefore, they

may engage in a financial report using their professional judgement or the design of actual transactions to modify accounting financial information (Bouaziz, Salhi & Jarboui 2020). Companies whose CEOs came from a financial background had low accountability (Hu *et al.*, 2017).

2.1.2.3.2 CEO Tenure

CEO tenure is defined as the number of years a CEO has been in the role since being appointed (Navarro & Anso'n, 2009). The power of a CEO is influenced by the CEO's tenure (Shen, 2003). The CEOs may increase their power once they hold the CEO position for a long period of time (Pfeffer, 1981). As a result, CEO power grows as time passes (Hambrick & Fukutomi, 1991; Miller, 1991). The longer CEOs hold the position of CEO, the more influence they obtain. Longer-serving CEOs should have more sway over the board's decision-making process (Tien, Chen, & Chuang 2013). According to empirical evidence, CEOs gain authority mostly through their current position's term. Newly appointed CEOs are likely to face significant challenges and obstacles that they have never encountered before. To keep their job and maintain their influence, they must first gain approval from their board (Francis, Huang, Rajgopal & Zang, 2008; Santanu, Hakjoon, Lee, & Kwon, 2020); Wells, 2002). As a result, until they meet their board's expectations, their power will be far less than that of a well-established CEO (Baker *et al.*, 2019). When the board approves the CEO, their managerial ability and discretion increase (Stock, Groß & Xin, 2019).

Hambrick, (2007), and Hambrick & Mason (1984) proposed that the tenure of the CEO could have a significant effect on the types of decisions made by the CEO or the top management team. Most studies have provided evidence for companies to have a top management team that is long-tenured because it is associated with team

familiarity and the consistency of the firm's core business activities (Michel, & Hambrick, 1992; Smith *et al.*, 1994). The concept of a CEO tenure is among the most studied CEO power in the upper echelons theory research (Besar *et al.*, 2017; Cannella *et al.*, 2009; Finkelstein & Hambrick 1990). CEO tenure implies a long stay in the company and acquisitions of more knowledge and experience which leads to high-quality reporting.

A tenured CEO accrues adequate knowledge and experience in business with years of service and hence more likely boosts firm performances through effective management and obtains premium pay (Wang *et al.*, 2016, Falato *et al.*, 2015). Cornett *et al.*, (2008) further suggest that such an increase in firm performance may reduce the usage of discretionary accruals. This is consistent with the finding of Ali & Zhang 2015 and Kuang *et al.*, (2014), who discovered a lower level of earnings management in the later years than in the early years of the CEO's service. Although Dechow, *et al.*, (1991) investigated the possibility of older CEO in their final year of service being likely prone to manage the reported earnings.

2.1.3 Institutional Ownership

According to Sari *et al.*, (2020), institutional ownership is the share owned by external institutions. Institutional investors frequently own the majority of the stock. This is because institutional investors have more sources than other shareholders and are therefore thought to be capable of handling a proper monitoring mechanism. Institutional ownership is also thought to be capable of lowering agency costs by enabling monitoring through institutional investors, according to Sari *et al.*, (2020). This is due to the fact that institutional ownership is a resource that can be used to support or oppose the manager's policies, and they are an effective monitoring mechanism in every decision made by the manager because they are involved in

strategic decision-making in a company (Jensen & Meckling, 1976; Sari *et al.*, 2020). Institutional ownership refers to ownership by parties such as foundations, banks, insurance companies, investment firms, pension funds, limited liability corporations, and other organizations. Because it has more resources than other stockholders, an institution is usually able to control the majority of stocks. Because it owns the bulk of the stock, the institutional party can keep a closer eye on management policies than other stockholders (Nurleni & Bandang, 2018). Institutional investors, according to Tan and Keeper (2008), play a significant role in corporate governance by actively supervising their investments and providing protection against CEOs' intentions to lower stockholder value. One strategy to lower agency costs, according to Jensen and Meckling (1976), is to increase institutional ownership to supervise the CEOs. In other words, it would promote the best possible control of CEO performance. It demonstrates that as the degree of institutional ownership increases, CEO power decreases (Suranta & Machfoedz, 2003).

Institutional ownership serves as a watchdog for the company (Nurleni & Bandang 2018). The ability to supervise CEO management is demonstrated by a corporation with substantial institutional ownership (greater than 5%). The larger the institutional ownership, the more efficiently the company's assets are utilized, and it is also believed to function as a barrier to the CEOs' extravagance (Arif, 2006). It implies that institutional ownership can be a driving force in ensuring integrated reporting as noted by Raimo, Vitolla, Marrone & Rubino (2020) and Nengzih (2019), that there is a positive relationship between institutional ownership and integrated reporting quality and this leads into earnings quality (Nurleni & Bandang 2018).

2.1.4 Integrated Reporting

The International Integrated Reporting Committee (IIRC,2013), defined integrated reporting as “an explicit communication on a firm’s strategy, governance, performance and prospects that lead to the creation of value over the short, medium and long-term and reflects the commercial, social and environmental context within which it operates”.Integrated reporting seeks to provide more information on how the company is performing and show how the firm obtains and uses its resources, and identify the link between the firm’s resources and other forms of capital (Cardamone, Carnevale & Giunta, 2012). The Institute of Directors in South Africa formed the King Committee to promote the highest standards of corporate governance. As a result, South Africa was the first government to propose integrated reporting standards when it issued the King Report on Corporate Governance, often known as King III (Institute of Directors Southern Africa, 2009). In Europe, the International Integrated Reporting Council (IIRC) was formed in 2010 to create a framework for integrated reporting and encourage its implementation. The IIRC framework includes major stakeholders such as financial accounting standard setters, firms, institutional investors, providers of voluntary guidelines for corporate responsibility disclosures, professional accounting bodies, and non-governmental organizations (Nwachukwu 2021; International Integrated Reporting Council, 2011; Kiliç & Kuzey, 2018; Vaz, Fernandez-Feijoo & Ruiz 2016).

Integrated reporting is a process founded on integrated thinking, which results in a periodic and concise report about how an organization’s strategy, governance, performance, and prospects, in the context of its external environment, lead to the creation of value over the short, medium, and long term. Integrated thinking involves identifying, executing, and monitoring business decisions and strategies for long-term

value creation (Busco, Granà, & Achilli 2020; Dumay & Dai 2017; Guthrie, Manes-Rossi, & Orelli 2017). The key objective of integrated reporting is to enhance accountability and stewardship (Busco, Frigo, Riccaboni & Quattrone, 2013).

Research has demonstrated that embracing integrated reporting improves earnings quality and firm value (Samy 2019; Cosma, Soana, & Venturelli, 2018; Barth, Cahan, Chen & Venter 2017; Mervelskemper & Streit 2016; Utomo, Machmuddah, Hapsari, 2021). According to Obeng *et al.*, (2020), integrated reporting improves the quality of accounting information. According to Lee & Yeo (2015), companies that publish integrated reporting reap larger benefits than expenses, and integrated reporting minimizes information asymmetry between insiders and external investors. According to Cosma *et al.*, (2018), the stock market responds positively to award announcements for non-financial firms with high-quality integrated reporting. The studies promote investment in increasing the quality of integrated reporting. However, the findings of; Nurkumalasari, Restuningdiah & Sidharta (2019); Suttipun (2017), and Churet & Eccles (2014), suggested that integrated reporting had little effect on firm value, meaning that stakeholders do not require integrated reporting.

Previous studies have mainly focused on integrated reporting and its adoption within organizations (De Villiers & Sharma 2020; Barth, Cahan, Chen, & Venter 2017; Serafeim 2015; Adams, 2015; Churet and Eccles, 2014) the literature on integrated thinking is in its infancy. This emerging literature investigates how integrated reporting mediates CEO power and earning quality.

2.2 Theoretical Review

This section reviews relevant theories that explain the interrelationships between CEO power, institutional ownership, integrated reporting, and earnings quality for all firms

listed in East Africa Securities Exchange. A theory is a general proposition, or logically-connected system of general propositions, which establishes a relationship between two or more variables (Abend 2008). The study adopted several theories:

2.2.1 Upper Echelons Theory

"In a competitive economy, the quality and performance of the managers, above all, define the success of a corporation; indeed, they determine its survival" (Drucker 1954). The importance of management is highlighted in Hambrick and Mason's (1984) upper Echelon theory, in which organizational outcomes, strategic formulation, and performance levels are connected with executives' background traits, specifically their explicit knowledge, experience, values, and preferences (Sewpersadh, 2019).

Upper Echelon's theory is the idea that top executives view their situations via their own highly customized lenses, as expressed explicitly by Hambrick, Donald, and Mason (1984). Because of the disparities in executive experiences, values, personalities, and other human characteristics, these customized interpretations of strategic circumstances emerge. Researchers have looked at the effects of Top Management Team (TMT) composition and practices on organizational outcomes, as well as the influences of CEO traits on corporate strategy and performance, from the perspective of the upper echelons. There are three advantages of the theory; Scholars may be able to anticipate organizational outcomes with far more accuracy than existing ideas enable.

The Upper Echelon's theory attracts a lot of attention. The central idea of this theory is that the organization is a reflection of its principal CEOs (Hambrick & Mason, 1984). The theory recognizes that the CEO's characteristics affect their strategic

choices. In fact, the Upper Echelon theory assumes that CEOs by their personal characteristics and their specific skills can influence firm's value creation, strategic choices, and financial reporting decisions of companies (Hambrick & Mason, 1984). The study can therefore adopt that CEO power has a great influence on integrated reporting and earnings quality because they affect the accounting results of the firm (Hambrick 2007; Hambrick and Mason, 1984). (Hambrick 2007) stated that: "If we want to understand why firms do the things they do, or why they perform the way they do, we must consider the biases and characters of their most powerful actors, their top executives" Thus the study was focused on understanding why CEOs report earnings in the manner they do, as in; if they are influenced by the powers they hold: expert power;- the number of years they have worked in the firm, or is it because of the financial expertise acquired, structural power;- does the pay they receive influence them or the board independence controls their power? ownership;- does the number of shareholdings influence them? This has been studied by other scholars in other parts of the world (Kwarbai 2019; Egbunike, & Odum, 2018; Yan-Yu & Min-Yee, 2017; Bouaziz *et al.*, 2020) or how the CEO power influences integrated reporting among Listed firms in East Africa.

2.2.2 Agency Theory

The agency theory was introduced by Berle and Means (1932), who reasoned that management "may better serve their own interests by benefiting at the cost of the firm than by profiting for it." As a result, considerable agency issues are common as a result of owners/investors having minimal control over the firm's operational activities, leading to management opportunism (Sewpersadh 2019; Jensen and Meckling 1976). When the interests of the principal and the manager are not flawlessly aligned, managerial opportunistic behavior poses a risk because the

manager can utilize informational advantage to make decisions that are not in the principal's best interests (Acemoglu et al., 2007). According to agency theory, prominent CEOs may be motivated to take advantage of information asymmetry and use their influence on the board to enhance their own wealth at the expense of shareholders' utility (Jensen, 1986).

Agency theory suggests that asymmetry of information incites managers to make the decisions necessary to improve their situation and maximize their usefulness, to the detriment of other stakeholders (Bouaziz *et al.*, 2020). Agency theory is defined by Jensen and Meckling (1976) as a contract in which one or more people engage another person to perform some services on their behalf which involves delegating some decision-making authority to the agent. This theory shows that CEOs are likely to manipulate earnings. These manipulations are very beneficial for the CEOs and allow them to improve their situation, to the detriment of other stakeholders.

The agency theory defines the different possible control mechanisms and incentives (Bouaziz *et al.*, 2020). The overall objective is to align the interests of CEOs and shareholders and to mitigate the asymmetry of information between the two stakeholders in order to achieve high earnings quality through effective and efficient management of financial reports. The agency theory suggests that the interests of the principal and the agent might not be aligned as both of them try to take full advantage of their individual interests by all means (Menicucci & Paolucci 2018). Information asymmetry is one of the main factors in inventing agency problems as CEOs can access more information than shareholders (Bhattacharya, Desai, & Venkataraman 2013; Brown and Hillegeist, 2007 and Brown & Hillegeist 2003).

When a CEO has entire decision-making authority, he or she can utilize that power to benefit personally, for as through increasing rates of perquisite consumption and/or 'rigged' payoffs under compensation arrangements, reducing shareholder wealth (Morse *et al.*, 2011). Management pursuing their own interests or performing their tasks incompetently are intended to be reduced by governance measures such as the presence of independent directors (board vigilance) exercising their fiduciary obligation of monitoring and controlling (Sewpersadh 2019).

The agency theory postulates that companies emphasize disclosure in order to reduce conflicts between CEOs and shareholders when financial statements are insufficient to diminish the agency problem. Healy & Palepu (2001) and Botosan & Plumlee (2002) argued that it is possible that CEOs can decrease agency costs by disclosing extra (not mandated- integrated reporting) information since outside investors have less information on the firm's performance than CEOs. Lundholm and Winkle (2006) stated that integrated reporting can be used to lessen information asymmetry problems and agency costs (Watson *et al.*, 2002; Barako *et al.*, 2006).

The agency theory explains why the CEO is so willing to ensure that the company prepares integrated reporting (Hossain, Perera, Rahman, 1995; Cooke, 1989 & 1992; Chow & Wong-Boren 1987). The lessening of information asymmetry and the related costs can be considered a significant driver for companies to disclose financial and non-financial information. In this regard, integrated reporting is importantly demanded by shareholders and investors for the decision-making process though it is not mandatorily demanded by accounting standards and rules. It is believed that integrated reporting diminishes information asymmetry between the principal and the agent, eliminating related agency problems and costs consequently.

2.2.3 Signaling Theory

Signaling theory regards problems related to information asymmetry (Spence 2002). It proposes that information asymmetry should be reduced in any social setting if the party owning more information sends signals to the other interest-related party (Machmuddah & Hapsari 2021; Dainelli, Francesco, Laura Bini, and Francesco Giunta 2013; Connelly, Certo, Ireland, & Reutzel 2011). Signaling theory is applied to clarify voluntary disclosure in corporate reporting (Ross, 1977), even though it was initially developed to explain the information asymmetry in the labor market (Spence, 1973). Due to the information asymmetry issue, companies signal particular information to attract investments in the market and to enhance a positive reputation (Verrecchia, 1983).

A signal is a noticeable act that is utilized to show the hidden characteristics of the signaller (Salama *et al.*, 2010). On the other hand, signaling would help stakeholders (especially investors) to better check the value of the company and then to make more favorable decisions (Whiting & Miller, 2008). This clarifies why companies are stimulated to disclose voluntarily more information than the mandatory ones required by laws and regulations (Campbell *et al.*, 2001), that is to appear positive in the market (Spence, 1973; Connelly *et al.*, 2011).

Firms have several means to signal information about their performance. In this regard, corporate disclosure can be a signal to capital markets as CEOs can use integrated reporting for attracting new investment and enhancing earnings quality (Watts & Zimmerman, 1978; Ross, 1979; Campbell, 2000; Watson *et al.*, 2002; Xiao *et al.*, 2004). Manipulation of earnings occurs less often in corporation with integrated reporting (Menicucci & Paolucci, 2018). Kim *et al.*, (2012), found that firms that present integrated reporting are less likely to engage in aggressive earnings

manipulation through discretionary accruals, to manipulate operating activities, and to be the subject of Securities and Exchange Commission (SEC) investigations.

Studies by Ferrell *et al.*, (2016), as well as Gras-Gil *et al.*, (2016), have provided evidence that corporate managers (CEOs for this case) can use integrated reporting as a tool with which to achieve a broader group of stakeholders' goals among them enhancing earnings quality. Gao and Zhang (2015) find that firms with integrated reporting are more ethical in their reporting behaviors with less accounting manipulation.

2.4.4 Integration of Theories in explaining earnings quality

The primary concept of upper Echelon's theory is that executives' experiences, values, explicit knowledge, and personalities have a significant impact on how they understand events and, as a result, how they make decisions regarding earnings quality and integrated reporting. Upper echelons theory relates the variables of CEO power and; earnings quality & integrated reporting. The theory gives justification for the quality of earnings reported by CEOs and the level of disclosure of financial and non-financial information by the said CEOs. Their structural, ownership, and expert power influence them to either ensure that the quality of earnings is high or not and whether the company produces integrated reporting. Upper echelons theory does not bring out the aspect of the CEO (an agent) working for the shareholders (principal) since the CEO and the shareholders are in an agency-principal relationship. Therefore the agency theory was introduced in the study to explain that aspect.

The most essential idea regarding earnings quality and integrated reporting is information asymmetry, which is the basic concept of agency theory. CEOs have more information on a company's future success than shareholders in a well-organized

capital market. As a result, unless both parties entirely share the same interests, the agency problem will arise. In this sense, integrated reporting is a tool for mediating that connection between CEOs and shareholders by assuring complete disclosure and avoiding information asymmetry, resulting in high-quality reports to stakeholders. Therefore the agency theory connects the CEO power to integrated reporting and finally to earnings quality. The agency theory does not explain the motivation of the CEO to disclose more information than expected, hence the introduction of signaling theory to justify the actions of the CEO providing integrated reporting.

According to signaling theory, there are a few viable solutions to the information asymmetry problem, namely, CEOs can use integrated reporting as a signal to positively report the firm's results. The use of integrated reporting as a signal, in particular, could entice potential investors, reduce stock volatility, lower capital costs, improve corporate image, provide a better understanding of future performance, and advance relationships with numerous stakeholders, resulting in high-quality reports. As a result, the study contends that integrated reporting can reduce information asymmetry between a company and its stakeholders from the standpoint of stakeholders and this could lead to quality earnings.

2.5 Empirical Review

This section gives a detailed summary of previously published works on the subject matter with emphasis on the context, measurement of variables, and the findings as below:

2.5.1 CEO Power and Earnings Quality

A firm's CEO has the authority to access all relevant information regarding the firm's operations and activities. This dominance of information improves the CEO's power

to control earnings. Previous studies have presented three types of incentives where CEOs may have to exercise their discretion over reported earnings. The first is capital market incentives, where managers have an incentive to alter their reported earnings to meet analysts' forecasts or to maintain performance by increasing report earnings or reversing a decrease in earnings (Gunny, 2010). Second is regulatory and tax incentives, where CEOs may adjust earnings to avoid the costs associated with governmental regulations (Chen & Zhang, 2014). The third type of incentive pertaining to earnings manipulation is contractual incentives, where CEOs may manipulate earnings to maximize their own compensation (Ali & Zhang, 2015).

Previous research has looked at CEO power as the main determinant of earnings quality (Sandra Alves 2021, Shin-Rong Shiah-Hou 2021, Mohammed, & Kurawa, (2021); Duong, *et al.*, (2020); Bouaziz, and Jarboui, (2020); Egbunike, & Odum, (2018); Peni (2010); Kouaib, & Jarboui, (2016); Altarawneh, Shafie & Ishak 2020), that is; ownership, educational level, tenure, expertise, structural, compensation, duality, political connection but this study will follow the study of (Daily & Johnson (1997) by using the four dimensions of CEO power and its effect on earnings quality.

2.5.2 CEO Structural Power and Earnings Quality

According to Core *et al.*, (1999), when the board of directors is large and primarily made up of external directors nominated by the CEO, the CEO's salary is always higher, but their performance may be lower. Executive remuneration does not reduce the company's agency expenses, according to Yuhui and Shinong (2010), although there is a clear positive association with the company's agency costs. This suggests that high CEO's salary has little effect on incentives, but only on management self-interest behavior performance that will affect the quality of earnings that will be reported (Zhang, Tang & Lin 2016).

Cash bonuses, which are part of CEO compensation, are based on accounting rather than market performance indicators (Matolcsy, 2000). Accounting performance, it is further said, is vulnerable to manipulation due to accounting standards' flexibility, necessitating both monitoring and oversight. According to agency theory, CEOs may be motivated by self-interest to manipulate earnings in order to influence their pay. The structural power may be able to exert control over the company's board of directors, and hence the executive's behavior. The rise of organized shareholder activism, as well as many institutional investors, may act as watchdogs over executives. These organizations constitute a critical constituency that can sway shareholder decisions on matters such as executive pay. This is due to the fact that wealthy shareholders have a strong motivation to maximize the company's wealth and safeguard their own interests (Assenso-Okofu, Ali & Ahmed 2021). This practice is frequently supported by industry regulators all over the world to maintain track of CEO behavior, including compensation (Sarbanes-Oxley Act, 2002).

Management's inclination to participate in earnings management to impact compensation is suggested by the agency and positive accounting theories (Becht, Bolton, & Röell 2003). Existing empirical and theoretical literature identify and demonstrate that earnings management is a significant element in excessive pay (Klein, 2002). Yayangida, Samuel, Okpanachi, & Atabo, (2020), results indicate that organizations that pay more emoluments to their executives are more likely to have fewer earnings manipulations. The majority of CEO compensation schemes are based on their initial earnings rather than their actual accomplishments (Kumar & Singh, 2013). As a result, it encourages management to engage in deceptive actions that benefit CEOs on the one hand while harming shareholders' interests on the other. Most research found a high association between aggressive accounting behavior and

executive compensation, except for a few studies, such as Assenso-Okofu, Ali, & Ahmed (2021), which found no indication of a relationship between compensation plan and earnings management.

Additionally, according to Chatterjee and Hambrick (2007), CEOs have the authority and power to set their own salary in comparison to other executives in their companies. Although the board has the authority to recruit and remove executives, a CEO with more structural power may jeopardize the directors' influence. This is because they believe they are better than others, so it's not unexpected that they want higher pay than other employees. Grinstein and Hribar (2004) found that CEOs can exploit their power to influence board decisions in order to collect exorbitant incentives. Coakley and Iliopoulou (2006), later discovered that CEOs receive higher bonuses and salaries when their boards are less independent. The concept of incentive-based remuneration was born out of a desire to motivate CEOs to perform in their shareholders' best interests. This incentive-based compensation, on the other hand, motivates CEOs to exercise discretion in accounting techniques to maximize their own benefit. There is substantial evidence that CEOs deliberately use accounting discretion to opportunistically manipulate reported earnings (Badertscher, Katz & Rego, 2010). The rationale for such manipulation is to boost CEO's pay (Eckles & Halek, 2007).

Independent outside directors who predominate on boards are supposed to assist shield shareholders from the self-serving behavior of CEOs by keeping an eye on them and providing incentives for them to operate in the best interests of shareholders (Fama and Jensen, 1983). Independent board members are better able to carry out their governance duties since they are less subject to the CEO's influence. Independent directors are anticipated to resist management pressure better (Alves,

2021). Due to their independence from the CEO and lack of dependence on him, independent board members are more likely to intervene when management decisions endanger the interests of the company's shareholders. Since their capacity to inflict expenses on them decreases with independence, independent boards are more inclined to supervise the CEO. Therefore, companies with more independent board members ought to provide higher-quality earnings.

When earnings quality is low, independent directors who are worried about their reputation in the job market are more inclined to challenge the powerful CEO than insider directors who might be depending on the CEO for their employment prospects (Alves, 2021; Fama & Jensen, 1983). When financial reporting issues are made public, independent directors could sustain significant damages (Carcello, Hermanson, Neal & Riley, 2002). Empirical data demonstrate that board independence provides more effective oversight and raises the quality of earnings (Alves, 2021; Alves, 2014; Al Azeez, Sukoharsono, & Andayani, 2019; Chi, Hung, & Liu, 2020; Chen, Cheng, & Wang, 2015; Mbir, Agyemang, Tackie, & Abeka, 2020). This implies that the board's role in overseeing the CEO is greater in companies with more independent directors than it is in those with fewer independent directors. Consequently, boards with independent directors are likely to demand greater earnings quality to counteract potential agency issues and shield shareholders' reputations from the CEO's abuse of authority.

2.5.3 CEO Ownership Power and Earnings Quality

One of the most critical things that can affect a CEO's capacity to alter their company's reported earnings is their ownership. This shows that when CEOs' shareholdings get larger, the motivation for them to engage in accounting scandals grows as well (Sharma & Kuang, 2014). As a result, increasing managerial ownership

may incentivize managers to employ discretionary accruals to boost profits. As a result, the value of their stocks is maximized, especially in the near term (Qawasmeh & Azzam, 2020).

As CEOs frequently engage in measures to safeguard their job, this could lead to earnings manipulation (Ding Zhang, & Zhang 2007; Yassin *et al.*, 2010). Earnings management can also be used by a CEO to smooth out earnings volatility and portray more constant profits. CEOs may feel compelled to distort the company's accounting methods to accomplish financial targets and maintain the stock price. The executive power acquired by bigger equity stakes has been shown to increase the likelihood of making self-centered decisions (Chatterjee & Hambrick, 2010b), and may have established unique impacts. As a result, the study assumes that CEOs with significant ownership are more likely to be involved in earnings management, which leads to low-quality of earnings but also the powers to ensure that the firm prepares and presents integrated reporting.

Several earlier research, including those by Al-Fayoumi, Abuzayed, and Alexander (2010); Mitani (2010); Kazemiana & Sanusib (2015), have found that firms with higher management ownership are more likely to engage in earnings manipulation. This is because CEOs with more ownership will have a deeper concentration of power and, as a result, more room for opportunistic behavior. While most prior research documents the negative relationship between CEO ownership and earnings quality, there are also a limited number of scholars who provide a counter-argument that a CEO with a low level of ownership will engage more in earnings manipulation. Indeed, O'Callaghan, Ashton & Hodgkinson (2018); Amir, Shaari, and Ariff (2019), find that there is a positive association between managerial ownership and discretionary accruals.

They argue that the low percentage of ownership held by CEOs provides them with an incentive to alter earnings, especially when their firms face poor financial performance. CEOs with minimal ownership are more inclined to opportunistically set accounting accruals. As a result, CEO ownership can decrease opportunistic discretionary accrual manipulation while more ownership authority generates higher earnings quality (Warfield *et al.*, 1995).

2.5.4 CEO Expertise Power and Earnings Quality

CEOs with greater expert power are more likely to utilize their insider knowledge of their companies to limit board oversight and aggravate information gaps between management and investors. Under information asymmetry, a CEO with expert power can influence earnings for personal gain by using his unique understanding of the company and maintaining strong relationships with the board of directors. According to the study, CEOs with more expert power are likely to produce lower-quality earnings. Low earnings management (Jiang *et al.*, 2013; Ran, Fang, Luo & Chan, 2015), higher audit report timeliness (Baatwah, Salleh & Ahmad, 2015), and less frequent but more exact forecasting approaches (Bamber Jiang & Wang, 2010), are all attributed with CEOs with financial or accounting experience that is acquired over time. High-ability CEOs are more likely to give earnings predictions, according to Baik, Farber, and Lee, (2011), and their estimates are generally more accurate. The expert power is acquired over a period of time (tenure) and therefore it was looked at from the perspective of financial expertise and CEO tenure. The assumption here is that the experience/expertise is acquired through the acquisition of a certificate in the areas of finance and accounting but also through the CEO's stay on the job (CEO tenure).

There is a prevalent concern about the association between CEO tenure and earnings quality (Qawasmeh & Azzam, 2020). Empirically, several previous studies provide evidence that earnings quality is poorer in the early years of CEOs' service compared with their later years. One of the early studies on this issue was conducted by Pourciau (1993), who found that CEOs in the first year of their work were most likely to maximize reported earnings because new CEOs wanted to show that the financial performance of the previous CEO was very poor. Ali and Zhang, (2015) argue that at the beginning of their service, CEOs avoid reporting a reduction in earnings because they may be classified as 'low ability' managers. Newly appointed CEOs have been proven to manipulate earnings, specifically in the early three years. In a different vein, Kalyta (2009), finds that in the pre-retirement period, there is evidence of high earnings quality, specifically when CEO compensation is based on firm performance. Consistent with this result, Qawasmeh and Azzam, (2020), states that CEOs have less time to prove themselves and therefore they manage earnings upward in the last year of their tenure. This, in turn, may boost their reputation and compensation. Interestingly, some researchers like Zhang (2009), distinguish between short-tenured and long-tenured CEOs and find that long-tenured CEOs report earnings less aggressively than short-tenured ones.

The chance of voluntary information disclosure declines with CEO tenure, according to Lewis, Walls, and Dowell (2014). Masters-Stout Costigan and Lovata, (2008), see much higher goodwill impairments in the early years of a CEO's term, which is consistent with the big-bath theory. Ali and Zhang, (2015), on the other hand, discover that CEOs are more prone to exaggerate earnings in their early and last years of employment, which are crucial for reputation-building and performance-based

retirement plans. Dechow and Sloan, (1991) discovered that CEOs cut R&D investment in their final year in office in order to boost earnings.

Matsunaga and Yeung, (2008), find that firms with financial expertise have more precise earnings guidance and better financial disclosure quality, and they claim that the quality of a firm's financial disclosures is a function of the CEO's financial experience. CEOs are responsible for earnings disclosure and must personally validate the accuracy and completeness of the financial information published by the company. Financial expertise and experience assist CEOs in better supervising the firms' accounting and transparency policies. As a result, CEOs with financial experience provide more exact earnings predictions to analysts (Matsunaga & Yeung, 2008) and are less inclined to influence earnings than their less financially experienced counterparts (Jiang, Zhu & Huang (2013).

There is no generally agreed measurement of CEOs' financial expertise due to the different proxies that researchers employ to measure it and then investigate its impact on the magnitude of earnings quality in the firms (Qawasmeh & Azzam, 2020). Indeed, prior research uses different proxies, such as; education, financial expertise, previous positions in other firms or the same firm, and holding professional certificates in accounting. For example, Xie Davidson and DaDalt, (2003) found that firms, where managers had a financial background, were associated with high-quality earnings. Qi, Lin, Tian, and Lewis, (2018) report a significant negative link between both accrual-based and real earnings manipulation and the educational level of CEOs, which in turn decreases the quality of financial reporting. Using a different proxy, Bouaziz & Jarboui, (2020), investigated the relationship between CEO characteristics and earnings management practices. They find that financial expertise is positively associated with a CEO's tendency to use aggressive earnings manipulation. Jiang,

Zhu, and Huang, (2013), found that, while CEOs with financial expertise are less engaged in real earnings manipulation, there is no conclusive evidence that they manage earnings via accrual-based earnings manipulation. Their findings suggest that CEOs with financial expertise provide more accurate financial reporting compared with other CEOs that do not hold such expertise. Gounopoulos and Pham, (2018), measure CEOs' financial expertise as those who have previous employment in banks, investment firms, or large audit firms, and find that such CEOs are less likely to manage earnings through both accruals and real earnings manipulation. To summarise, there is no general agreement on the best measure of CEO expertise. Moreover, prior studies provide contradictory findings pertaining to the association between CEO expertise and the level of earnings quality. This study, however, follows the perspective in the literature that CEOs may use their financial expertise to manage earnings to meet specific earnings targets, rather than maximizing shareholders' wealth.

2.6 CEO Power and Integrated Reporting

CEO's power and disclosure policies are important when it comes to integrated reporting. CEOs are the most important decision-makers in the firm, especially when it comes to formulating corporate strategies, such as information disclosure rules (Aguinis & Glavas, 2012). CEOs may be focused on the short term since they want to establish a positive reputation as quickly as possible (Ryan & Wiggins, 2004). This link tends to focus CEOs' attention on short-term gains. In this light, a voluntary disclosure may have a negative impact on the company's short-term financial performance in favor of a middle and long-term impact on the company's costs (Garcia-Sanchez, *et al.*, 2020).

Disclosure has a mix of uncertain future internal and external benefits, as well as predictable and current drawbacks (Vitolla Raimo & Rubino, 2019). In terms of benefits (Cormier & Magnan, 1999), the disclosure includes economic benefits such as financial variables, the ability to create value, and competitive advantage (Iatridis, 2008); managerial benefits such as improving management and informational benefits such as obtaining higher quality information (Reimsbach & Gürtürk, 2018). In terms of costs (Prencipe, 2004), the disclosure includes production costs related to the collection, preparation, and dissemination of information; opportunity costs related to the inability to use the funds used in the reporting process in other activities proficient of maximizing the company's short-term performance; and strategy costs related to the erosion of competitive advantages due to the potential use of the disclosed data by competitors. (Prencipe, 2004). Regarding integrated reporting, it is clear the disposition, only uncertain and future, of the benefits, which primarily concern the ability to create value in the medium and long term, the satisfaction of long-term investors (Knauer & Serafeim, 2014; Serafeim, 2015), the improvement of governance mechanisms, management quality, and information systems (Knauer & Serafeim, 2014; Serafeim, 2015), and the improvement of governance mechanisms, management quality, and information systems (Vitolla & Raimo, 2018). The study is interested in finding out the effect this has on earnings quality.

The analysis of information on non-financial aspects, intangible components, and linkages between business areas necessitates both human and financial resources, which are frequently linked to the establishment of specific assets and devoted teams. Furthermore, given the many distribution channels and the various possible versions, the preparation and dissemination of integrated reports necessitate the use of resources. In addition, information on the strategy, business model, value creation

processes, prospects, risks, and opportunities, as well as the interactions between business areas, are critical data that opponents could exploit. As a result, the disclosure of an IR containing confidential information may harm the company and reduce competitive advantages. The inclusion of these particular IR expenses may diminish the CEO's willingness to use this disclosure tool. This could explain why some of the firms especially non-listed ones have not appreciated and adopted IR.

These provide justifications for a CEO's reluctance to disclose specific information, weighing the importance and probability of costs against the future and unpredictable benefits of disclosure. Because the real impact on the amount and quality of disclosure is tied to CEO authority, this hesitation does not always translate into less information being published (Muttakin, Khan & Mihret, 2018). Furthermore, given that long activity implies increased managerial power, the CEO's presence on the job for long periods of time provides another plausible cause (Ryan & Wiggins, 2004). A strong CEO can stifle the board's ability to monitor disclosure issues (Muttakin *et al.*, 2018). As a result, in terms of agency theory, this research highlights CEO power as a factor that might reduce a company's willingness to share information, and especially, to distribute an integrated report (Garcia-Sanchez, *et al.*, 2020) which may have an effect on the quality of earnings and eventually the firm value because these situations provide the CEO more power over disclosure policies, allowing decisions to be made without regard for the information demands of investors. Jensen and Berg, (2012) found that dispersed ownership has a beneficial effect on integrated reporting adoption when they looked into ownership structure. Raimo *et al.*, (2020), confirmed this conclusion in terms of integrated reporting quality. The author also discovered that institutional ownership has a beneficial impact on the quality of the information

in the integrated reports, whereas state and management ownership has a negative impact.

2.6.1 CEO Structural Power and Integrated Reporting

CEO's position is the first source of structural power (Daily & Johnson, 1997). Secondly, the combination of other titles such as Chair of the board and Chairman of the corporation provides more layers of power to the CEO. Furthermore, the composition of the board of directors reflects organizational hierarchy and a source of structural power. When boards are less independent, CEOs have more influence over investment decisions (Fama & Jensen, 1983). CEO salary also reflects the CEO's relative power inside the firm, as powerful CEOs can command greater pay packages in comparison to their counterparts. An increase in CEO structural power as a result of CEO titles, board composition, and CEO relative remuneration suggests that the CEO's ability to make investment decisions has increased (Sheikh 2019). An examination of the dimensions of CEO power and corporate social responsibility. Review of Accounting and Finance. Higher degrees of CEO structural power, according to the agency theory, improve management institutionalization and the CEO's ability to ensure integrated reporting.

Signaling theory states that good companies can differentiate themselves from bad companies by sending credible signals about the quality of their earnings to the capital market (Machmuddah & Hapsari 2021; Spence 1973). The disclosure of better-quality reports can affect company value (Lee & Yeo, 2015). Integrated reporting guarantees that the firm's economic, social, and environmental operations are integrated to present a more holistic view of company performance and to ensure that ethical responsibility is at the forefront of business activity (Lodhia 2015). Managers may add value to their organizations by embracing holistic reporting. The amalgamation of

sustainability reports with financial reports into a single "narrative" communication aimed largely at investors. CEOs share their perspectives on how sustainability concerns (this is part of integrated reporting) and actions are expected to contribute to quality earnings (Machmuddah & Hapsari 2021; Churet & Eccles, 2014).

CEO pay and firm value (earnings quality leads to high firm value) have a positive association (Page 2018; Basuroy, Gleason & Kannan 2014; Dah, Abosedra & Matar, 2012). CEOs can choose to invest in the implementation of integrated reporting disclosures, which can provide value for shareholders. However, Garcia-Sanchez *et al.*, (2020) noted that powerful CEOs may decline to employ integrated reporting disclosures and that firm incentives have no effect on this conduct. In this situation, the bigger the chance for growth, the greater the resistance of CEOs to provide integrated information about value creation as a result of its potential use by competitors. Although research on the association between CEOs' pay variables and integrated reporting is limited, past studies have found a positive relationship between the role of CEO pay and the disclosure of reports that approximate the principle of integrated reporting. Al-Shaer and Zaman, (2017), found that CEO pay has a positive effect on integrated reporting. In addition, Machmuddah and Hapsari, (2021); Callan and Thomas, (2014); Karim, Lee, and Suh, (2018), also found that highly paid CEOs are incentivized to disclose integrated reports.

Omran, *et al.*, (2021), indicate a significant and positive effect of CEO structural power on the aggregate integrated reporting while Vitolla, *et al.*, (2020), discovered that board independence has a positive effect on the quality of information disclosed, whereas Uyar and Kilic (2013), discovered no significant relationship between the proportion of independent directors on the board and the level of disclosure (integrated reporting being apart). However, the broad theoretical support provided by

agency theory enables the study to predict the existence of a positive relationship between board independence and integrated reporting (which is part of CEO structural power), that; when the board is more independent, it reduces the power of the CEO, thereby ensuring integrated reporting.

2.6.2 CEO Ownership and Integrated Reporting

CEOs play a significant role in decisions concerning financial and non-financial disclosures. CEOs report and disclose financial and non-financial information at their discretion, exploiting the benefit of greater information for their proficient benefits (Ali & Zhang, 2015; Baginski *et al.*, 2018). Therefore, they may limit information disseminated in integrated reports that may affect the firm's strategic objectives, harm the firms' performance or allow investors to control managerial actions in a more effective manner.

Conflicts are more likely to arise in firms in which CEO power reduces the board's control over the CEO's decisions (Geneen, 1984; Dalton and Kesner, 1987; Boyd 1994; Donnelly & Mulcahy, 2008; Muttakin *et al.*, 2018). CEO power is related to the hierarchical structure of the board, including members subordinated to the CEO and if the CEO is also the board chair (Jackling & Johl, 2009) or owns a good percentage of shares in the company. These circumstances increase CEO authority, assuring greater power to implement decisions, especially disclosure ones.

CEOs are driven to raise the value of the companies they own shares in because doing so will boost their wealth and that of their shareholders. As a result, integrated reporting will grow as CEOs with larger shareholdings benefit more from enhanced disclosures on the stock market. Since CEOs share the same interests as shareholders (Khlif & Achek, 2017), it is believed that they will disclose more information. In

addition, information asymmetry makes the CEO selfish, and a mismatch of stakeholder interest, which boosts agency costs (Fama & Jensen 1983; Jensen & Meckling, 1976). Therefore, companies produce integrated reporting to reduce these (García-Meca & Sanchez-Ballesta, 2010). CEOs give more information to demonstrate that they are acting in the best interests of the stakeholders by employing voluntary disclosure of financial and non-financial information to eliminate agency issues. Ownership is regarded as a strong source of power, both in theory and in practice (Finkelstein, 1992; Onali, Galiakhmetova, Molyneux, & Torluccio, 2016). In agency theory, the ownership level of CEOs in a company is a key factor influencing the agent-principal relationship. In contrast to an agency relationship, a CEO who owns a sizeable portion of a company's stock will be both an agent and a principal officer, placing him/her in a powerful position to affect almost every aspect of business relations.

Obtaining executive positions on the board of directors, for example, CEOs' owning shares in the company can have direct access to information and influence a company's running and financial practices, which lessens their incentives to share information voluntarily (Chau & Gray, 2010). Increased CEO ownership reduces the ability of independent observers to monitor, which leads to less disclosure of integrated reporting (Khlif & Achek, 2017).

According to Eng and Mak's (2003)'s analysis of a sample of Singaporean listed companies, ownership power had a negative impact on the amount of information disclosed. As a result, companies with low levels of ownership power may be pressured to provide higher quality information within integrated reports due to the high levels of information asymmetry resulting from the distinct separation between ownership and management that distinguishes companies with few shares in the hands

of CEOs (Raimo, *et al.*, 2016). On the other hand, the smaller information asymmetry that sets apart firms with substantial amounts of ownership power could encourage businesses to deliver less integrated reports.

Many researchers have analyzed CEO impact on integrated reporting (Gul & Leung, 2004; Huafang & Jianguo, 2007; Allegrini & Greco, 2013; Lewis *et al.*, 2014). In this respect, few studies focused on ownership power (Garcia-Sanchez, *et al.*, 2020; Muttakin *et al.*, 2018). There are no contributions aimed at analyzing the role of the CEO in the context of integrated reporting despite its relevance, bearing in mind that this reporting instrument can increase firm transparency or could contain information used by opponents.

2.6.3 CEO Expert Power and Integrated Reporting

Expert power enables the CEOs to ensure integrated reporting because having knowledge of integrated reporting and more time spent in the firm exposes them to more experience and expertise. Some scholars measure the years with distinct managerial functions in order to determine CEO expert power (Velte 2020; Reimer *et al.*, 2018). The study looked at CEO expert power in terms of CEO tenure and CEO financial expertise.

The more years a CEO stays in a firm the more she/he is likely to ensure that financial and non-financial information is disclosed to the shareholders. Rambe and Mangara, (2016) findings suggest that it is not only the choice of CEO to match company needs that positively impacts the quality of earnings, but also their duration as CEO. The CEO's industry and expertise were also deemed to positively influence firm outcomes and policies, especially the quality of earnings, variability of firm performance, and investment policy. However, the combined influence of integrated reporting and CEO

characteristics on earnings quality, especially the share price of the company is, yet, to be fully understood. Even though Vintila and Gherghina's, (2012) study attempted to bridge that corporate responsibility firm performance on one hand, and the CEO characteristics-performance gap by exploring the combined influence of corporate governance mechanisms, CEO characteristics, and the performance of US-listed companies, the study did not necessarily focus on integrated reporting in particular. More so, the findings on American companies may not resonate well with those of emerging developing countries such as that of East Africa.

A CEO with financial expertise will ensure more disclosure of financial and non-financial information as noted by Brockman, Campbell, Brockman, Campbell, and Salas, (2019). CEOs who progress through the financial ranks are more likely to appreciate the function of financial disclosures in reducing information asymmetry, hence CEOs with financial experience are more likely to pay closer attention to the firm's financial disclosures. Furthermore, while CEOs have broad responsibilities, those in that position are more inclined to concentrate on their own area of expertise. As a result, CEOs who have worked their way up the financial ladder are more likely to commit more time to the company's financial reporting standards and disclosures, particularly integrated reporting (Matsunaga & Yeung, 2008).

Given the highly technical and specialized knowledge required for financial reporting decisions and disclosure, it appears logical to anticipate that CEOs differ in their financial skill and that their dealings with financial market participants should impact their financial and non-financial disclosure policies.

2.7 Integrated Reporting and Earnings Quality

In recent times, the consensus on the ability to achieve high-quality disclosure seems to rest on the quest of integrating financial and non-financial information under an integrated reporting system (IIRC, 2013; IIRC, 2017). Disclosing more information has attracted the extreme attention of current and potential investors, regulators, practitioners, and accounting researchers, especially after the crises and failures that happened around the world. A number of international accounting bodies and domestic regulators have developed rules and codes to ensure that the disclosure of the information of all companies to all users and stakeholders (championed by South Africa with the introduction of the IIRC 2013 framework) is adequate to help them in taking decisions.

Earnings quality reflects the truth of the financial situation of a firm and the ability the firm has to realize earnings in current and future periods affects integrated reporting practices (Francis *et al.*, 2019). Attaining high earnings quality generates an intention for managers/CEOs to disclose more or less information (Ebrahimabadi & Asadi, 2016; Verrecchia, 1990). This means that firms that have high earnings quality will disclose more extensive information because the stakeholders will treat such information as more dependable; (Francis *et al.*, 2008; Yeh Chen & Wu, 2014). Therefore, these firms gain benefits from integrated reporting, especially the ability to infuse confidence among investors in the wake of the 2007-2008 worldwide financial crisis.

The financial and economic performance of firms has a positive link with its information disclosure (Qu 2011). Firms that have high earnings produce integrated reporting such as; financial and non-financial information (Rouf & Akhtaruddin, 2018). Although providing this information to the stakeholders usually increases

expenses, it might be regarded as a valuable contribution made by the firm (Sun *et al.*, 2010).

Conflicting arguments exist about how integrated reporting practices and decisions affect earnings quality (Francis *et al.*, 2008). Based on agency theory, the first argument suggests that, when different information exists between insiders and shareholders, shareholders have motives to request more information from firm management (Grossman & Hart, 1980; Verrecchia, 1990). In the context of this argument, Francis *et al.*, (2008), and Yeh *et al.*, (2014), say that the relationship between integrated reporting and earnings quality is substitutive or negative, wherein firms integrated reporting (disclose more information) will have high-quality earnings because the information asymmetry in those firms is high between management and investors and vice versa. The other argument is that increasing information quality creates motives for managers to disclose more information (Verrecchia 1990). According to this argument, Francis *et al.*, (2008) said that the relationship between integrated reporting and earnings quality is complementary or positive, whereby firms that have integrated reporting have high-quality earnings because stakeholders will treat such information as more dependable.

The agency theory lightened in Jensen and Meckling (1976), and Salehi and Shirazi (2016), acclaims that conflicts of interest between principals and agents acting as representatives of a principal might increase due to the deviation of interests and the presence of asymmetrical information. As agents, CEOs ensure that annual reports have been prepared to discharge their management duties, and principals use the information provided to reward the agents.

To gather these rewards, CEOs are motivated to provide more information to increase the earnings quality since high levels of disclosure are associated with higher share price as noted by De Klerk *et al.*, (2015). However, the disclosure of this information in the annual reports may be manipulated if the CEO is determined to get the rewards, which could result in lower earnings quality (Karajeh, 2020). Alzoubi (2016), noted that disclosing financial and non-financial information will enhance investors' ability to detect earnings manipulation. Hence, shareholders will demand management to disclose more information to assure that management is working in their best interests.

According to Jensen and Meckling (1976), if both CEO and shareholders have aligned interests, then no conflict of interest or agency problem exists. This is clearly true when shareholders are among those who manage the firm. Based on this argument, significant control over the running of the firm by the shareholders will reduce agency problems. Lower agency problems, because of the alignment of interests between them, would lead to less motivation for earnings manipulation and therefore result in high earnings quality, as well as the disclosure of more information.

2.8 Control Variables

Based on existing literature, the study controlled for several factors; firm leverage, firm age, and firm size. Leverage was expected to be linked to earnings quality as firms with a high level of leverage may tend to manage their earnings. Large firms may be associated with higher earnings quality under the economies of scale argument, earnings quality may be low because such firms are difficult to monitor. The research controlled for firm age based on the learning curve and reputational effect arguments. Older CEOs may be linked with lower discretionary accrual levels.

2.8.1 Firm Size and earnings quality

The size of a company varies in various ways, and it's important to think about how that affects the quality of the earnings reported. (Koller *et al.*, 2007) suggest that, according to the information asymmetry concept, large organizations have lesser information asymmetry because they have strong governance and control, which leads to a reduction in earnings management practices (Bassiouny, 2016; Klein 2002; Xiel *et al.*, 2003; Nelson & Devi, 2013; Sharma & Kuang, 2014). However, being a huge company is not a sufficient reason to have excellent corporate governance and, as a result, limit earnings manipulation practices because large companies like Enron have had scandals yet they are large (Bassiouny 2016).

Researchers suggest that there is a link between firm size and earnings quality; nevertheless, the relationship in each study isn't the same (Vasilescu & Milla, 2016; Sharma & Kuang, 2014). According to one argument, company size had an impact on earnings quality because large organizations had more complicated business activities than small businesses, and larger businesses would pick accounting procedures for adjusting results to meet corporate policy (Jensen & Meckling, 1976; Watts & Zimmerman 1986). Ball & Foster, 1982), noted that the size of the organization was positively connected with earnings quality because large firms generally pay fixed expenditures to maintain internal control systems during the financial statement preparation process. Small firms, on the other hand, are more likely to alter previously declared profit targets due to insufficient internal control mechanisms (Doyle, Richardson & Tuna, 2007).

Large companies, on the other hand, may have lower earnings quality than small firms (Watts & Zimmerman, 1990). This is supported by the studies of Gopalan and Jayaraman, (2012); Vasilescu and Milla, (2016), who found that the size of a

company is adversely connected with earnings quality. Larger firms have additional monitoring requirements as well as greater incentives to reduce the CEO's power. Larger companies utilize stricter monitoring practices that result in high-quality earnings. Compared to smaller organizations, larger firms are under greater stakeholder pressure to perform as expected. This encourages management to fulfill these demands (Barton & Simko, 2002), because there is more capital involved in a larger company, therefore shareholders are more interested in it. The investigations of Waweru and Riro, (2013); Chalaki, Didar, and Riahinezhad, (2012); Abed, Al-Attar, and Suwaidan, (2012); Li, Abeysekera, and Ma, (2014); Mukhtaruddin (2018), showed that firm size did not affect earnings quality.

2.8.2 Firm Leverage and Earnings Quality

The management of a firm's earnings is limited by financial leverage. Leverage is a factor of earnings quality as debt covenant limits CEOs to alter financial statements (Watts & Zimmerman, 1986). Dechow *et al.*, (1996), demonstrate the link between earnings management and the need to obtain fresh external funding at low cost, which is created by a huge quantity of debt financing, resulting in a high leverage ratio. Earnings quality proxies such as "magnitude of accruals" (DeFond & Jiambalvo 1994), target beating (Dichev & Skinner 2002), and aggressive accounting choices were also found to be connected to leverage (Sweeney, 1994).

There is a strong link between financial leverage and earnings quality (Liu *et al.*, 2017; Waweru & Riro, 2013; Vasilescu & Millo, 2016). Financial costs have an impact on a firm's accruals, according to Francis *et al.*, (2005). Where firms had poor earnings quality, capital costs of accruals were greater. Low debts had a negative link with reported returns, whereas large debts had a positive relationship with the firm's earnings (Qamar, Masood & Khan, 2016). The relationship between financial

leverage and earnings quality will lead CEOs to have the desire to inflate their financial performances not just to meet financial covenants in existing debt contracts but also to increase new debts with better terms (Godigbe, Chui & Liu, 2018; Dechow, Ge & Sloan, 2011).

De Fond and Jambalvo (1991), stated that in companies with a lot of debt, CEOs can participate in the financial statement production process to exaggerate earnings in order to avoid breaking loan arrangements. Studies by (Waweru & Riro 2013; Hassan & Bello 2013; Alves 2014; Jiang *et al.*, 2008; Parte-Esteban & Garcf (2014); Vasilescu & Millo (2016); Abed *et al.*, (2012), discovered a positive relationship between financial leverage and earnings quality. The negative influence of financial leverage on a firm's earnings quality was discovered by Dechow and Dichev (2002), other scholars with similar results were: Gopalan and Jayaraman (2012); Liu *et al.*, (2017); Klai and Omri (2011); Houqe *et al.*, (2012), while Parte-Esteban and Garcfa, (2014); Vasilescu and Millo (2016); Abed *et al.*, (2012), discovered that this relationship was of no statistical significance.

2.8.3 Firm Age and earnings quality

According to previous studies, companies that have been around for a while have a tendency to earn higher quality earnings than younger firms because they are more well-known, have a higher market value, and have a reputation to uphold. They are more aware of the laws and standards that apply to their practices. The longer a company has been in business, the more likely it is that it has improved its financial reporting procedures over time (Alsaed 2006); additionally, the longer a company has been in business, the more likely it is that it has worked to improve its reputation and image in the marketplace (Akhtaruddin 2005); consequently, the older the

company, the less likely it is to engage in earnings management practices (Bassiouny, 2016).

The concept is that CEOs in older organizations have greater experience, have benefited from learning, are less susceptible to the liabilities of newness, and can thus achieve stronger accounting and market-based performance. Another opposing principle is that older firms are more prone to resistance and bureaucratic ossification that comes with age; as a result, they are less likely to have the flexibility to respond quickly to changing environmental circumstances and are more likely to lose out in performance to younger and more flexible firms (Yahaya, Tanko & Muhammad, 2017).

The period the firm has been in operation has an implication on its level of earnings quality. Younger firms are most likely in need of external financing, which may give them an added motivation to manipulate earnings (Desai, Hogan & Wilkins, 2006). Different scholars have measured firm age differently that is the number of years since incorporation (Borghesi 2007, Boone 2007) and others the number of years between the Initial Public Offer (IPO) date and the founding year (Ali & Zhang, 2015; Lee & Masulis, 2011). In order to determine the age of the firm, this study followed the number of years since incorporation for the observation year.

2.9 Conceptual Framework

This is a graphical representation of the phenomenon studied (Osanloo & Grant, 2016). This study sought to determine the moderating role of institutional ownership in the relationship between CEO power and earnings quality as mediated by integrated reporting in firms listed in East Africa. The dependent variable was earning quality, the independent variable was CEO power, the moderator was institutional

ownership, and the mediating variable was integrated reporting as shown in Figure 2.1.

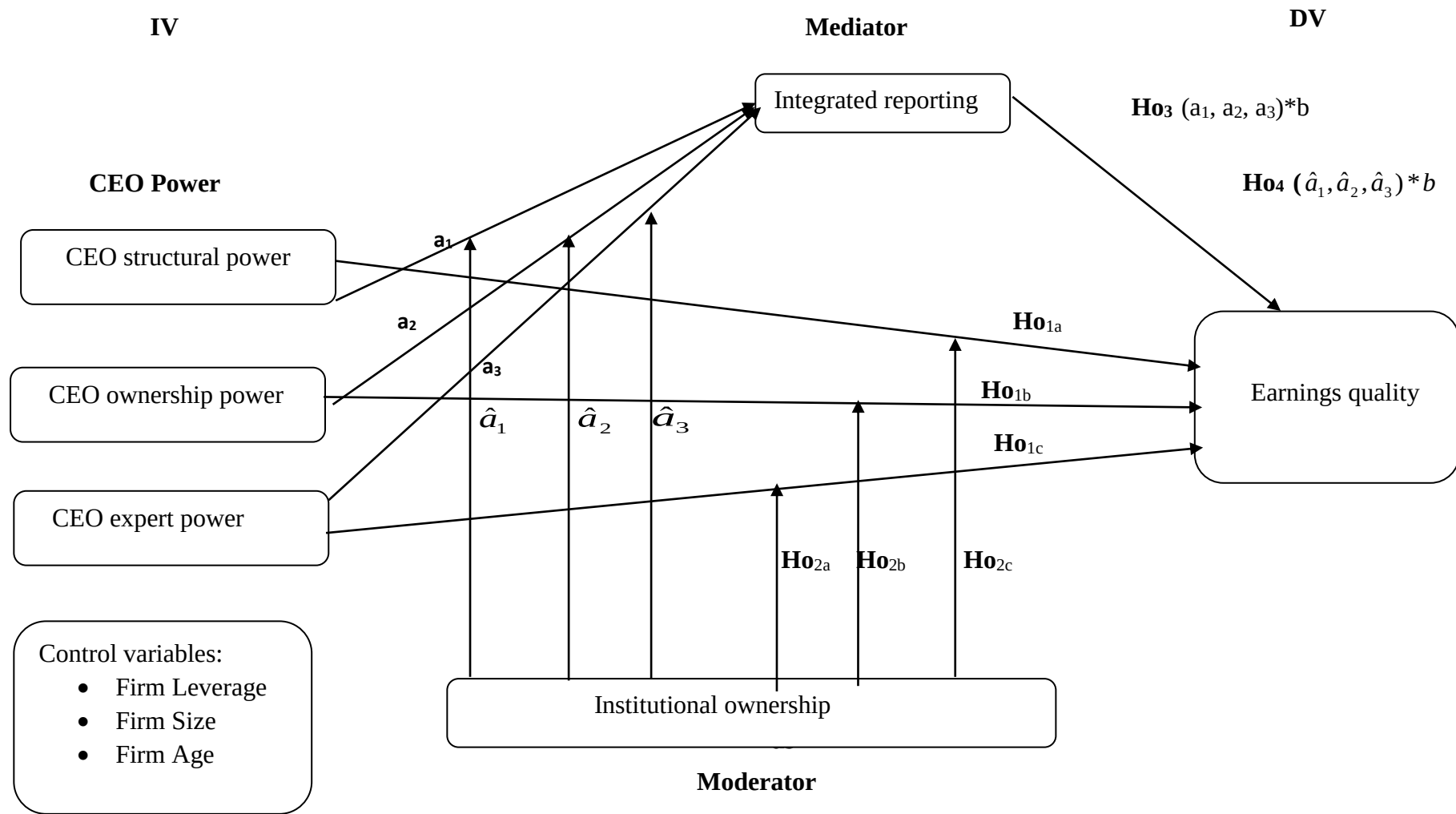


Figure 2.1 : Conceptual Framework

Source: Author, 2023

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the research paradigm, research design, target population, data type, and source, measurement of variables, data analysis and presentation, diagnostic tests, regression assumptions, and ethical considerations.

3.1 Research Paradigm

The study was grounded in positivism philosophy. When the study adopts a positivist position, firms and other social entities are seen as real in the same way as physical objects and natural phenomena are real. Epistemology focused on discovering observable and measurable facts and regularities, and only phenomena that were observed and measured lead to the production of credible and meaningful data (Scotland 2012). Causal relationships in the data create law-like generalizations like those produced by scientists (Gill & Johnson, 2002). The study used these universal rules and laws to help in explaining and predicting behavior and events in the listed firms in East Africa. This epistemological closeness to positivism is in line with neo-empirical research or positive accounting theory, which relies on empiricism or objective positivism.

According to the study, knowledge of the social phenomena that was studied was obtained primarily, however not exclusively, by searching for laws, causal relationships, and regularities between the constituents of the social world. Knowledge is thus seen as the main objective to arrive at a description of reality. In this regard, the current study's knowledge about the phenomena under investigation; CEO power, integrated reporting, and earnings quality was gathered through quantitative measurement using content analysis of all listed firms in East Africa.

The choice of methodology was directly dependent on the ontological, epistemological, and human nature assumptions of the study. The philosophical assumptions discussed above were able to reveal that the current study is going to follow an objective position. This implies that the study was inclined towards an objective nomothetic methodology, where quantitative research methods were used.

Reality is independent of human beings and emphasizes the importance to reach and discover theories based on empirical research (Walliman 2017). This is summarized in the reasoning that logical reasoning and mathematical proof are rationally justified rather than focusing on subjectivity and interpretation. The argumentation discussed above was connected to this study since it was statistically tested. Positivism is often linked with quantitative, scientific, traditionalist, and objective research especially when the data is predetermined and highly structured as is going to be related to the understanding of this research.

3.2 Research Design

This study used both the explanatory and longitudinal research design. According to Kumar (2018), the explanatory design is the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, thereby, ensuring that the research problem is effectively addressed; it constitutes the blueprint for the collection, measurement, and analysis of data. It is based on the premise that if a statistically significant relationship exists between two variables, then it is possible to predict one variable using the information available on another variable (Babbie, 2020).

The research design was chosen because it provided rigorous and replicable procedures for understanding relationships in the study. Also, it helped to indicate

whether and to what degree a relationship exists between the quantifiable variables. The design sought to gain insight into a phenomenon as a means of providing basic information in the area of study (Babbie, 2020).

A panel (longitudinal) study is a particular design of the longitudinal study in which the unit of analysis is followed at specified intervals over a long period, often many years. The key feature of panel studies is that they collect repeated measures from the same sample at different points in time (Laurie, 2013).

3.3 Target Population

The target population of the study was all the firms listed at the East African Securities and Stock Exchanges. These are; Nairobi Securities Exchange, Dar es Salaam Securities Exchange, Uganda Securities Exchange, and Rwanda Stock Exchange as shown in Appendix 1. The data set of the study comprised 117 firms. 61 firms listed at the Nairobi Securities Exchange, 28 firms in Dar es Salaam Securities Exchange, 18 firms from Uganda Securities Exchange, and 10 firms Rwanda Securities Exchange for nine consecutive years from 2013 to 2021.

3.4 Inclusion/Exclusion Criteria

The study focused on firms that are listed in the East African Securities/stock Exchange from the year 2013 when firms started adopting integrated reporting to the year 2021. Cross-listed firms (18) were excluded since there was one consolidated report for the company (Appendix IIa). Firms that have been suspended (4) from trading in the Securities/stock exchanges in the different countries in East Africa were excluded as shown in Appendix IIb. The newly listed firms (15) were also excluded (Appendix IIc). Finally, those firms that the study was unable to correct data from (10) were equally excluded. The closing data point for this study was 31 December

2021, at which point there were 78 (117-39) firms listed on the different Securities/stock Exchanges in East Africa.

The inclusion process was the firms that were traded consistently for the whole period of the study (from 1 January 2013 to 31 December 2021). A survey of these firms was carried out. The study had a total of 702 (78 x 9yrs) firm-year observations. The sample period was restricted to the period 2013 to 2021 so as to see the effect of institutional ownership on the relationship between CEO power and earnings quality via integrated reporting.

3.5 Measurement of Variables

The objective of the study was to examine the moderating role of institutional ownership in the relationship between CEO power and earnings quality as mediated by integrated reporting among the listed firms in East Africa.

3.5.1 Dependent Variable

The study's dependable variable was earnings quality (EQ) which was measured using discretionary accruals (DA). Accruals are revenues earned or expenses incurred that impact a company's net income on the statement of profit or loss, although cash related to the transaction has not yet changed hand. It is the difference between the reported earnings during the period and the cash earnings during that same period (Singh, Aggarwal & Anand, 2016). Accrual is disintegrated into discretionary accruals (DA) and non-discretionary accruals (NDA). Non-discretionary accruals are accounting adjustments made by management to the firm's cash flows that are mandated by accounting standard-setting bodies such as the Capital Market Authority and other Accounting Standard bodies, whereas the discretionary part refers to the adjustment made by management (Healy 1985) based on their own discretion.

Total Accruals (TA) = Non-Discretionary Accruals (NDA) + Discretionary Accruals (DA)

According to Dechow (1994), frequently present CEOs with any opportunity are likely to manipulate results. Healy (1985), was the first to use discretionary accruals to detect earnings manipulation. Discretionary accruals are assumed to be subject to managerial discretion, whilst non-discretionary accruals are assumed to be at the expected level of accruals in the firm assuming no earnings manipulation.

In the existing literature, there are six formulas for estimating the discretionary component of total accruals. Where total accruals is defined as the change in non-cash current assets minus the change in current liabilities (excluding the current portion of long-term debt), less depreciation, and amortization in all of the models.

The Healy Model

Estimated Discretionary Accruals (EDA) for firm i in period t are defined by Healy (1985) as total accruals scaled by lagged total assets:

$$EDA_{it} = \frac{TA_{it}}{A_{it-1}} \quad 1$$

Where;

EDA is the estimated non-discretionary accruals

TA is the total accruals

A is the total assets

t represents a year subscript for years included in the estimation period

This model assumes that the period's predicted non-discretionary accruals are zero and that any non-zero value for total accruals is due to managerial discretion. As Kaplan (1985), points out, this assumption is likely to be overly restrictive because

working capital accruals would fluctuate in reaction to economic conditions. It is the simplest and most naive way of determining discretionary accruals.

The DeAngelo Model

Non-discretionary accruals is assumed to follow an unsystematic trend as stated by DeAngelo (1986) model. Therefore, for a steady-state firm, non-discretionary accruals in period t was assumed to equal non-discretionary accruals in period $t - 1$, with the result that any variance in total accruals between period $t - 1$ and t was attributable to accounting discretion. Thus, DeAngelo (1986) procedure measures estimated discretionary accruals as the first difference in total accruals scaled by lagged total assets as shown below:

$$EDA_{it} = \frac{TA_{it} - TA_{it-1}}{A_{it-1}} \quad 2$$

The modified-DeAngelo model

The DeAngelo model's steady-state assumption is incorrect for the majority of firms (Christer 1999). Friedlan (1994), proposed a modified-first difference model to adjust for non-stationarity in the non-discretionary accrual component, based on the notion that non-discretionary accruals are likely to vary with the degree of business activity. Friedlan's (1994), approach implies that non-discretionary accruals are proportional to operational activity at all times, with increases (decreases) in operating activity corresponding to increases (decreases) in non-discretionary accruals. Changes in total accruals scaled by changes in operating activity give a way to manage changes in non-discretionary accruals linked with differences in operating performance under certain circumstances. Friedlan (1994), provides the following model for discretionary accruals based on proxying operating activity with sales income, abbreviated S:

$$EDA_{it} = \frac{TA_{it}}{S_{it}} - \frac{TA_{it-1}}{S_{it-1}} \quad 3$$

The Jones Model

To account for variations in non-discretionary accruals linked with the depreciation charge and changes in economic activity, Jones (1991) uses a regression-based expectation model. Total accruals are first regressed on proxies for the non-discretionary component of total accruals using the oldest time series of data available immediately before the event period t as shown below:

$$\frac{TA_{it}}{A_{it-1}} = \beta_{0i} \frac{1}{A_{it-1}} + \beta_{1i} \frac{\Delta REC_{it}}{A_{it-1}} + \beta_{2i} \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \quad 4$$

Where;

TA_{it} - total accruals for firm i in period p ;

ΔREV_{it} - change in revenue from period $t - 1$ to t for firm i ;

PPE_{it} - gross plant property and equipment for firm i in period t ;

A_{i-1} - beginning of period total assets for firm i ;

$t - 1, \dots, t$, estimation years immediately prior to event year t .

ε_{it} - is the residual, which represents the firm-specific discretionary accruals (DA)

The REV and PPE terms are intended to account for the non-discretionary component of total accruals resulting from changes in operating activity and depreciation levels, respectively. To generate estimated discretionary accruals, the parameter estimates a_i , $b1_i$, and $b2_i$ of i ; 1_i , and 2_i from regression (4) are combined with data from event year t :

$$EDA_{it} = \frac{TA_{it}}{t_{it-1}} - \left[ai \left(\frac{1}{A_{it-1}} \right) + b_{1i} \left(\frac{\Delta REV_{it}}{t_{it-1}} \right) + b_{2i} \left(\frac{PPE_{it}}{t_{it-1}} \right) \right] \quad 5$$

However, because regression (4) requires time series data, survivorship bias concerns are unavoidable. DeFond and Jiambalvo (1994) use a cross-sectional variant of the Jones model to reduce the effects of survivorship bias. For each sample firm, the cross-sectional strategy begins with the creation of industry-event period matched portfolios. Then, using these matched portfolios, regression (4) is estimated to obtain industry/year-specific estimates of, 1, and 2. These estimates are combined with firm-specific data in equation (5) to generate estimated discretionary accruals for each firm.

The Modified Jones Model

The resulting measure of discretionary accruals does not reflect the impact of sales-based manipulation because all revenue increases in the Jones and cross-sectional Jones models are assumed to be non-discretionary. Dechow *et al.*, (1995) extend the Jones approach by removing the change in receivables (ΔREC) from the change in revenue (ΔREV) for each sample firm in an attempt to capture revenue manipulation. The strategy effectively implies that any change in the level of credit sales over time indicates earnings management activities.

Discretionary accruals for the modified-Jones model are calculated using coefficient estimates from regression (4) or its cross-sectional equivalent as below:

$$EDA_{it} = \frac{TA_{it}}{t_{it-1}} - \left[ai \left(\frac{1}{A_{it-1}} \right) + b_{1i} \left(\frac{\Delta REV_{it}}{t_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}} \right) + b_{2i} \left(\frac{PPE_{it}}{t_{it-1}} \right) \right] \quad 6$$

Where:

TA_{it} - total accruals for firm i in period p ;

ΔREC_{it} - change in receivable from period $t - 1$ to t for firm i

ΔREV_{it} - change in revenue from period $t - 1$ to t for firm i ;

PPE_{it} - gross plant property and equipment for firm i in period t ;

A_{i-1} - beginning of period total assets for firm i ;

$t - 1, \dots, t$, estimation years immediately prior to event year t .

ε_{it} - is the residual, which represents the firm-specific discretionary accruals (DA)

Kothari Model

Unlike the Jones (1991) model, the Kothari model includes a constant term that maintains three explanatory variables. Kothari, Leone, and Wasley, (2005) suggest that the addition of an intercept reduces heteroscedasticity problem and misspecified issues (Chang & Sun, 2010). Second, the original and modified Jones approaches restrain the intercept and treat the reciprocal of lagged total assets as an explanatory variable. They also replace the complementary of lagged total assets with a constant. These two alternative specifications give similar results and maintain only two explanatory variables, namely, revenues and property, plant and equipment (Peasnell, Pope & Young, 2005). Third, Kothari *et al.*, (2005) argue that Dechow, Sloan, and Sweeney (1995) model produces enormous estimated earnings manipulations whenever a firm grows in the event stage compared to the estimation period. Kothari model hence provides more reliable results (Ronen & Yaari, 2008). Finally, as Jones and modified models ignore firm performance (Neifar, Halioui & Abdelaziz, 2016), the rate of return on assets (ROA) is added to control for variations in accruals resulting from changes in business conditions as shown below:

$$DA_{it} = \frac{TAC_{it}}{TA_{it-1}} = \beta_0 + \beta_1 \times \frac{1}{TA_{it-1}} + \beta_2 \times \frac{\Delta SALES_{it} - \Delta REC_{it}}{TA_{it-1}} + \beta_3 \times \frac{PPE_{it}}{TA_{it}} + \beta_4 \times ROA_{it} + \varepsilon_{it}$$

Where:

TAC_{it} : is total accruals,

TA_{it-1} : is lagged total assets,

ΔS_{it} : is change in sales,

ΔREC_{it} : is the change in net receivables,

PPE_{it} : is net property, plant, and equipment,

ROA_{it} : is the return on asset,

β_0 : Intercept

β : Beta coefficient

ε_{it} : is the error term

t: time indices

i: firm indices

Since Kothari *et al.*, (2005) proposed a model that includes an intercept and a lagged return on assets (ROA) to mitigate the econometric problems of the Jones and the modified Jones models in estimating accruals, this study, therefore, adopted the Kothari *et al.*,’s model as adopted by Fagbemi, Osemene, and Agbaje, (2020) and Moardi, Salehi, Poursasan, and Molavi, (2019), also called the performance matched discretionary accruals model (PMDAM) to estimate the measure of earnings quality. Additionally, the study used absolute discretionary accruals. According to Doukakis (2014), the absolute value is the best discretionary accruals measure due to the absence of a specific direction of estimations.

Empirical Predictions

This section discussed probable factors of total accruals' non-discretionary component. The stimuli for earnings management are orthogonal to the determinants of non-discretionary accruals, so empirical predictions are initially developed assuming either (i) no earnings management activity (i.e., actual discretionary accruals equal zero) or (ii) the stimuli for earnings management are orthogonal to the determinants of non-discretionary accruals.

Cash Flow Performance

Accounting earnings are made up of accruals and cash flows. Accruals adjust realized cash flows by allocating receipts and expenditures to their 'proper' periods using the matching principle. The intrinsic smoothing property of accounting accruals is such that extreme positive (negative) cash flows in a particular period tend to result in negative (positive) non-discretionary accruals (Young 1999). Failure to adequately control for the relationship between cash flows and non-discretionary accruals when estimating discretionary accruals will result in part of the positive non-discretionary accruals associated with extreme negative cash flows being incorrectly attributed to income-increasing discretionary accrual activity, and vice versa which could mean that EDA will have measurement error that is inversely related to cash flow performance.

Growth Rate

The growth or reduction of a company's operating activities has an impact on all elements of its operations, including accounting accruals. When all other factors are equal, non-discretionary working capital requirements result in high increases in both current asset and current liability accounts for growth firms, whereas the inverse is

true for declining firms (Jones 1991). If the impact of firm expansion on non-discretionary current assets and current liability accruals is symmetric, a systematic relationship between the rate of firm growth and the level of non-discretionary accruals might not be expected.

Therefore, if the relationship between firm growth and non-discretionary accruals is not taken into account, some of the positive non-discretionary accruals associated with high growth was misattributed to income-increasing discretionary accrual activities, and vice versa. Discretionary accrual models that do not account for changes in growth rates, will result in predictable measurement inaccuracy in EDA. The modified-DeAngelo, Jones, and modified-Jones models all acknowledge the possibility of a relationship between non-discretionary accruals and firm growth rate. The effectiveness with which these models control for growth, on the other hand, is still an empirical matter (Young 1999).

The Non-Current Asset Structure

The largest systematic disparity between reported earnings and operating cash flow for most firms, according to Perry and Williams (1994); Dechow (1994), is the periodic depreciation charge. The relative extent of the depreciation component means that, all else equal, a substantial portion of the dissimilarity in firms' total accruals is likely to result from variances in the level of the depreciation charge. More specifically, the amount of the depreciation expense will tend to be negatively connected with the level of total accruals, as a high (low) depreciation charge will result in a more (less) negative value for total accruals.

While the negative relationship between total accruals and the extent of the depreciation charge poses few problems in terms of estimating discretionary accruals,

if depreciation is primarily discretionary in nature, it is a major basis of concern if depreciation includes a major non-discretionary component. This is because if firms do not sufficiently control for variances in depreciation expense, some of the negative non-discretionary accruals associated with a significant depreciation expense may be assigned to income-decreasing discretionary accrual activities, and vice versa. Meaning that, even if no earnings management action is taking place, companies with a large depreciation charge may appear to be making income-decreasing accounting choices.

The size of the depreciation expense is determined by two factors; the non-current asset amount and the economic useful life of the non-current asset. Depreciation accrual is expected to have a positive relationship with non-current asset amount and a negative relationship with average non-current asset useful life. Given that depreciation accrual must have a negative sign, discretionary accrual models that fail to account for variances in firms' depreciation charges will produce EDA that are negatively associated with non-current asset amount but positively correlated with average non-current asset useful life.

3.5.2 Independent Variable

CEOs are believed to be influential if they can sway strategic choices despite possible criticism from other executives and board members. In both economics and management literature, there is no agreed-upon definition of CEO power. To quantify CEO power, most early studies used the CEO's position as the firm's chairman of the board of directors (Weisbach, 1988; Brickley *et al.*, 1994; Yermack 1996; Agrawal & Knoeber, 1996; Rosenstein & Wyatt, 1997; Adams *et al.*, 2005; Villalonga & Amit, 2006; Fahlenbrach 2009). CEO power is a multidimensional notion that should not be quantified as a single indication (Astley & Sachdeva 1984; Finkelstein 1992;

Krackhardt 1990). Different authors have used different proxies for CEO power; founder, duality, tenure, and CEO financial expertise (Le, Kweh, Ting & Nourani, 2020; Ntim, Lindop, Thomas, Abdou & Opong, 2019; He, Cordeiro & Shaw 2015; Li & Srinivasan, 2011) and (Hemdan, Hasnan, & Ur Rehman, 2021) as duality, ownership, tenure, and political connection. According to Finkelstein (1992), CEOs gain power in four ways: structural, ownership, expertise, and prestige but Tang *et al.*, (2011), assert that the prestige component of CEO power is not a proximal metric in comparison to other dimensions and should not be included in CEO power measurement and therefore did not use prestige as a criterion for CEO power and also Han *et al.*, (2016) eliminated the prestige factor from their CEO power assessment. The study followed the studies of Han *et al.*, (2016); Sheikh (2019), and Tang *et al.*, (2011) and use the three dimensions of CEO (structural, ownership, and expertise).

3.5.2.1 CEO Structural Power:

The growth in CEO structural power, as measured by CEO titles, board composition, and CEO relative compensation, shows that the CEO's capacity to make investment choices and manage company resources with less board dissent has increased. According to the agency theory, stronger levels of CEO structural authority boost raise CEO's ability, which affects reported earnings as well as the firm's capacity to issue integrated reports. Structural power can be measured using CEO pay slice, CEO pay gap, and board independence.

The CEO pay slice (CEOPS) has been used in some current research as a measure of CEO power (Sheikh 2019; Bebchuk *et al.*, 2011; Chen *et al.*, 2013; Jiraporn and Chintrakarn, 2013; Chintrakarn *et al.*, 2014; Lee *et al.*, 2015). These proxies for CEO power, on the other hand, only assess one facet of power and disregard others. CEOPS has its own limits, according to Zagonov and Salganik-Shoshan (2018), that

CEOPS has a major flaw: it implicitly makes restricted assumptions regarding the compensation distributional structure among top executives. The study showed that CEOPS measure ignores important information in remuneration data for executives in the top team other than the CEO, which can lead to a misleadingly high (low) CEOPS score being awarded to a relatively weak (strong) CEO. As a result, using CEOPS as a metric of structural power exposes researchers to the danger of reaching incorrect findings. Therefore CEOPS should be used in conjunction with other measurements such as the CEO pay gap. Furthermore, using CEO duality or founding family status creates a binary variable that labels a CEO as powerful or not strong.

CEO pay Slice (CEOPS). According to Bebchuk *et al.* (2011), the CEO pay slice (CEOPS), which is calculated as the ratio of CEO remuneration to the total compensation of the top five executives in the management, represents the CEO's relative influence and authority and assesses the CEO's centrality in the executive team. The CEO's power grows in direct proportion to his or her pay slice (Zagonov & Salganik-Shoshan, 2018).

CEO Pay Slice gap: The pay disparity between the CEO and the next highest-paid executive represents the CEO's influence and importance in comparison to the second most powerful executive on the management team. The CEO pay gap (CEOPG) is calculated as the difference in remuneration between the CEO and the next highest-paid executive as a percentage of the top five executives' total salary.

Board independence: The majority of the early research measured CEO power based on board structure. Independent directors are more successful in overseeing the CEO's performance (Fama & Jensen, 1983; Bhagat & Black, 2002; Ryan & Wiggins, 2004). The power of the CEO to make unilateral decisions is hampered by a higher

proportion of independent directors on the board. The study was unable to find information about the CEO remuneration in the listed firms in East Africa and therefore, used the board independence to measure the CEOSP.

3.5.2.2 CEO ownership power:

Ownership is a component of CEO power. When CEOs buy company stock, they gain ownership power. To offer incentives and alleviate agency concerns, CEOs are given firm shares. The study used shareholding to measure the ownership power, which equals 1 if CEO holds shares, and zero otherwise.

3.5.2.3 CEO expert power:

A key source of CEO power is the capacity to effectively manage the company in a difficult environment. When CEOs spend more time with their companies, they have a better understanding of their operations and may form their own management teams. As a result, boards appear to have less clout in influencing CEO decisions (Wu *et al.* (2011). As a result, two dummy variables are employed to proxy for expert power: financial expertise, which is one if the CEO has at least a professional certificate or its equivalent and zero otherwise, and tenure, which is one if the CEO's tenure exceeds the sample median tenure and zero otherwise.

3.5.3 Moderating Variable

Institutional ownership was measured as the Ownership structure is measured through the proportion of shares owned by institutional shareholders to total outstanding shares.

3.5.3 Mediating Variable

Integrated reporting was measured using the content elements in the International integrated reporting framework IIRC (2013). Similar to the approach used by Cooray,

Senaratne, Gunarathne, Herath and Samudrage, (2020); Kılıç and Kuzey, (2018); Lee and Yeo, (2016); Stent and Dowler, (2015); Marx and Mohammadali-Haji, (2014) a disclosure index was constructed by focusing on the content elements of the IIRC (2013) integrated reporting framework. The disclosure index included a total of 38 items with 74 scores as shown in Appendix II b within eight categories, including: “organizational overview and external environment”; “governance”; “business model”; “risk and opportunities”; “strategy and resource allocation”; “performance”; “outlook” and “basis for preparation and presentation”. Appendix II c shows the match of those items with the content element as required in the IIRC (2013) integrated reporting framework together with their scores.

To determine whether a sample company disclosed items within the integrated reporting disclosure index, all narrative sections of the annual reports and stand-alone reports (i.e. chairman’s statement, directors’ report, operating review, discussion, and analysis) were examined. Unlike the commonly used form of content analysis in analyzing the existence or absence of each item with a non-weighted disclosure approach by many prior studies (Krippendorff 2018; Haji & Anifowose, 2017; Haji & Anifowose, 2016; Setia, Abhayawansa, Joshi & Huynh 2015; Oliveira, Frias-Aceituno, Rodríguez-Ariza & García-Sánchez (2013; Garcia-Sánchez, Rodríguez-Ariza & Frías-Aceituno, 2013; Rodrigues, & Craig 2010) by assigning a score of 1 if the company disclosed a certain item at least once, and 0 otherwise, this study will use a score whereby a firm received a score ranging from 0 to 74, depending upon the number of items disclosed by Cooray, Senaratne, Gunarathne, Herath & Samudrage, (2020); Kılıç and Kuzey (2018); Lee and Yeo, (2016); Stent and Dowler, (2015). The integrated reporting scores (IRS) was calculated as a ratio of items disclosed to the

maximum number of items that a firm could disclose. The IRS was mathematically represented as:

$$IRS = \frac{\sum_{i=1}^t IR_i}{t}$$

Where:

$IR_i = 0$ or 1 , as follows:

$IR_i = 0$ if the disclosure item was not found;

$IR_i = 1$ if the disclosure item was found; and

t = the maximum number of integrated reporting disclosure items a firm could disclose for example in this case they are 38 items.

3.5.4 Control Variable

Firm leverage (FL) was measured using the ratio of total debt and total equity (total debt/total equity).

Firm size (FS) was measured using the logarithm of total assets.

Firm age (FA) was measured by the number of years of existence of the company since its incorporation, that is, the year 2021 minus the year of its incorporation.

Control variables	Measurement	Authors
Financial leverage (FL)	Measured by total debt and total equity (total debt/total assets)	Mao, Qi, & Zhang, 2017; Basuroy et al. 2014; Feng & Saini 2015
Firm size (FS)	The natural logarithm of total assets	Ali, Noor, Khurshid, & Mahmood, 2015; and González, & González 2012; Desoky and Mousa 2013; Lahouel, Peretti, & Autissier 2014; Zou, Zeng, Lin, & Xie 2015.
Firm age (FA)	Logarithm of the number of years since the establishment of the company.	Mapitiya, Ajward, & Senaratne, (2016)

3.6 Nature and Type of the Data

The study utilized secondary data which was obtained from individual firms' audited annual financial reports.

3.6.1 Firm Selection

The study concentrated on the companies listed in all of the East African nations of Kenya, Tanzania, Uganda, and Rwanda. Burundi was not included because its stocks have not yet begun to trade on the market. The Capital Market Authority (CMA) of the countries in East Africa published audited financial reports, which served as the source of secondary data. The 78 listed companies that satisfied the study's inclusion requirements underwent a panel data analysis. Firms that were not consistently in operation and those listed on the Security Exchange after 2013 were excluded from the study using the inclusion/exclusion criteria. The firms were from all different industries such as banking, agriculture, manufacturing and allied, automobiles and accessories, commercial & services, construction & allied, energy & petroleum, Insurance, Investment, telecommunication & technology, real estate investment & trust, utilities, consumer goods & services, health care, oil & gas and basic material. The panel data was gathered from 2013 to 2021 across a 9-year span, yielding 702 firm-year observations in total. In order to conduct meaningful statistical tests in quantitative research, a large number of observations is required, according to Creswell (2014).

3.6.2 Data Collection

A data collection schedule was used in the collection of data as shown in Appendix IV. This was suitable for the study because all the audited financial reports and other information about the firms were readily available since it is a requirement by the Company's Act that all listed companies publish audited financial statements but also

because of stakeholder's demands, firms are left with no choice but to produce annual reports.

3.6.3 Data Preparation

It is critical to first inspect the data set before beginning to analyze it. Descriptive statistics displays data in an understandable form so that you can see what, if anything, needs to be done to it before it can be analyzed. Descriptive statistics are used to characterize the fundamental characteristics of a study's data. They give quick summaries of the sample and the measures. They are the foundation of practically every quantitative data analysis, along with simple graphical analysis (McCarthy, *et al.*, 2019).

Data was entered into STATA after coding, correcting, and cleaning. Data was also screened for missing data and outliers that might affect research variable coefficients were addressed using Winsorize at 1% and 99%. For descriptive statistics, raw data was utilized and in order to construct inferential statistics, data was turned into logs.

The averages, maximum, minimum, and standard deviation of data gathered on CEO power, institutional ownership, integrated reporting, and earnings quality across listed firms in East Africa were calculated using descriptive statistics. The standard deviation is a reflection of the consistency with which the particular mean scores were generated, whereas the mean score is related to typical data taken from the listed firms in East Africa (Sekaran, & Bougie, 2016 and Bougie, & Sekaran, 2019). As a result, small standard deviation numbers suggest strong consistency, whereas large values denote low consistency). Shipiro - Wilk, and Shapiro - Francia tests were utilized to see if the data collected for the different scales was normally distributed (Cramer & Howitt, 2004).

3.7 Statistical Model (Conditional Process Model)

The study statistical diagrams are depicted below step by step according to model 8 Hayes (2018).

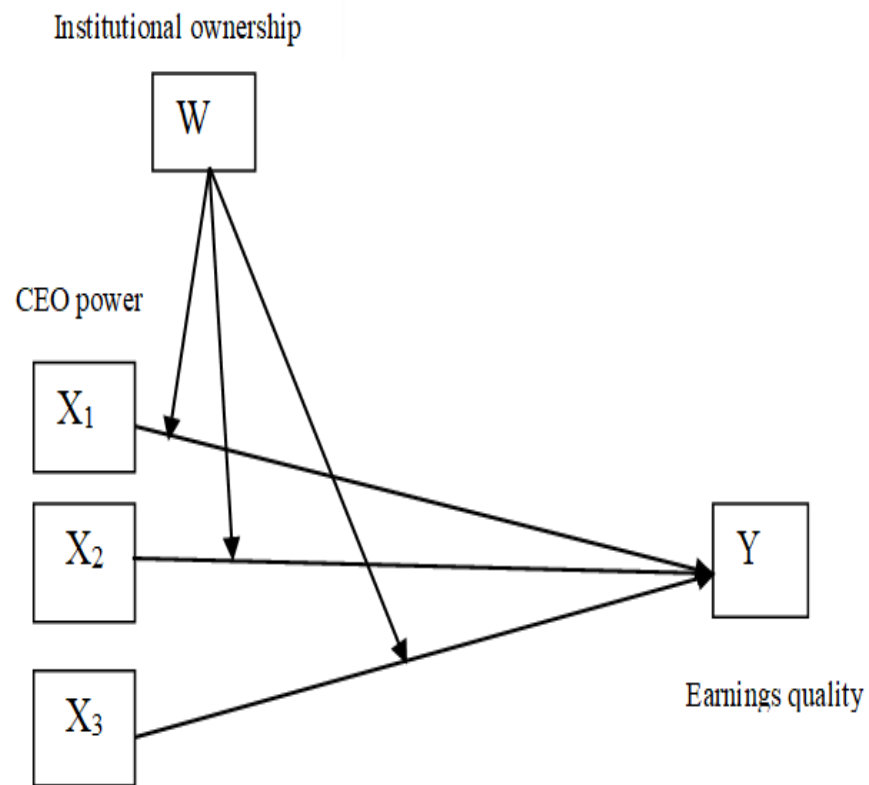


Figure 3.1 Conditional Process Model

Source: Hayes (2018)

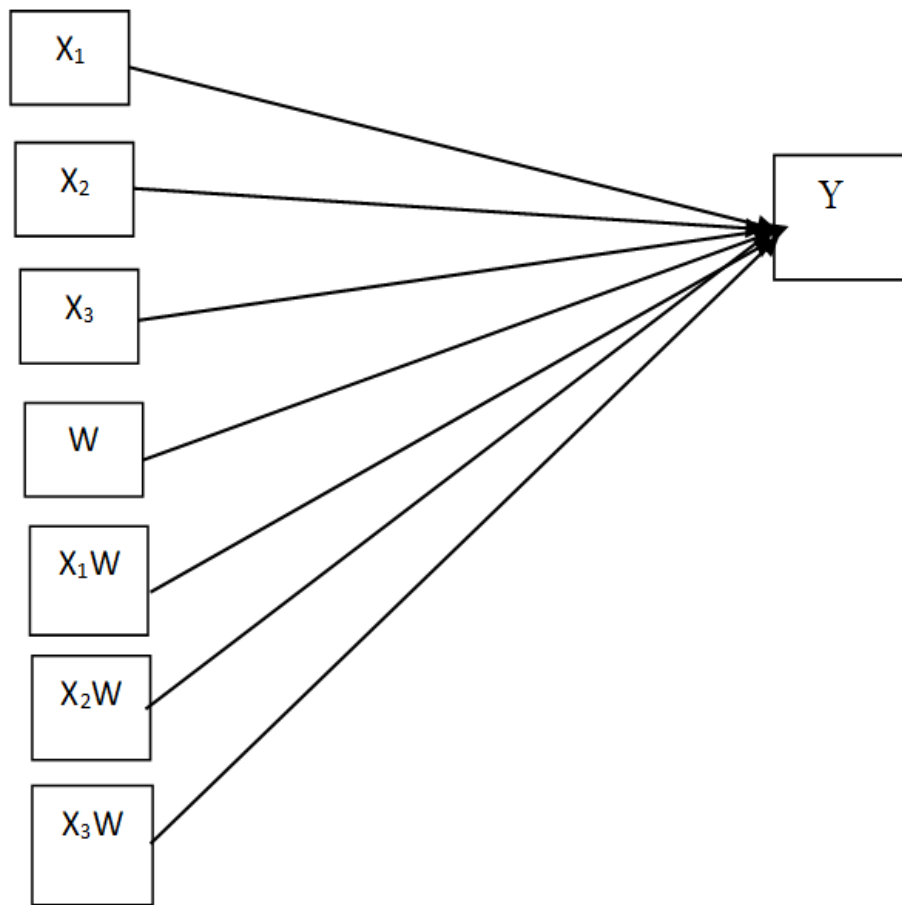


Figure 3.2 Statistical diagram for moderating analysis

Source: Hayes (2018)

$$Y = i_y + c_1'x_1 + c_2'x_2 + c_3'x_3 + c_4'w + c_5'x_1w + c_6'x_2w + c_7'x_3w + e_y$$

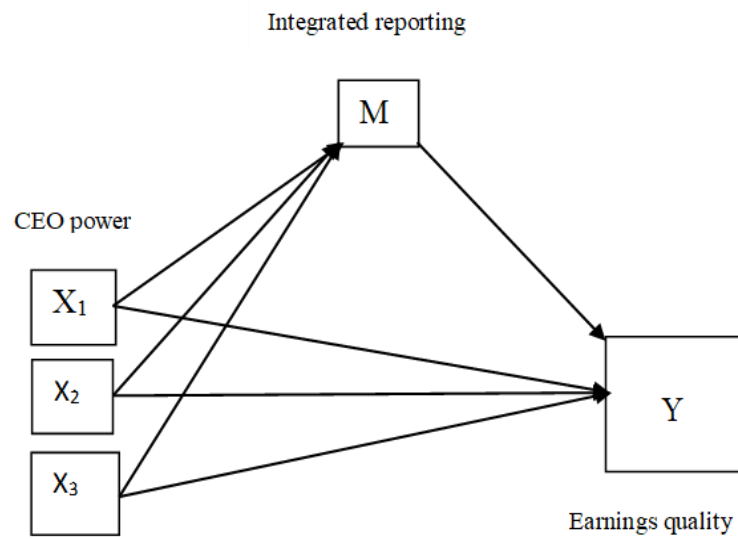


Figure 3.3 Mediation: Conditional process model 2

Source: Hayes (2018)

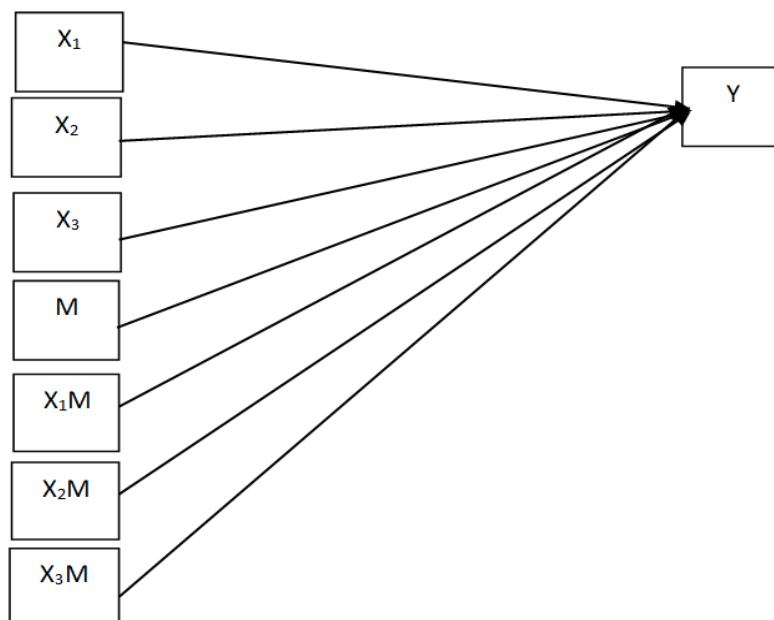


Figure 3.4 Statistical diagram for mediation

Source: Hayes (2018)

$$Y = i_y + c_1X_1 + c_2X_2 + c_3X_3 + c_4m + c_5X_1m + c_6X_2m + c_7X_3m + e_y$$

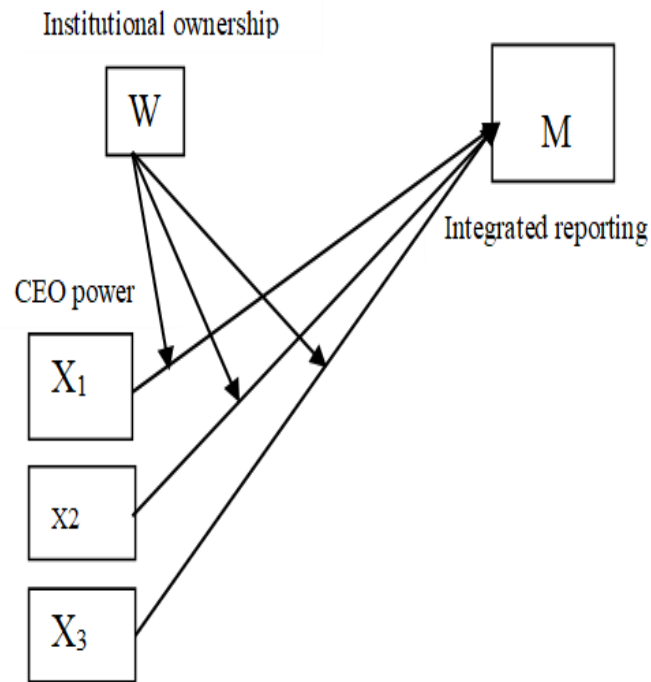


Figure 3.5 Conditional process model 3

Source: Hayes (2018)

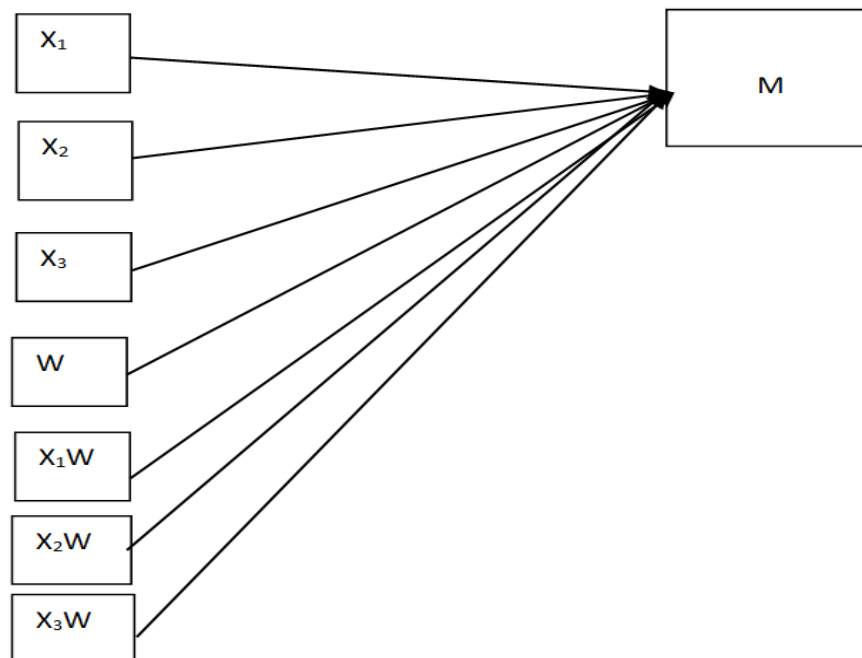


Figure 3.6 Statistical Diagram

Source: Hayes (2018)

$$m = i_m + a_1 x_1 + a_2 x_2 + a_3 x_3 + a_4 w + a_5 x_1 w + a_6 x_2 w + a_7 x_3 w + e_m$$

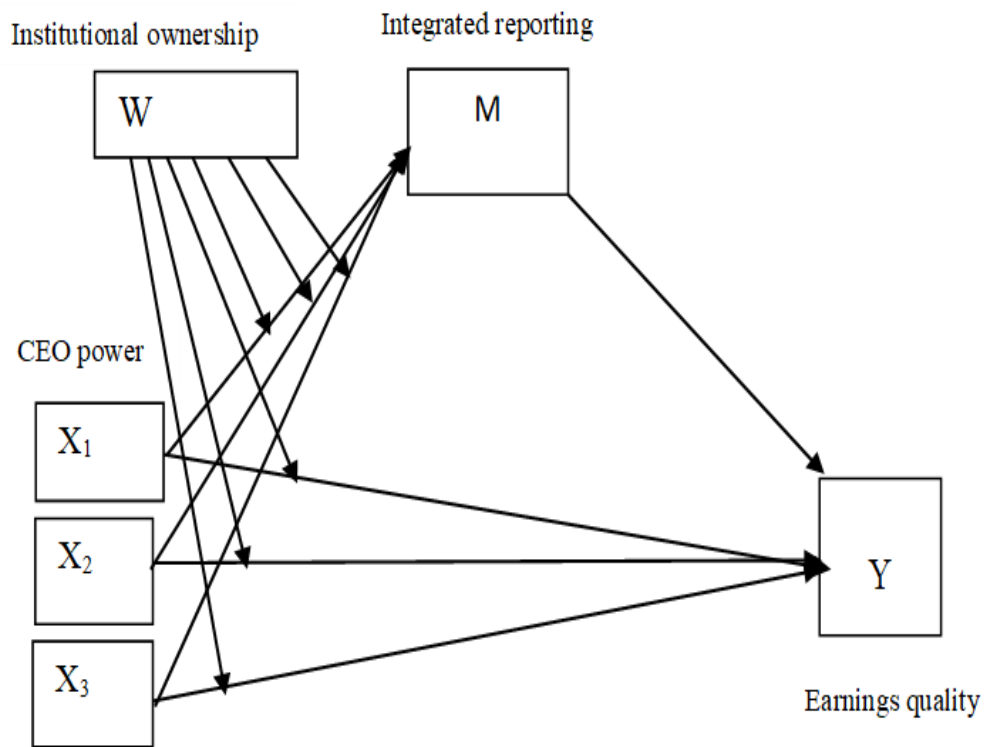


Figure 3.7 Mediated moderation diagram

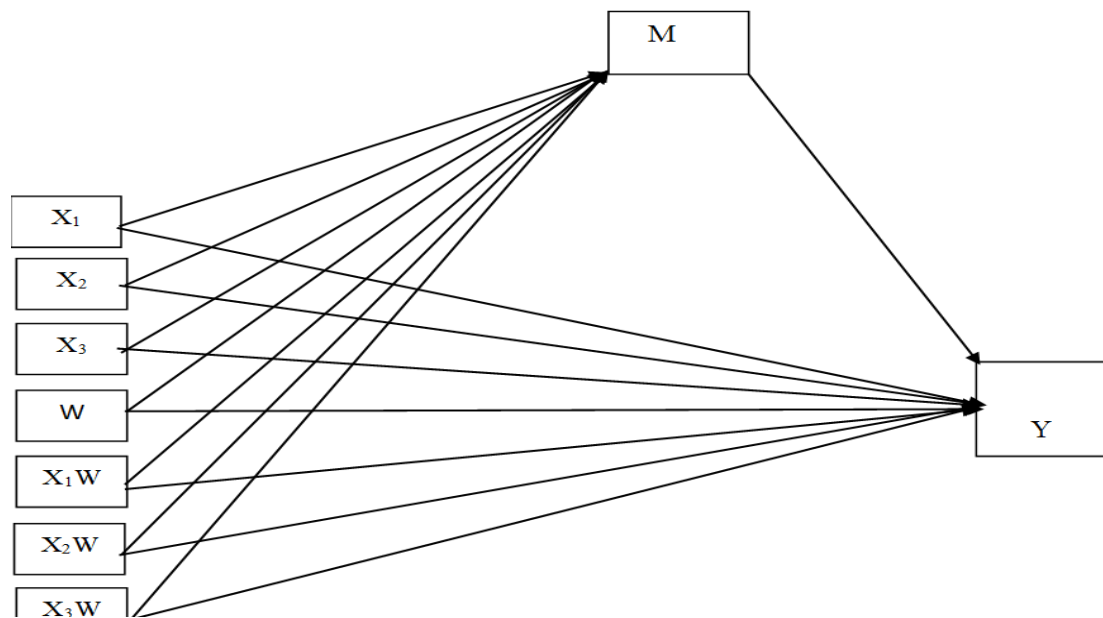


Figure 3.8 A statistical diagram for the mediated moderated

The equations, one for the mediator (M) and one for the outcome (Y) as below.

$$m = i_m + a_1x_1 + a_2x_2 + a_3x_3 + a_4w + a_5x_1w + a_6x_2w + a_7x_3w + e_m$$

$$Y = i_y + c'_1 x_1 + c'_2 x_2 + c'_3 x_3 + c'_4 w + c'_5 x_1 w + c'_6 x_2 w + c'_7 x_3 w + bm + e_y$$

Where;

X₁ – CEO structural power - IV

X₂ - CEO ownership power - IV

X₃ - CEO expert power – IV

Y – Earnings quality – dependent variable

W –Institutional ownership - moderator

M – Integrated reporting – mediator

3.8 Model Specification for Moderated Mediation

The study used panel data from 2013 to 2021. Hypotheses were tested using multiple regression analysis. The Hausman specification test was employed to determine the suitability of choice between fixed-effect regression and random-effect regression, as a basis for explaining the relationship between the predictor variable and dependent variable. The study employed the multiple regression model (Baron & Kenny, 1986) to test the direct, moderating, and mediating effects. The hypotheses were tested using a series of multiple linear regression analyses as:

Ho: The model is fit for moderated mediation

Ha: The model is not fit for moderated mediation

The model specifications and the regression equations for panel data analysis were applied as shown below.

- (i) First, to isolate the effect of the independent variables on the dependent variable, the study controlled for several variables as suggested by empirical literature.

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \varepsilon_{it}$$

Model 1

Then, the study tested for the effect of the various sub-constructs of the independent variable on the dependent variable, while incorporating the control variables into the model as shown below:

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \varepsilon_{it}$$

- (ii) Stepwise moderating effect of institutional ownership on the relationship between CEO power and earnings quality, which is bringing the moderator first, then one aspect of CEO power at a time - structural power, ownership power, and finally expert power - in a stepwise manner as shown below.

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \varepsilon_{it}$$

Model 2

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \beta_{7a} CEOSP * IO_{it} + \varepsilon_{it}$$

Model 3a

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \beta_{7a} CEOSP * IO_{it} + \beta_{7b} CEOOP * IO_{it} + \varepsilon_{it}$$

Model 3b

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \beta_{7a} CEOSP * IO_{it} + \beta_{7b} CEOOP * IO_{it} + \beta_{7c} CEOEP * IO_{it} + \varepsilon_{it}$$

Model 3c

- (iii) Since the study sought to investigate the mediating effect of integrated reporting on the relationship between CEO power and earnings quality, the effect of the predictor variable on the mediating variable will be tested as follows:

$$IR_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \varepsilon_{it}$$

According to Baron and Kenny (1986), a mediating effect is established by regressing the dependent variable against the mediating variable while controlling for the independent variables.

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IR_{it} + \varepsilon_{it}$$

- (iv) Institutional ownership's stepwise moderating effect on the relationship between CEO power and integrated reporting, which is bringing the moderator first, then one aspect of CEO power at a time - structural power, ownership power, and finally expert power - in a stepwise manner as shown below:

$$\hat{IR}_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \varepsilon_{it}$$

Model 4

$$\hat{IR}_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \beta_{7a} CEOSP_{it} * IO_{it} + \varepsilon_{it}$$

Model 5a

$$\hat{IR}_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \beta_{7a} CEOSP_{it} * IO_{it} + \beta_{7b} CEOOP_{it} * IO_{it} + \varepsilon_{it}$$

Model 5b

$$\hat{IR}_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 IO_{it} + \beta_{7a} CEOSP_{it} * IO_{it} + \beta_{7b} CEOOP_{it} * IO_{it} + \beta_{7c} CEOEP_{it} * IO_{it} + \varepsilon_{it}$$

Model 5c

- (v) The moderating effect of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting was determined.

(vi) Then the study went on to multiply the coefficient of path b with the coefficient of each moderated dimension of CEO power (CEOSP, CEOOP & CEOEP - path $\hat{a}$) to determine the moderated mediation. Finally, the Sobel test calculator was used to determine the significance of the moderated mediation.

$$EQ_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 CEOSP_{it} + \beta_5 CEOOP_{it} + \beta_6 CEOEP_{it} + \beta_7 \hat{IR}_{it} + \varepsilon_{it}$$

Where;

EQ	Earnings quality
FL	Firm Leverage
FA	Firm Age
FS	Firm Size
CEOSP	CEO structural power
CEOOP	CEO ownership power
CEOEP	CEO expert power
IO	Institutional ownership
IR	Integrated reporting
$\beta_0, \dots, \beta_{7c}$	Coefficients of the equations
ε	Error term
t	Time
i	Firm

The research hypotheses were tested at a significance level of 0.05, where a resulting p-value of less than 0.05 rejects the null hypothesis, meaning the effect is statistically significant, whereas a p-value greater than 0.05 means that the effect between the study variables was insignificant.

3.9 Data Analysis and Presentation

Data processing started with data entry, cleaning, and coding. Both descriptive and inferential statistics were used to analyze data in this study. Descriptive statistics are

brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. Descriptive statistics was divided into measures of central tendency and measures of variability (spread). Measures of central tendency include the mean, standard deviation, minimum and maximum variables.

3.10 Assumption of Multiple Linear Regression and Diagnostic Tests

Regression models have several assumptions that must hold before data analysis. These assumptions include linearity, normality, unit root test, autocorrelation, multicollinearity, and homoscedasticity (Hayes, 2018). Therefore the study tested for linearity, normality, unit root test, autocorrelation, multicollinearity, and homoscedasticity assumptions.

3.10.1 Multicollinearity

Multicollinearity indicates the presence of a linear relationship between two or more explanatory variables. Murray (2006), asserts that multicollinearity makes it hard to differentiate the individual effects of the explanatory variables and regression estimators may be biased in that they tend to have huge variances. Additionally, if there is a perfect linear relationship among the explanatory variables, the approximations for a regression model can-not be exceptionally calculated. The possible existence of multicollinearity is established based on the correlation matrix including all the independent and control variables. Both Pearson and Spearman's rank correlation matrices were done to confirm if the correlation coefficients are less than 0.8, the limit or cut-off correlation percentage commonly suggested by prior studies after which multicollinearity is likely to exist (Gujarati, 2003). The problem of multicollinearity occurs when the relative movements of two or more independent variables match. The standard Ordinary Least Squares (OLS) estimates become

unable to distinguish between the variables. Given that many other independent variables in this study may have a prior possibility of multicollinearity, Variance Inflation Factors (VIF) were tested after each standard OLS regression to examine the level of correlation between the variables.

To identify any possible problem of multicollinearity, two approaches were used; tolerance test and Variance Inflation Factor (VIF). Under Tolerance and Variance Inflation Factor (VIF) multicollinearity is present if tolerance is less than 0.1 and the VIF value is higher than 10 (Gujarati 2012; Nor, Shanab & Pearson, 2008).

$$VIF = \frac{1}{1 - R^2}$$

Where:

R^2 : R squared

Tolerance: $1 / VIF$

The diagnostic test was conducted to find out whether the independent variables were related to each other instead of being related to the criterion variable. However, for enhancement of regression validity, the multicollinearity test was performed as below:

Ho: data contains no multicollinearity

Ha: data contains multicollinearity

3.10.2 Heteroskedasticity

The problem of heteroskedasticity occurs when the residuals of the regression are heteroskedastic. That is, the variance of residuals is not constant for all observations. In such a case the standard OLS estimators no longer produce minimum variance. The standard error of the coefficients gives inaccurate estimates. In the presence of heteroskedasticity, the estimated parameters might remain consistent but inefficient.

In order to test for heteroskedasticity the study performed Breusch Pagan/Cook-Weisberg (1979) test. If the test statistic has a p-value below an appropriate threshold ($p < 0.05$) then the null hypothesis of homoskedasticity is rejected and heteroskedasticity assumed (that is, if the significance level of f-statistics is not significant at a 5% error level, homogeneity of variance is confirmed and heteroskedasticity of error terms is rejected.).

The null hypothesis stated that the variance of the disturbance terms is homoscedastic meaning that the variance of the error terms was constant. The hypotheses to be tested were:

Ho: Error variance is homogeneous

Ha: Error variance is not homogeneous

3.10.3 Autocorrelation

Brooks (2010), found that the fundamental assumption of the Linear Regression Model is that the covariance between the error terms over time is equal to zero, or that the error terms are not correlated with each other. If, however, the error terms are correlated it creates the problem of autocorrelation or serial correlation, which leads to making the standard error biased. Hence, the standard OLS estimators no longer remain the minimum variance ones. This follows that a diagnostic test was required to check for the presence of serial correlation after each standard OLS regression of the analysis. With the analysis of a long time series of 9 years, there may be a prior possibility of autocorrelation. To confirm the presence of autocorrelation a formal statistical test was required to apply. Tests such as Durbin-Watson, Breusch-Godfrey, and Wooldridge are the simplest and most commonly used tests in time series analysis in order to detect autocorrelation. Wooldridge statistic test was used in testing first-

order correlation in this study. The basis for determining the violation of this assumption was seen from Prob > F. If the value is lower than 0.05 then there is a violation of this assumption.

Ho: There is no serial correlation of any order

Ha: There is serial correlation

3.10.4 Normality Test

Regression analysis assumes a normal distribution of data. The study performed the Shapiro-Wilk test for normality assumption. The null hypothesis (Ho) for this test states that the data follows a normal distribution while the alternative hypothesis (Ha) states that the data does not follow a normal distribution. The normality assumption was indicated by checking on the p-value against a significance level of 0.05. If the resulting p-value is more than the threshold, then the null hypothesis is not rejected meaning the data is normally distributed. The hypothesis for the test is:

Ho: Data distribution is normal

Ha: Data distribution is not normal

3.10.5 Unit Root Test

The study used panel data thus, there was a need to determine whether the research variables were stationary or non-stationary. Whenever there is stationarity, a series of finite variance and uniform oscillations from the mean can be observed (Baltangi, 2005). Therefore, there was a need to test whether the variables have a uniform mean and variance across time variation. It is possible to have deceptive inferences if the information that was collected will not be stationary and regression models gained may be spurious or affected by uneven regression problems (Nkoro & Uko, 2016). Therefore this study conducted a unit root test to check for stationarity using Harris-

Tzavalis, Levin-Lin-Chu, and Breitung. Time series data consisted of observations that were considered to be random variables that were described by some stochastic processes. Time series is only possible where data is stationary. This means the data must have statistical properties (mean, variance, and covariance) that never vary with time. Hence, it is important that the study first test a time series to see if it is stationary or not (Dwivedi and Subba, 2011). The hypotheses are formatted as:

H₀: Panel data contains unit root [non-stationary].

H_a: Panel data is stationary.

If the p-values will be below the conventional significance levels of 0.05 then it will imply that all variables are stationary and robust regression models will be fitted without lags (at levels).

3.10.6 Random and Fixed Effects

A panel data framework was used to test the hypotheses. Hsiao (2014), noted the advantages of the panel data: it provides more degrees of freedom, increases variations in the data and thereby reduces the chances of multicollinearity, and makes it possible to control for fixed effects, panel data has the strength of accepting more observations hence increases the degrees of freedom. In addition, it reduces the problem of collinearity of regressors and modeling flexibility of behavior differences within and between countries and/or groups or institutions (Hsiao, 2007).

The panel data was analyzed using a fixed effect model and random effects model. The fixed effects model is used when controlling for omitted variables that differ between individuals but are constant over time. If some omitted variables might be constant over time but vary between individuals, and others might be fixed between individuals but vary over time, then the random effects model was of help in taking

the two types into account. The random effects model would be appropriate if data are representative of a sample rather than the entire population because the individual effect term can be a random outcome rather than a fixed parameter.

Lee and Thompson (2008), pointed out three tests that can be run to compare the usefulness of the models; First, fixed effects were tested by the F test and the null hypothesis of all individual effects terms except one and zero will be rejected at 0.1% significance level. This will suggest that the fixed effects model is better than the pooled OLS model. Second, random effects were examined by the Lagrange multiplier test and the null hypothesis cross-sectional variance components at zero was rejected at a 0.1% significance level.

3.10.7 Hausman Test

Hausman test was conducted to decide whether the fixed effect or the random effect is the appropriate model to explain the relationship between variables. The null hypothesis is that the random effect model is more suitable. If the null hypothesis will be rejected, then the fixed effect model was used (Greene, 2008). The null hypothesis was that there is no significant correlation between the individual effects and the regressors. The null hypothesis was to be rejected if the probability obtained was to be less than 5%. Again, if the test value of Chi-square was to be higher than the critical value, the null hypothesis was to be rejected and the fixed effect was to be a better estimation method. The study hypotheses were:

Ho: Random effect model is appropriate

Ha: Fixed effect model is appropriate

Decision criteria: Reject H_0 if the p-values obtained are less than the level of significance of 0.05. Meaning that the fixed effect model is the appropriate model to explain the relationship between the variables.

3.11 Testing for Mediation

A mediator is defined as a variable that explains the relationship between a predictor and an outcome (Baron & Kenny, 1986). It's the mechanism through which a predictor influences an outcome variable. Baron and Kenny (1986), Judd and Kenny (1981), and James and Brett (1984) discussed assumptions for mediation to occur as:

First, to show that the predictor variable and outcome variable relationship exist. The study used earnings quality as the criterion variable in a regression equation and CEO power as a predictor to estimate and test path 'c' in the conceptual framework. This step was used to determine if there is an effect that may be mediated.

Second to show that the predictor variable is correlated with the mediator. The study used integrated reporting as the criterion variable in the regression equation and CEO power as a predictor to estimate and test path 'a' as shown in the conceptual framework. This step essentially involved treating the mediator as if it were an outcome variable.

Third, show that the mediator affects the outcome variable. The study used earnings quality as the criterion variable in a regression equation and integrated reporting as predictors while controlling for CEO power to estimate and test path 'b'. It is not sufficient just to correlate the mediator with the outcome because the mediator and the outcome may be correlated because they are both caused by the causal variable of CEO power. Thus, the causal variable must be controlled in establishing the effect of the mediator on the outcome.

Fourth to establish that integrated reporting mediates the CEO power and earnings quality relationship, the effect of CEO power on earnings quality controlling for integrated reporting (path b) should be zero.

If all four of these steps are met, then the data are consistent with the hypothesis that integrated reporting completely mediates the CEO power and earnings quality relationship, and if the first three steps are met but the Step 4 is not, then partial mediation is indicated. To determine the significance of the mediation, the study multiplied the beta coefficient of the path 'a' and the beta coefficient of the mediator in path 'b' and the significance of the product was tested using the Hayes and Preacher Sobel test calculator.

3.12 Testing for Moderation Mediation

The study used the Sobel test and Goodman test calculator to test for the significance of the moderation mediation after determining the coefficients of the variables. The coefficient of the variables were determined by multiplying the coefficient of the moderated CEO power by the coefficient of the Integrated reporting output of the regression results of earnings quality on Institutional ownership, CEO power, and integrated reporting. Then the results were inserted into the Sobel and Goodman test calculator to provide the significance. The Formulae for the tests were drawn from MacKinnon and Dwyer (1993) and MacKinnon, Warsi and Dwyer (1995) as shown below:

Sobel test equation

$$z\text{-value} = a*b/\text{SQRT}(b^2*sa^2 + a^2*sb^2)$$

Goodman test equation

$$z\text{-value} = a*b/\text{SQRT}(b^2*sa^2 + a^2*sb^2 - sa^2*sb^2)$$

3.13 Ethical Considerations

Ethical considerations in research are a set of principles that guide the research designs and practices. Scientists and researchers must always adhere to a certain code of conduct when collecting data from people. These considerations work to; protect the rights of research, and participants, enhance research validity and maintain scientific or academic integrity

The study followed all the required procedures. This included getting approval from the University in order to proceed to the field and collect research data. Any other ethical issues like confidentiality were not applicable in this study because the data used was secondary.

The study focused on firms that are listed in East Africa Securities Exchange. These firms publish their financial statements publically for the investors' and shareholders' analysis, therefore the researcher was able to source the data from here. Consent was permitted by the National Commission for Science, Technology, and Innovation (NACOSTI)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.0 Overview

Data preparation, data description, descriptive statistics, diagnostic tests, assumptions tests, correlation analysis, hypothesis testing, mediation results, moderation results, and moderation mediation results are all included in the findings

4.1 Descriptive Statistics of the Study Variables

The descriptive statistics for the independent, dependent, moderator, mediator, and control variables are presented in Table 4.1. The findings indicate that the quality of earnings was satisfactory to the tune of 52.3%, with a mean (median) of (-0.523). This is consistent with prior research (Chen & Zhang, 2014; Ali & Zhang, 2015; Gunny, 2010). The minimum earning quality (-3.738), and the maximum (2.447). Positive values signify earnings manipulation, while negative values denote high-quality earnings. Based on the mean, discretionary accrual of -0.523 means that the companies manage earnings downwards, which might be due to robust internal controls put in place by large companies as opposed to smaller companies that would not be able to afford to pay the cost of doing so. This is consistent with the findings of Ball & Foster (1982), who highlighted that the size of the organization was positively correlated with the quality of earnings since large organizations typically incur fixed costs to maintain internal control systems throughout the compilation of financial statements. The average deviation of 0.760 demonstrates a significant difference in earning quality signifying that firms considered in the study engage in different level of earning manipulation. This may be caused by lack of consistency, persistence, and fluctuation observed in reported earnings (Bellovary & Don 2005; Gissel, Giacomino & Akers 2005).

The average CEO structural power as determined by board independence was 0.634 (with a maximum of 1 and a minimum of 0 as well as a standard deviation of 0.482). The amount of board independence was calculated by dividing the number of independent directors by the total number of board members, indicating that generally listed companies have board independence hence less CEO structural power. CEO ownership power, as determined by whether or not the CEO owned shares in the company, had a mean of 0.351 (with a maximum value of 1 and a minimum value of 0 and a standard deviation of 0.478). This demonstrates that, on average, the CEOs of the listed companies own stock in the business. The average level of expertise power as determined by the CEO's tenure and financial expertise 1.025 (with a maximum of 2 and a minimum of 0 and a standard deviation of 0.650). This reveals that companies usually have financial acumen.

The study used the content element index of the IIRC framework with 38 items and 74 scores it measured integrated reporting at a mean of 0.422 with a minimum score of 0.164, a maximum score of 0.680 and a standard deviation of 0.135. This demonstrates that the implementation of integrated reporting has not yet been valued fully by the majority of firms under study.

The Institutional ownership had a mean of 0.670, a maximum of 0.998 to 0.014, and a standard deviation of 0.213. indicating that the institutional investors on average, hold a percentage of shares in the listed firms in East Africa.

The control variables; firm leverage had a mean of 0.851 (maximum = 35.305, minimum = 0.001, and standard deviation = 1.706); firm age with a mean of 1.352 (maximum = 2.233, minimum = 0.000 and standard deviation = 0.497) and firm size

had a mean of 7.605 (maximum = 10.694, minimum = 4,701 and standard deviation = 1.0702).

Table 4.1 Descriptive Statistics of the study variables

Variable	Obs	Mean	Std. Dev.	Min	Max
DA	702	-.5232402	.7602425	-3.738033	2.446745
CEOEP	702	1.025568	.6501090	0.000000	2.000000
CEOSP	702	.6339031	.4820799	0.000000	1.000000
CEOOP	702	.3510029	.4776261	0.000000	1.000000
IR	702	.4221396	.1353862	.1643535	.6795106
IO	702	.6696924	.2126657	.0139000	.9983500
FA	702	1.352456	.4967990	0.000000	2.232996
FL	702	.8506152	1.706459	.0006550	35.30470
FS	702	7.605087	1.070191	4.700723	10.69358

Source: Author (2023)

The descriptive statistics of the study reveal the existence of earnings manipulation (mean = -0.523) and a standard deviation of 0.760 indicating a lot of variation from the mean, meaning that firms manipulate earnings at different levels. Structural power had a significant variation of 0.482, with a mean of 0.634. The mean of 0.634 indicates the independence of the board, hence possible control over the powers of the CEO. Compared to non-independent directors, independent directors have a greater ability to monitor the company's operations, and because they are external parties, they have no reason to be afraid. A standard deviation of 0.482 shows a small variation of structural power from the mean.

CEO ownership power is influenced to some extent by the number of shares the CEO owns in the company, as seen by the ownership power's mean of 0.351 and standard deviation of 0.477. The mean value demonstrates that the CEO owns less than the average of shares in a company and the number of shares held are not far from the mean amount as shown in the standard deviation.

CEO expert power has a mean of 1.203 and a standard deviation of 0.650. indicating that CEO expert power is above average and the variation are not far from the mean.

The average and standard deviation for institutional ownership was 0.670 and 0.213, respectively. Consequently, it can be concluded that institutions hold more than 67% of the shares among the selected firms. This may be as a result of their greater financial resources than those of other investors, which enable them to exercise greater control over the majority of stocks.

A mean of 0.422 and a standard deviation of 0.135 for integrated reporting were reported. Meaning that 42% of the listed companies have integrated reporting. An integrated report is not mandated by law in any way. The only requirement of the listing regulations is that a listed firm or a firm applying to be listed must produce audited financial statements. There is a likelihood that firms may not fully implement IR given that it is voluntary in countries in East Africa. According to earlier research, including Ullah and Rahman (2015), volunteer reporting is unlikely to produce sufficient levels of reporting in the absence of regulation (Bananuka, Tumwebaze, & Orobia, 2019). This is supported by research by Churet & Eccles (2014), Suttipun (2017), and Nurkumalasari, Restuningdiah, and Sidharta (2019), which claimed that integrated reporting had no impact on company value and that stakeholders did not require it.

4.2 Inferential Analysis

The study conceptualized that the CEO power dimensions of structural power, ownership power, and expertise power had a direct effect on earnings quality, an indirect effect; moderated by institutional ownership, and mediated by integrated reporting. The hierarchical regression analysis approach was employed to examine

whether institutional ownership was indeed a moderator and integrated reporting a mediator to the relationship between CEO power and earnings quality. Hierarchical regression has previously been used in moderation models (Baron & Kenny, 1986). To obtain the composite response scores for each variable, the data was first turned into logs to normalize the data. Before doing inferential analysis, data measuring a specific variable were normalized using logarithms.

4.2.1 Assumption of Linear Regression and Diagnostic Tests

This study employed linear regression, which must meet the criteria for best linear unbiased estimates. Multiple regression analysis has been shown to work under several conditions. Before deciding which panel regression model to apply and eliminating regression difficulties, these assumptions were checked following Tabachnick and Fidell's (2013) suggestions. The converted data were used to put the assumptions to the test. Normality, multicollinearity, unit root/stationarity, heteroskedasticity, and autocorrelation were all tested assumptions (Hair *et al.*, 2010; Cohen, *et al.*, 2003). A model specification test was also performed to see whether the model was misspecified or had omitted variables.

4.2.2 Normality Tests

Data normality tests were performed as a requirement for undertaking regression analysis (Cramer & Howitt, 2004) Shapiro - Wilk, and Shapiro - Francia tests to validate the normalcy assumptions, and the hypothesis was evaluated at a 0.05 significant level. According to Yap and Sim (2011), the Shapiro-Walk test is the most powerful test for normalcy, but Mbah and Paothong (2015), claim that the Shapiro-Francia normality test is the strongest statistical test for identifying deviations from normality. As a result, the Shapiro-Wilk test was used to check the normality assumptions. As shown in Table 4.2, the p-values of the tests also show a normal

distribution since the p-value (0.643) was greater than 0.05 meaning the null hypothesis of normality cannot be rejected. These tests were also based on the assumption that:

Ho: The data follows a normal distribution

Ha: The data does not follow a normal distribution

Table 4.2 Shapiro – Wilk normality test for normality

Shapiro-Wilk test for normal data					
Variable	Obs W	W	V z	z	Prob>z
Residuals	702	0.982	0.842	-0.368	0.643

Source: Author (2023)

4.2.3 Multicollinearity test

Multicollinearity is a situation in which the independent variables have a strong correlation. It happens in multiple models when there is a high correlation between the predictor variables, requiring evaluations of the regression coefficients. This produces strange results when attempting to determine the extent to which the independent factors explain changes in the dependent variable (Creswell, 2014). Multicollinearity occurs when one or more independent variables strongly correlate with each other (correlation coefficients above 0.8 - Garson, 2013; Gujarati, 2012), resulting in unreliable estimates of the dependent variable in regression analysis, which means decreasing reliability quality and misleading results (Hair *et al.*, 2010). Other negative implications of multicollinearity include inflated regression coefficient estimators (β_1) and inflated standard errors, as well as contradictory statistical significance levels associated with beta weights (negative or positive magnitudes of β_1). The diagnostic test was conducted to find out whether the independent variables were related to each other instead of being related to the criterion variable.

The Variance Inflation Factor (VIF) test results determined the level of correlation between the predictor variable and estimated the inflated variance due to linear dependence with other explanatory variables. The principle is that VIFs of 10 or greater indicate the presence of multicollinearity in the study (Newbert, 2008). The variance inflation factors (VIF) in Table 4.3 varied from 1.05 to 1.69, suggesting that all of the variance inflation factors were lower than 10, indicating that the model was not multicollinear. Tabachnick and Fidells (2013) suggest a tolerance value of 0.10 as the minimal amount of tolerance. Table 4.3 demonstrates that all of the variables' tolerance levels were greater than 0.10, eliminating multicollinearity between the study's exogenous variables.

Table 4.3 Tolerance and VIF test

Variable	VIF	1/VIF (Tolerance)
CEOSP	1.69	0.592765
FA	1.43	0.699889
CEOEP	1.37	0.729142
IR	1.36	0.734752
CEOOP	1.33	0.750920
FS	1.30	0.771585
IO	1.20	0.834979
FL	1.05	0.955439
Mean VIF	1.34	

Source: Author (2023)

4.2.4 Stationarity/ Unit root test

A key assumption of regression analysis is that the time series data is stationary. A time series data is said to be stationary if its mean and variance are constant over time (Gujarati, 2003). This series can be of stochastic nature (randomly determined) or a deterministic nature (displaying a trend). In contrast, a non-stationary time series or a random walk refers to a data series that does not have a constant mean, variance, and auto-covariance at various lags over time (Hossain & Hossain, 2015).

The study used three tests (Harris-Tzavalis, Levin-Lin-Chu & Breitung) to determine whether each variable was stationary. The Harris - Tzavalis unit root test was developed by Harris and Tzavalis (1999). The hypothesis was tested at a 5% significance level, where a p-value less than 0.05 rejects the null hypothesis, implying that the panel data is stationary, as shown below.

Table 4.4's findings demonstrate that there is no unit root in our data. This is due to the fact that all of the p-values are far lower than the usual significance threshold of 0.05. This meant that all variables were stationary and that a reliable regression model could be fitted without lags (at levels).

Table 4.4 Unit Root / Stationarity test

Variable	Harris-Tzavalis	Levin-Lin-Chu	Breitung
DA	-16.774	-53.579	-4.079
ρ -value	0.000	0.000	0.000
CEOSP	-18.951	-22.041	-4.238
ρ -value	0.000	0.000	0.002
CEOOP	-4.785	-20.851	-2.715
ρ -value	0.000	0.000	0.000
CEOEP	-6.141	-42.744	-3.201
ρ -value	0.000	0.002	0.004
IR	-15.141	-15.846	-3.116
ρ -value	0.020	0.000	0.001
IO	-9.975	-40.598	-4.232
ρ -value	0.001	0.000	0.000
FL	-11.131	-16.022	-2.955
ρ -value	0.00	0.000	0.000
FS	-2.256	-22.058	-4.095
ρ -value	0.000	0.004	0.020
FA	-15.572	-13.401	-7.567
ρ -value	0.007	0.000	0.000

Source: Author (2023)

4.2.5 Heteroskedasticity test

The heteroskedasticity problem occurs in data when the variance of the residuals is not constant across all observations. This could be due to sub-population differences, an incorrectly specified model, other intervention effects in the data, or the omission of critical variables from the model. The study used the Breusch-Pagan and Cook-Weisberg tests to test heteroskedasticity. If the p-value of the test statistic is less than a certain threshold ($p < 0.05$), the null hypothesis of homoskedasticity is rejected, and heteroskedasticity is assumed (that is, if the significance level of f-statistics is not significant in a 5 percent error level, homogeneity of variance is confirmed and heteroskedasticity of error terms are rejected). The null hypothesis asserts that the panel data is homoskedastic (has constant variance), whereas the alternative hypothesis asserts that the data is heteroskedastic (has variable variance).

Table 4.5's findings demonstrate that Chi2 (1) was 1.39, with a p-value of 0.2386 indicating that the null hypothesis cannot be rejected and that the assumption of constant variance was not breached, confirming that there is no heteroscedasticity in the data.

Table 4.5 Heteroskedasticity test - Breusch Pagan / Cook-Weisberg test

Ho:	Constant variance		
Variables:	fitted values of log DA		
Chi ² (1)		=	1.39
Prob > chi ²		=	0.2386

Source: Author (2023)

4.2.6 Autocorrelation test

The autocorrelation assumption ensures that observation data have no time-to-moment relationship, which is another classical best linear unbiased estimates assumption requirement. The degree of similarity between a given time series and a

lagged version of itself over successive time intervals is represented by autocorrelation. The relationship between a variable's current value and its past values is measured by autocorrelation. Several formal statistical tests are performed to determine the presence of autocorrelation. Wooldridge, Durbin Watson, and Breusch-Godfrey are among them. These are straightforward and widely used tests in time series analysis. However, according to Drukker (2003), the results of the majority of these tests have their own limitations. As a result, Drukker (2003) recommends Wooldridge (2002), which he claims is free of such limitations; additionally, the test can handle unbalanced panel data with and without gaps in the observations. As a result, the Wooldridge test was used to determine whether the model has an autocorrelation problem. Prob > F provides the basis for determining the violation of this assumption. If the value is less than 0.05, then this assumption is violated. The p-value in Table 4.6 is 0.2142, which means that the null hypothesis cannot be rejected at a 5% level of significance. This is because the data lack first-order autocorrelation. The serial correlation was shown not to be problematic, which is in line with the early study by Ntim *et al.*, (2012).

Table 4.6 Autocorrelation - Wooldridge test

Wooldridge test for autocorrelation	in panel data
H0: no first-order autocorrelation	
F(1, 78) = 1.568	
Prob > F = 0.2142	

Source: Author (2023)

4.2.7 Model Specification test – Ramsey RESET test

The Ramsey RESET test was used to test model specification (whether the model is misspecified or omitted variables). The model does not have any omitted variables, which is the null hypothesis. If the p-value is less than 0.05, the null hypothesis would

be rejected. A p-value of 0.2403 was obtained from the results in Table 4.7, hence the null hypothesis cannot be rejected at the 0.05 level of significance. It was determined that the research model is suitable for moderated mediation.

Table 4.7 Ramsey RESET Test (using powers of the fitted values of DA)

Ramsey	RESET test using powers of the fitted values of DA
Ho: the model has no omitted variables	
$F(3, 702) = 1.40$	
Prob > F = 0.2403	

Source: Author (2023)

4.3 Correlation Analysis

Correlation is a statistical measure of association between two variables measured by a coefficient with both a direction and a magnitude, where the magnitude can be positive or negative (Vanderstoep & Johnson, 2009). The coefficient provides information about the strength and direction of the relationship between the variables. Bivariate/pairwise correlations were used as a preliminary to regression analysis. It is argued that before performing a regression analysis, linear associations between variables should be confirmed. According to Gujarati (2003), the coefficient can range between +1 and -1. Where -1 represents a negative association and +1 represents a perfect positive association. To investigate the relationships between the variables, Pearson pairwise correlations were used (Chee, 2013). The coefficients were used to test the multicollinearity assumptions of regression, where a correlation coefficient of 0.8 or greater between the independent variables raises a serious multicollinearity problem (Hair *et al.*, 2006, Sekran, 2003).

Table 4.8 Displays the correlation coefficient values between the variables.

Table 4.8 Results of Pairwise Correlation Matrix

	DA	CEOSP	CEOOP	CEOEP	IR	IO	FL	FS	FA
DA	1.0000								
CEOSP	-0.350*	1.0000							
CEOOP	-0.323*	0.321*	1.0000						
CEOEP	-0.183*	0.142*	0.203*	1.0000					
IR	-0.339*	0.277*	0.476*	0.310*	1.0000				
IO	-0.282*	0.208*	0.108*	0.219*	0.240*	1.0000			
FL	0.118*	0.103*	0.077*	0.088*	-0.121*	-0.016	1.0000		
FS	0.177*	0.321*	0.048	0.212*	-0.116*	0.061	0.196*	1.0000	
FA	0.351*	0.193*	-0.097*	-0.192*	-0.107*	-0.219*	0.127*	0.238*	1.0000

* Correlation is significant at the 0.05 level (2-tailed).

DA-Discretionary accrual, CEOSP- CEO structural power, CEOOP- CEO ownership power, CEOEP-CEO expert Power, IR-Integrated reporting, IO-Institutional ownership, FL-Firm Leverage, FS-Firm Size, FA-Firm Age.

Source: Author (2023)

The results presented in Table 4.8 indicate that there is no multicollinearity problem since all the coefficients were below 0.8. Firm age had the highest association in relation to earnings quality, followed by CEO structural power, then integrated reporting, CEO ownership power, institutional ownership, CEO expertise power, firm size, and lastly firm leverage.

The Pearson correlation results in Table 4.8 indicate that CEO structural power had a negative and significant ($r = -0.350$, $p < 0.05$) association with DA. This means that when the CEO's structural power is controlled by an independent board, the DA reduces hence the high quality of earnings. This is in agreement with the studies of (Coakley & Iliopoulou 2006; Grinstein & Hribar 2004; Badertscher *et al.*, 2010; Eckles & Halek, 2007).

Ownership power ($r=-0.323$, $p< 0.05$) had a negative and significant relationship with DA. These results, therefore, mean that when the CEO holds a percentage of shares in the company, the DA reduces resulting in quality earnings. However, as CEOs'

shareholdings increase, they have a greater incentive to participate in accounting scandals (Sharma & Kuang, 2014). Increased CEO ownership power may therefore encourage CEOs to use discretionary accruals to increase earnings. This is in agreement with Chatterjee and Hambrick, (2010b); Al-Fayoumi, Abuzayed, and Alexander, (2010); Mitani (2010); Kazemiana and Sanusib, (2015), have found that firms with higher CEO ownership are more likely to engage in earnings manipulation.

The correlation results further indicated that expert power ($r = -0.183$, $p < 0.05$) had a negative relationship with DA. Thus, an increase in the number of years the CEO has worked in the firm and their financial expertise reduces earnings manipulation, hence high earnings quality. The results are comparable with those realized by (Jiang, Zhu & Huang 2013) but contrary to that of (Qawasmeh & Azzam 2020).

The association between firm leverage, and DA is positive and significant, indicating that highly leveraged firms are likely not to engage in earnings manipulation. This concurs with findings from Waweru & Riro, 2013, Hassan & Bello, 2013, Alves, 2014, and Jiang *et al.*, (2008). This is contrary to studies by (De Fond & Jambalvo, 1991) who suggested that CEO may participate in the preparation of financial statements by inflating earnings to avoid defaulting on loan agreements and Gopalan and Jayaraman (2012), Liu *et al.*, (2017), Klai & Omri (2011), and Houqe *et al.*, (2012), which found a negative link between firm leverage and earnings quality, Abed *et al.*, (2012) found that this relationship was no statistical significance.

The correlation coefficient of firm age and DA indicate that an older company is more likely to provide high-quality earnings than a younger one. Older CEOs have a better understanding of the rules and regulations that govern their practices. Additionally, the longer a company has been in business, the more likely it is that it has worked to

improve its financial reporting procedures over time (Alsaeed, 2006). As a result, an older corporation is less likely to use earnings manipulation strategies (Bassiouny, 2016).

The coefficient in the correlation matrix showed a positive relationship between firm size and DA implying a negative relationship between firm size and earnings quality, just like Enron was large but produced earnings of worse quality. This is consistent with other investigations like Munzing (2003); Klein (2002); Xiel *et al.*, (2003); Nelson and Devi (2013); Sharma and Kuang, (2014). According to research by Gopalan & Jayaraman (2012), Vasilescu & Milla (2016), Watts and Zimmerman (1990) and Bassiouny, (2016), a company's size has a negative correlation with the quality of its earnings. In contrary, the research by Abed, Al-Attar, and Suwaidan, (2012) and Li, Abeysekera, and Ma, (2014), revealed that firm size had no impact on the quality of earnings.

4.4 Regression Analysis

The study's goal was to investigate if institutional ownership had a moderating effect on the relationship between CEO power and earnings quality as mediated by integrated reporting. To test the direct and moderating effects of the independent and moderating variables on earnings quality, a set of hierarchical regression models were used. In the first model, the dependent variable and the control variables were hierarchically regressed, while in the second model regressed the dependent (EQ), controls (firm leverage, firm age & firm size), independent (CEOSP, CEOOP & CEOEP), and then the moderator (IO). Model 3a regressed the interaction of the IO & CEOSP into model 2, then 3b regressed the interaction of IO and CEOOP into model 3a and finally model 3c the interaction of IO and CEOEP into model 3b in that order. For moderated mediation to occur, the interaction at path 'a' was tested. That is by

first regressing the moderator (IO) with IR in model 4. Then regressing the interactions stepwise in models 5a, 5b, and 5c (for IO & CEOSP, IO & CEOOP, and IO & CEOEP on IR respectively). Then the results in model 5c were multiplied with the results in path b for moderation mediation testing. All models utilized fixed effect models confirmed by Hausman's test, which was used to decide between random and fixed effects. The research hypotheses were tested at a significance level of 0.05, with a p-value less than 0.05 rejecting the null hypothesis.

4.4.1 Control Variables

The first step of the study was to investigate the explanatory power of the control variables (firm leverage, firm age, and firm size) on the dependent variable (earnings quality) as measured by discretionary accrual. Table 4.9 shows the regression results for control variables.

The study's findings revealed a significant positive relationship between firm leverage and discretionary accruals ($\beta = 0.2027$, $p < 0.05$), implying that a one-unit increase in firm leverage resulted in a 0.2027 decrease in earnings quality. This is consistent with the findings of (Liu *et al.*, 2017; Klai & Omri, 2011; Houqe *et al.*, 2012), who discovered a negative sign of firm leverage and earnings quality. This is because, in companies with huge debt, CEOs can participate in the financial statement production process to exaggerate earnings in order to avoid breaking loan arrangements. The results, however, contradict those of (Godigbe *et al.*, (2018; Waweru & Riro, 2013; Hassan & Bello, 2013; Alves, 2014; Jiang *et al.*, 2008; Parte-Esteban & Garcf 2014; Vasilescu & Millo, 2016; Lin *et al.*, 2013), who discovered that firm leverage is positively related to earnings quality while Abed *et al.*, (2012), found no association between firm leverage and earnings quality.

Furthermore, the research found a significant positive relationship between firm age and DA ($\beta = .180, \rho < 0.05$), indicating that a one-unit increase in firm age caused a 0.180 increase in DA. This means that older firms manipulate earnings. As a result, the need for its control in the study is valid. This is consistent with the findings of Bassiouny (2016), who discovered that firm age is negatively associated with earnings quality. This could be because older businesses are less likely to manipulate earnings because they are more well-known, have a higher market value, and have a reputation to uphold. They have worked to improve the firm's reputation and image in the marketplace, and they have gained a better understanding of the rules and standards that apply to their professions (Akhtaruddin, 2005; Alsaeed, 2006).

The study's findings revealed a significant positive relationship between firm size and DA ($\beta = 0.8957, \rho < 0.05$), Earnings quality decreased by 0.8957 for every unit increase in firm size. As a result, the requirement for its control in the study was supported. According to the findings, larger companies are likely to manipulate earnings. This concurs with the studies of (Bassiouny, 2016; Gopalan & Jayaraman, 2012; Vasilescu & Milla, 2016) who revealed that the size of a company is negatively associated with earnings quality. Additionally, larger firms have more complicated business activities than small businesses, and therefore they would choose accounting procedures for adjusting results to meet corporate policy (Jensen & Meckling, 1976). Although contrary to other studies Munzing, (2003); Obeng *et al.*, (2020); Klein, (2002); Xiel *et al.*, (2003); Nelson and Devi, (2013); Sharma and Kuang, (2014), whose studies have revealed a significant and positive relationship between firm size and earnings quality. The investigations of (Waweru & Riro, 2013; Chalaki, Didar, & Riahinezhad 2012; Abed, Al-Attar & Suwaidan 2012; Li, Abeysekera & Ma, 2014) showed that size had no effect on earnings quality.

The results of the Hausman test ($\chi^2(2) = 22.86$ & $\text{Prob} > \chi^2 = 0.0000 < 0.05$) as shown in Appendix V supported the use of a fixed effect regression model. This is because the test value of Chi-square (χ^2) is higher than the critical value.

Table 4.9 Regressing results of control variables - Fixed Effect

Fixed-effects (within) regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.0558	Obs per group: min	=	9			
between = 0.0726	Avg	=	9.0			
overall = 0.0685	Max	=	9			
	F(3,611)	=	12.04			
corr(u_i, Xb) = -0.0856	Prob > F	=	0.0000			
DA	Coef.	Std. Err.	T	p>t	[95% Conf. Interval]	
FL	.202655	.0586557	3.45	0.001	.0874638	.3178462
FA	.1796232	.0452036	3.97	0.000	.0908499	.2683965
FS	.8957481	.2196681	4.08	0.000	.464352	1.327144
_cons	-3.255659	.6139648	-5.30	0.000	-4.461396	-2.049921
sigma_u	.64277169					
sigma_e	.35353122					
Rho	.76774747 (fraction of variance due to u_i)					
F test that all u_i=0:	F(77, 611) =	25.43	Prob > F = 0.0000			

Source: Author (2023)

The choice of a fixed effect regression model was supported by the Hausman test results ($\chi^2(2) = 22.86$ & $\text{Prob} > \chi^2 = 0.0000 < 0.05$) in Table 4.10. This is because the Chi-square test score (χ^2) is higher than the significant threshold.

Table 4.10 Regressing results of control variable - Hausman test

	---- Coefficients ----			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
FL	.202655	.1799206	.0227345	.0172949
FA	.1796232	.2115	-.0318768	.0106812
FS	.8957481	.6909831	.204765	.1175657

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 Test: Ho: difference in coefficients not systematic
 $\chi^2(3) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 = 22.86
 Prob>chi2 = 0.0000

Source: Author (2023)

The Hausman test results guided the use of fixed effect to explain the extent to which the control variables (firm leverage, firm age, and firm size) explain the change in the dependent variable (earnings quality). The results indicate that overall, the control variables explain a 5.58% change in earnings quality. The other remaining percentage (94.42%) is explained by other different variables.

Direct effects

The fixed effect regression model was conducted for the effect of CEO structural power (CEOSP), CEO ownership power (CEOOP), CEO expert power (CEOEP), institutional ownership (IO), and integrated reporting (IR) on earnings quality (EQ) while controlling for firm leverage, firm age, and firm size. Direct and indirect hierarchical regression was used to test the study hypothesis.

4.4.2 CEO Power and Earnings Quality

Hypothesis **Ho1**: stated that CEO power has no significant effect on earnings quality. The results of the discretionary accrual on the dimension of CEO power are presented in Table 4. 11.

4.4.2.1.Fixed effect

The fixed effect regression model was conducted for the effect of CEO structural power (CEOSP), CEO ownership power (CEOOP), CEO expert power (CEOEP), institutional ownership (IO), and integrated reporting on earnings quality. Table 4.11 displays the direct effect regression results for the fixed effect model. The findings revealed that CEO power explained a 16.49 percent variation in DA. The findings also show that CEO structural power ($\beta = -.417, \rho < 0.05$) has a negative and significant effect on DA. This means that a one-unit increase in CEO structural power results in a 0.417-unit decrease in DA thus earnings quality. Therefore rejecting **H_{01a}** and the alternative suggested that structural power has a significant effect on earnings quality. CEO ownership power had a negative and significant effect on DA ($\beta = -.2012, \rho < 0.05$). This signifies that a one-unit increase in CEO ownership power results in a 0.2012 unit decrease in DA. Based on the results, **H_{01b}** was rejected, and the concluded that CEO ownership power has a significant effect on earnings quality. CEO Expert power had a significant negative effect on DA ($\beta = -.1760, \rho < 0.05$). This demonstrates that a one-unit increase in CEO expert power results in a 0.1760 unit decrease in DA hence earnings quality. Hence, the null hypothesis **H_{01c}** was rejected and suggested that expert power has a significant effect on DA. Therefore CEO power did have a significant effect on earnings quality.

Table 4.11 Regressing earnings quality on CEO Power- Fixed Effect

Fixed-effects (within) regression	Number of obs	= 702				
Group variable: ID	Number of groups	= 78				
R-sq: within = 0.1649	Obs per group: min	= 9				
between = 0.3333	avg	= 9.0				
overall = 0.2997	max	= 9				
	F(6,606)	= 19.94				
corr(u_i, Xb) = 0.1912	Prob > F	= 0.0000				
DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
CEOSP	-.4172764	.0676242	-6.17	0.000	-.5500826	-.2844702
CEOOP	-.2011636	.0515108	-3.91	0.000	-.302325	-.1000022
CEOEP	-.1759828	.0420561	-4.18	0.000	-.2585762	-.0933894
FL	.1997886	.055463	3.60	0.000	.0908655	.3087117
FA	.1242592	.0431868	2.88	0.004	.0394452	.2090732
FS	.7146141	.210083	3.40	0.001	.302035	1.127193
_cons	-2.185782	.6001168	-3.64	0.000	-3.364343	-1.007221
sigma_u	.55379917					
sigma_e	.33320316					
Rho	.73421212 (fraction of variance due to u_i)					
F test that all u_i=0: F(77, 606) = 20.65 Prob > F = 0.0000						
Source: Author (2023)						

Source: Author (2023)

4.4.2.2 Random effect

The random effect model estimates the coefficients under the assumption that the individual or group effects are uncorrelated with other independent variables. Table 4.12 displays the direct effect regression results for the random effect model. According to the findings, CEO power explains 16.37 percent of the variation (as measured by the R-squared) in DA among East African listed firms. The findings indicate that CEO structural power has a negative but statistically significant effect on

DA ($\beta = -0.419, \rho < 0.05$). This demonstrates that increasing CEO structural power by one unit results in a 0.419 unit decrease in DA thus earnings quality. Furthermore, the findings show that CEO ownership power ($\beta = -0.226, \rho < 0.05$) has a negative effect on DA. The implication is that increasing one unit of CEO ownership power results in a 0.226 unit increase in earnings quality. Further findings revealed that CEO expert power ($\beta = -0.187, \rho < 0.05$) had a negative but statistically significant effect on DA. A one-unit increase in CEO expert power results in a 0.187-unit decrease in DA hence earnings quality. The null hypothesis **H₀₁** was rejected, and it was concluded that CEO power had a significant effect on earnings quality.

Table 4.12 Regressing earnings quality on CEO Power- Random Effect

Random-effects GLS regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1637	Obs per group: min	=	9			
between = 0.3563	Avg	=	9.0			
overall = 0.3153	Max	=	9			
	Wald chi2(6)	=	158.41			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			
DA	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]	
CEOSP	-.4191725	.0610816	-6.86	0.000	-.5388903	-.2994547
CEOOP	-.2256341	.0496328	-4.55	0.000	-.3229125	-.1283557
CEOEP	-.1873271	.0392311	-4.77	0.000	-.2642186	-.1104355
FL	.2021515	.0525797	3.84	0.000	.0990972	.3052058
FA	.1682962	.0416254	4.04	0.000	.0867120	.2498804
FS	.7089625	.1705019	4.16	0.000	.3747850	1.04314
_cons	-2.186847	.4800763	-4.56	0.000	-3.127779	-1.245914
sigma_u	.49371561					
sigma_e	.33320316					
Rho	.68706094 (fraction of variance due to u_i)					

Source: Author (2023)

4.4.2.3 Hausman Test

Panel data is often examined using either the fixed effect regression model or the random effect regression model, with the choice relying on the findings of the Hausman test. The Hausman test is used to differentiate between fixed and random effects. According to Bepari and Molik (2015), the study employed the Hausman test to assess if a fixed or random effect panel regression is the best model to describe the relationship between variables and which should be used in the research study. The Hausman test comprises two hypotheses: the null hypothesis, which states that the preferred model is random-effect, and the alternative hypothesis, which supports the fixed-effect model (Brooks 2019, Green 2008). The hypothesis for the test is as follows:

Null hypothesis (H_0): Random effect model is appropriate

Alternative (H_a): Fixed effect model is appropriate

If the p-value is smaller than the alpha (0.05), the null hypothesis (preferred model is random-effect) is rejected, and so the alternative hypothesis (fixed-effect model) should not be rejected, according to Hausman (1978). Based on the results in Table 4.13 ($\chi^2(6) = 27.70$ and $\text{Prob} > \chi^2 = 0.0001$ 0.05), the null hypothesis (that the difference in coefficients is systematic) was rejected since the chi-square p-value = 0.0001 was less than 0.05. As a result, the Hausman test results suggest that the fixed effect panel regressions model be used to investigate the relationship between CEO power and earnings quality.

Table 4.13 Hausman Test Results – Direct Effect

	---- Coefficients ----			
	(b) fe	(B) Re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CEOSP	-.4172764	-.4191725	.0018961	.0290183
CEOOP	-.2011636	-.2256341	.0244706	.0137824
CEOEP	-.1759828	-.1873271	.0113443	.0151538
FL	.1997886	.2021515	-.0023629	.01765
FA	.1242592	.1682962	-.0440369	.0115079
FS	.7146141	.7089625	.0056516	.1227354
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha, efficient under Ho; obtained from xtreg				
Test: Ho: difference in coefficients not systematic				
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)				
= 27.70				
Prob>chi2 = 0.0001				

Source: Author (2023)

The results of the fixed effect indicated that CEO structural power has a negative and significant effect on DA ($\beta = -0.417$, $p = 0.0001$). This is supported by other scholars (Alves, 2021; Alves, 2014; Al Azeez, Sukoharsono, & Andayani, 2019; Chi, Hung, & Liu, 2020; Chen, Cheng, & Wang, 2015; Mbir, *et al.*, 2020) who discovered that a structural power has a positive effect on earnings quality.

CEO ownership power had a negative and significant ($\beta = -0.201$, $p = 0.001$) effect on DA. Meaning that CEOs who hold a percentage of the share in the company are likely to produce quality earnings. This is in agreement with the studies of O'Callaghan, Ashton, and Hodgkinson (2018) and Amir, Shaari, and Ariff (2019) who discovered that there is a negative association between CEO ownership and earnings quality. CEOs have the incentive to change earnings because of their minimal shareholdings, particularly when their companies are experiencing poor financial performance. CEOs with a smaller share of the company's share capital are more likely to choose accounting accruals based on opportunities. Therefore, CEO ownership can reduce

opportunistic discretionary accrual manipulation while increasing ownership power results in greater earnings quality (Warfield *et al.*, 1995). This is contrary to other studies by Al-Fayoumi, Abuzayed, and Alexander (2010); Mitani (2010); and Kazemiana and Sanusib (2015), who found that companies with increased managerial ownership are more prone to manipulate earnings. This is further supported by Sharma & Kuang's (2014)'s findings, which showed that CEOs are more motivated to engage in accounting scandals as their shareholdings increase. Increased CEO ownership power may therefore encourage CEOs to use discretionary accruals to increase earnings (Qawasmeh & Azzam, 2020).

CEO expert power had a negative and significant ($\beta = -0.176$, $p = 0.0001$) effect on DA. This means that when a CEO has expertise in terms of length of time in the company and financial expertise, they are likely not to engage in earnings manipulation. This is supported by Xie Davidson and DaDalt (2003); Zhu and Huang (2013); Gounopoulos and Pham (2018), who found that companies with CEOs that have financial experience were linked to good quality earnings. CEO's Expert is more likely to present quality earnings predictions, according to Baik, Farber, and Lee (2011). These results were contrary to those of Qi, Lin, Tian & Lewis (2018); Jiang *et al.*, (2013); and Ran *et al.*, (2015) who reported a decrease in the quality of earnings by CEO expert power. Katmon, & Farooque (2017), reported an insignificant effect on the relationship between CEO expert power and earnings quality.

4.4.3 Effect of Institutional Ownership on Earnings Quality

In line with Ho₂: "Institutional ownership does not significantly moderate the relationship between CEO power and earnings quality". The relationship between the moderator and the dependent variable should exist for the variable to be a moderator.

This explains why a regression of earnings quality on institutional ownership was done. The results for fixed effect (Table 4.14) demonstrated that institutional ownership had a negative and significant effect ($\beta = -0.468$, $\rho < 0.05$) on DA. This suggests that a one-unit increase in institutional ownership resulted in a 0.468-unit reduction in DA, improving earnings quality.

Table 4.14 Regressing earnings quality on institutional ownership – Fixed effect

Fixed-effects (within) regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1771	Obs per group: min	=	9			
between = 0.3869	Avg	=	9.0			
overall = 0.3474	Max	=	9			
	F(7,605)	=	18.60			
corr(u_i, Xb) = 0.1542	Prob > F	=	0.0000			
DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
CEOSP	-.4209282	.0671949	-6.26	0.000	-.5528918	-.2889646
CEOOP	-.2217313	.0516342	-4.29	0.000	-.3231352	-.1203273
CEOEP	-.1715577	.0418084	-4.10	0.000	-.2536649	-.0894505
FL	.2183542	.0554495	3.94	0.000	.1094573	.3272511
FA	.1222084	.0429111	2.85	0.005	.0379357	.2064812
FS	.7814488	.2099048	3.72	0.000	.3692183	1.193679
IO	-.4680146	.156271	-2.99	0.003	-.7749141	-.161115
_cons	-2.055067	.5978047	-3.44	0.001	-3.229091	-.8810425
sigma_u	.5263771					
	3					
sigma_e	.3310336					
Rho	.7165873					
	4 (fraction of variance due to u_i)					
F test that all u_i=0:				F(77, 605) =	19.09	Prob > F = 0.0000

Source: Author (2023)

The results for random effects (Table 4.15) demonstrated that institutional ownership explained 17.54% of the variance in earnings quality ($\Delta R = 0.1754$). The findings also demonstrate that institutional ownership has a considerable negative and statistically significant influence on ($\beta = -0.5867$, $\rho < 0.05$) DA. This demonstrates that increasing

institutional ownership by one unit results in an increase in earnings quality by 0.5867 units.

Table 4.15 Regressing earnings quality on Institutional Ownership – Random Effect

Random-effects GLS regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1754	Obs per group: min	=	9			
between = 0.4093	Avg	=	9.0			
overall = 0.3640	Max	=	9			
	Wald chi2(7)	=	181.60			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			
DA	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
CEOSP	-.4110858	.06029	-6.82	0.000	-.5292521	-.2929196
CEOOP	-.2481121	.049312	-5.03	0.000	-.3447619	-.1514622
CEOEP	-.1757553	.038834	-4.53	0.000	-.2518686	-.0996421
FL	.2158373	.0520484	4.15	0.000	.1138242	.3178503
FA	.1588693	.0412231	3.85	0.000	.0780736	.2396651
FS	.7602314	.1681819	4.52	0.000	.4306009	1.089862
IO	-.5867196	.1370779	-4.28	0.000	-.8553874	-.3180517
_cons	-1.939015	.4754588	-4.08	0.000	-2.870897	-1.007133
sigma_u	.48121613					
sigma_e	.3310336					
Rho	.67878489	(fraction of variance due to u_i)				

Source: Author (2023)

The Hausman test results ($\chi^2(2) = 18.36$ and $\text{Prob} > \chi^2 = 0.0105 < 0.05$) in Table 4.16 justified the use of a fixed effect regression model. This is due to the fact that the test value of Chi-square (χ^2) is greater than the crucial threshold.

Table 4.16 Regressing earnings quality on institutional ownership – Hausman test

	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CEOSP	-.4209282	-.4110858	-.0098424	.0296693
CEOOP	-.2217313	-.2481121	.0263808	.0153105
CEOEP	-.1715577	-.1757553	.0041976	.0154874
FL	.2183542	.2158373	.002517	.0191209
FA	.1222084	.1588693	-.0366609	.0119172
FS	.7814488	.7602314	.0212173	.125598
IO	-.4680146	-.5867196	.118705	.0750351

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(7) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 18.36$$

$$\text{Prob}>\chi^2 = 0.0105$$

Source: Author (2023)

The results of the fixed effect indicate that institutional ownership is negative and significant ($\beta = -0.468$, $p = 0.0105$) on DA. Meaning that a one-unit increase in institutional ownership leads to a 0.468-unit increase in earnings quality. This is because institutional investors are regarded to be better equipped to manage an effective monitoring system because they have access to more resources than other shareholders. According to Sari *et al.*, (2020). By providing oversight through institutional investors, institutional ownership is also seen to be capable of lowering agency costs. This is in agreement with Tan and Keeper (2008) and Nurleni & Bandang (2018); Therefore meaning that when there is a high percentage of shares with the institutional owners, there is a likelihood of having quality earnings.

4.4.4 Effect of CEO Power on Integrated Reporting

To test for mediation, it is a condition for the independent variable (CEO power) to have an effect on the dependent variable (EQ). Justifying the analysis of CEO power and integrated reporting. The findings demonstrated that CEO power explained 17.20

percent of the variation in integrated reporting (R square within = 0.1720) as shown in Table 4.17. CEO structured power ($\beta = 0.0483$, $\rho < 0.0505$) has a positive effect on integrated reporting, according to the findings. This indicates that increasing CEO structural power by one unit leads to an increase in integrated reporting of 0.0483 units. CEO ownership power influenced integrated reporting positively (0.0283, $\rho < 0.055$). This means that a one-unit increase in CEO ownership power translates into a 0.0283 positive change in integrated reporting. The effect of CEO expert power on integrated reporting was also positive ($\beta = 0.0264$, $\rho < 0.05$). This illustrates that increasing CEO expert power by one unit resulted in a 0.0264 positive change in integrated reporting. Since all three factors had a positive influence on integrated reporting.

Table 4.17 Regressing integrated reporting on CEO power – Fixed effect

Fixed-effects (within) regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1720	Obs per group: min	=	9			
between = 0.2261	avg	=	9.0			
overall = 0.2222	max	=	9			
	F(6,606)	=	20.98			
corr(u_i, Xb) = 0.0959	Prob > F	=	0.0000			

IR	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
CEOSP	.0482625	.009072	5.32	0.000	.0304462 .0660788
CEOOP	.0283004	.0069103	4.10	0.000	.0147294 .0418715
CEOEP	.0263748	.0056419	4.67	0.000	.0152947 .037455
FL	-.0287078	.0074405	-3.86	0.000	-.0433202 -.0140955
FA	-.0185702	.0057936	-3.21	0.001	-.0299482 -.0071921
FS	-.1185217	.0281832	-4.21	0.000	-.1738703 -.0631731
_cons	.9307007	.0805073	11.56	0.000	.7725935 1.088808
sigma_u	.08540186				
sigma_e	.04470012				
rho	.78495569	(fraction of variance due to u_i)			

F test that all u_i=0:	F(77, 606) =	22.69	Prob > F = 0.0000
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Source: Author (2023)

The random effect findings in Table 4.18 provide the direct effect regression results for the random effect model. According to the results, CEO power explains 16.46 percent of the variation in integrated reporting (as calculated by the R-squared). The results show that CEO structural power has a significantly positive influence on integrated reporting ($\beta = 0.0601$, $p > 0.05$). This indicates that boosting CEO structural

power by one unit increases integrated reporting by 0.06 units. Furthermore, the findings indicate that CEO ownership power ($\beta = 0.0336, \rho < 0.05$) has a positive and marginally significant influence on integrated reporting. The implication is that raising one unit of CEO ownership power increases integrated reporting by 0.034 units. The results also suggested that CEO expert power ($\beta = 0.0309, \rho < 0.05$) improved integrated reporting. An increase in CEO expert power of one unit leads to an increase in integrated reporting of 0.031 units. The null hypotheses of random effect were rejected, and it was established that CEO power had a minor influence on integrated reporting.

Table 4.18 Regressing integrated reporting on CEO Power – Random Effect

Random-effects GLS regression	Number of obs	= 702
Group variable: ID	Number of groups	= 78
R-sq: within = 0.1646	Obs per group: min	= 9
between = 0.3796	avg	= 9.0
overall = 0.3390	max	= 9
	Wald chi2(6)	= 160.64
corr(u_i, X) = 0 (assumed)	Prob > chi2	= 0.0000

IR	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	.0601212	.0083298	7.22	0.000	.0437951 .0764474
CEOOP	.0336731	.006725	5.01	0.000	.0204924 .0468538
CEOEP	.0309198	.0053339	5.80	0.000	.0204655 .0413741
FL	-.0206186	.0071314	-2.89	0.004	-.0345959 -.0066413
FA	-.0159276	.0056371	-2.83	0.005	-.0269761 -.0048791
FS	-.0691726	.0234887	-2.94	0.003	-.1152096 -.0231356
_cons	.7743349	.0663429	11.67	0.000	.6443052 .9043647
sigma_u	.07126659				
sigma_e	.04470012				
rho	.71766384	(fraction of variance due to u_i)			

Source: Author (2023)

The Hausman test findings in Table 4.19 supported the choice of a fixed effect regression model ($\chi^2(2) = 31.24$ and $\text{Prob} > \chi^2 = 0.0000$ 0.05). This is because the Chi-square (χ^2) test value is larger than the critical threshold.

Table 4.19 Regressing integrated reporting on CEO power – Hausman test

	---- Coefficients ----			
	(b) Fe	(B) Re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CEOSP	.0482625	.0601212	-.0118587	.0035937
CEOOP	.0283004	.0336731	-.0053727	.0015897
CEOEP	.0263748	.0309198	-.004545	.0018387
FL	-.0287078	-.0206186	-.0080893	.0021223
FA	-.0185702	-.0159276	-.0026426	.0013377
FS	-.1185217	-.0691726	-.0493491	.0155748

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(6) = (b-B)'[(V_b-V_B)^{-1}](b-B) \\ = 31.24$$

$$\text{Prob} > \chi^2 = 0.0000$$

Source: Author (2023)

CEO structural power had a positive and significant ($\beta = 0.048$, $p = 0.0000$) effect on integrated reporting. Meaning that for every one-unit increase in CEO structural power, it leads to a 0.048 unit increase in integrated reporting. When the CEO is being monitored and their activities have been controlled by an independent director, they are likely to ensure integrated reporting. Higher degrees of CEO structural power, according to the agency theory, improve management institutionalization and the CEO's ability to ensure integrated reporting. according to studies by Omran, *et al.*, (2021); Vitolla, Raimo & Rubino (2020), CEO structural power positively affects the quality of information disclosed. However, Garcia-Sanchez *et al.*, (2020) noted that powerful CEOs may decline to employ integrated reporting disclosures and that firm incentives have no effect on this conduct. Uyar and Kilic (2013) found no significant correlation between structural power and the level of integrated reporting.

Integrated reporting was positively and significantly ($\beta = 0.028$, $p = 0.0000$) impacted by CEO ownership power. Meaning that every one-unit increase in ownership power leads to a 0.028-unit increase in integrated reporting. The level of disclosure made by

a company is influenced by the CEOs' ownership of shares in that company. These circumstances increase CEO power, assuring greater power to implement decisions, especially discretionary ones. This is supported by studies of Haniffa and Cooke, (2002); Chau and Gray, (2002); Huafang and Jianguo, (2007) who found a positive relationship between ownership concentration and integrated reporting. Other studies found the contrary like Cormier and Magnan, (2003); Brammer and Pavelin, (2006); Fathi, (2013); Khan *et al.*, (2013); Muttakin and Khan, (2014); Dias *et al.*, (2017), reported that the extent and quality of integrated reporting were negatively influenced by a concentrated CEO ownership power. While Gul and Leung (2004); Oliveira *et al.*, (2011) found no relationship between ownership power and integrated reporting.

CEO expert power had a positive and significant impact on integrated reporting ($\beta = 0.026$, $p = 0.0000$). Meaning that for every one-unit increase in CEO expert power leads to a 0.026 unit increase in integrated reporting. This indicated that when CEOs are knowledgeable about integrated reporting and have spent a long time working for the company, they are exposed to more experience and expertise hence, ensures integrated reporting. These findings are in agreement with Brockman, Campbell, Lee, and Salas, (2019); Matsunaga and Yeung (2008), who suggested that a CEO with a background in finance will enable more transparency of both financial and non-financial information. CEOs with financial experience are more likely to pay greater attention to the firm's financial disclosures because they are more likely to understand how financial disclosures reduce information asymmetry as they advance through the financial ranks.

4.4.5 Effect of Integrated Reporting on Earnings Quality

The study's main objective was to investigate the moderating effect of institutional ownership in the relationship between CEO power and earnings quality as mediated

by integrated reporting. Therefore, for the mediation to occur, there has to be a relationship between the mediator (IR) and the dependent variable (EQ), justifying the analysis of this relationship for path ‘b’. The results for fixed factors in Table 4.20 show that integrated reporting explained 18.98% of the variance in earnings quality (R^2 change = 0.1898). Additionally, integrated reporting ($\beta = -0.9221$, $p > 0.05$) had a major negative impact on DA. This implies that an increase of one unit in integrated reporting resulted in a 0.9221 unit improvement in earnings quality.

Table 4.20 Regressing earnings quality on integrated reporting – Fixed effect

Fixed-effects (within) regression	Number of obs	= 702
Group variable: ID	Number of groups	= 78
R-sq: within = 0.1898	Obs per group: min	= 9
between = 0.3815	Avg	= 9.0
overall = 0.3478	Max	= 9
	F(8,604)	= 17.69
corr(u_i, Xb) = 0.1090	Prob > F	= 0.0000

DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
IR	-.9221175	.2991011	-3.08	0.002	-1.509522 - .334713
CEOCEOSP	-.3766077	.0682586	-5.52	0.000	-.5106607 - .2425547
CEOOP	-.1966667	.0519156	-3.79	0.000	-.2986236 - .0947097
CEOEP	-.147015	.0422739	-3.48	0.001	-.2300367 - .0639934
FL	.1928135	.0556835	3.46	0.001	.0834567 .3021704
FA	.1049817	.0429774	2.44	0.015	.0205784 .189385
FS	.6755105	.2112582	3.20	0.001	.2606207 1.0904
IO	-.4914918	.1553708	-3.16	0.002	-.7966244 - .1863591
_cons	-1.190294	.6565798	-1.81	0.070	-2.479751 .0991623
sigma_u	.52510506				
sigma_e	.32873113				
rho	.7184359	(fraction of variance due to u_i)			

F test that all u_i=0:	F(77, 604) =	19.35	Prob > F = 0.0000
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Source: Author (2023)

The results for random effects in Table 4.21 show that integrated reporting explained 18.80% of the variation in earnings quality ($R^2 = 0.1880$). The findings also demonstrate that integrated reporting greatly enhances earnings quality and has a statistically significant effect ($\beta = -0.86426$, $p > 0.05$). This demonstrates that increasing integrated reporting by one unit led to an increase in earnings quality by 0.8643 units.

Table 4.21 Regressing earnings quality on integrated reporting – Random effect

Random-effects GLS regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1880	Obs per group: min	=	9			
between = 0.4055	Avg	=	9.0			
overall = 0.3656	Max	=	9			
	Wald chi2(8)	=	192.79			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			
DA	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
IR	-.8642693	.2763259	-3.13	0.002	-1.405858	-.3226804
CEOSP	-.3581613	.0623263	-5.75	0.000	-.4803186	-.2360039
CEOOP	-.2183328	.049859	-4.38	0.000	-.3160546	-.120611
CEOEP	-.1482476	.0395825	-3.75	0.000	-.2258279	-.0706673
FL	.1993051	.0519822	3.83	0.000	.0974218	.3011885
FA	.144062	.0411752	3.50	0.000	.0633601	.2247638
FS	.7063647	.1685398	4.19	0.000	.3760327	1.036697
IO	-.6010016	.1365171	-4.40	0.000	-.8685702	-.333433
_cons	-1.277843	.5195009	-2.46	0.014	-2.296046	-.25964
sigma_u	.48504327					
sigma_e	.32873113					
Rho	.68524801	(fraction of variance due to u_i)				

Source: Author (2023)

The choice of a fixed effect regression model was supported by the Hausman test findings ($\chi^2(2) = 17.30$ and $\text{Prob} > \chi^2 = 0.0271$ $p < 0.05$) in Table 4.22. This is a result of the Chi-square test score (χ^2) exceeding the significant threshold.

Table 4.22 Regressing earnings quality on integrated reporting - Hausman test

	---- Coefficients ----			
	(b) Fe	(B) re	(b-B) Difference	$\sqrt{\text{diag}(V_b - V_B)}$ S.E.
IR	-.9221175	-.8642693	-.0578483	.1144791
CEOSP	-.3766077	-.3581613	-.0184465	.0278328
CEOOP	-.1966667	-.2183328	.0216661	.0144676
CEOEP	-.147015	-.1482476	.0012326	.0148427
FL	.1928135	.1993051	-.0064916	.0199626
FA	.1049817	.144062	-.0390803	.0123151
FS	.6755105	.7063647	-.0308542	.1273748
IO	-.4914918	-.6010016	.1095098	.0741834

b = consistent under H_0 and H_a ; obtained from xtreg

B = inconsistent under H_a , efficient under H_0 ; obtained from xtreg

Test: H_0 : difference in coefficients not systematic

$$\chi^2(8) = (b-B)[(V_b - V_B)^{-1}](b-B) = 17.30$$

$$\text{Prob} > \chi^2 = 0.0271$$

Source: Author (2023)

The results of the fixed effect revealed that integrated reporting contributes to a 92.21% variation in earnings quality. This is consistent with the findings of (Rouf & Akhtaruddin, 2018 and Grigoris 2014), who discovered that businesses with high earnings generate integrated reporting. As stated by De Klerk *et al.*, (2015), high levels of disclosure are linked to higher share prices, which motivates CEOs to release more information to improve the earnings quality.

4.4.6 Effect of CEO Power on earnings quality

Step four of the mediation process requires regression of the independent variable on the dependent variable while controlling for the mediator and all other variables under

the study. Whereby if the results are zero, then it means complete mediation and if not, then it is partial mediation.

4.4.6.1 Fixed effect

Table 4.23 displays the regression results for the fixed effect model. The findings reveal that CEO power explains a 22.84% variation in DA. The results further indicate that CEO structural power ($\beta = -0.3815$, $p > 0.05$) has a negative and significant effect on DA. This means that for every one unit increase in CEO structural results in a 0.3815 unit decrease in DA thus an increase in earnings quality. CEO ownership power had a negative and significant effect on DA ($\beta = -0.1400$, $p > 0.05$), meaning that for every one-unit increase in CEO ownership power, DA decrease by 0.1400 units thus increases in earnings quality by 0.14 units. CEO expert power had a negative and significant effect on DA ($\beta = -0.1368$, $p > 0.05$). This signifies that a one-unit increase in CEO expert power results in a 0.1368 unit decrease in DA, hence an increase in earnings quality by 0.1368.

Table 4.23 Regressing earnings quality on CEO power – Fixed effect

Fixed-effects (within) regression	Number of obs	= 702				
Group variable: ID	Number of groups	= 78				
R-sq: within = 0.2284	Obs per group: min	= 9				
between = 0.3666	avg	= 9.0				
overall = 0.3484	max	= 9				
	F(11,601)	= 16.17				
corr(u_i, Xb) = 0.0864	Prob > F	= 0.0000				
DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
CEOSP	-.3815145	.0668001	-5.71	0.000	-.5127044	-.2503245
CEOOP	-.149907	.0515431	-2.91	0.004	-.2511335	-.0486806
CEOEP	-.1367838	.0415671	-3.29	0.001	-.2184183	-.0551494
FS	.7997857	.2086829	3.83	0.000	.3899493	1.209622
FA	.0961636	.042212	2.28	0.023	.0132627	.1790646
FL	.2012729	.0550307	3.66	0.000	.0931971	.3093487
IO	-.3391344	.1546482	-2.19	0.029	-.642851	-.0354179
IO*CEOEP	-.6137566	.1615083	-3.80	0.000	-.9309458	-.2965674
IO*CEOOP	.4893333	.1843464	2.65	0.008	.127292	.8513747
IO*CEOSP	.6667201	.2174992	3.07	0.002	.2395693	1.093871
IR	-.8552983	.2941122	-2.91	0.004	-1.432911	-.2776857
_cons	-1.702587	.6532457	-2.61	0.009	-2.985509	-.4196659
sigma_u	.52990122					
sigma_e	.32161846					
Rho	.73079294 (fraction of variance due to u_i)					
F test that all u_i=0: F(77, 601) = 19.66 Prob > F = 0.0000						
Source: Author (2023)						

Source: Author (2023)

4.4.6.2 Random effect

According to the findings of the random effect in Table 4.24, CEO power explains a 22.59% variation in DA. The findings indicate that CEO structural power has a negative and significant effect on DA ($\beta = -0.359$, $p > 0.05$). This demonstrates that increasing CEO structural power by one unit results in a 0.2259 unit decrease in DA, thus increasing earnings quality. Additionally, the results show that CEO ownership power has a negative and significant effect on DA ($\beta = -0.1774$, $p > 0.05$). This implies that one unit increase in CEO ownership power leads to a 0.1774 unit decrease in DA, therefore an increase in earnings quality. CEO expert power also has a negative and significant effect on DA ($\beta = -0.1443$, $p > 0.05$). When CEO expert power increases by one unit, DA decreases by 0.1443 units, hence an increase in earnings quality.

Table 4.24 Regressing earnings quality on CEO power – Random effect

Random-effects GLS regression	Number of obs	=	702
Group variable: ID	Number of groups	=	78
R-sq: within = 0.2259	Obs per group: min	=	9
between = 0.4020	avg	=	9.0
overall = 0.3743	max	=	9
	Wald chi2(11)	=	227.53
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

DA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	-.35898	.0613057	-5.86	0.000	-.4791369 -.2388231
CEOOP	-.1774302	.0494986	-3.58	0.000	-.2744457 -.0804147
CEOEP	-.1443144	.0390186	-3.70	0.000	-.2207895 -.0678393
FS	.8126481	.168277	4.83	0.000	.4828311 1.142465
FA	.1366479	.0404692	3.38	0.001	.0573297 .2159661
FL	.2142837	.0514776	4.16	0.000	.1133894 .3151779
IO	-.4635896	.136623	-3.39	0.001	-.7313657 -.1958136
IO*CEOEP	-.541623	.1533632	-3.53	0.000	-.8422095 -.2410366
IO*CEOOP	.4996706	.180499	2.77	0.006	.1458991 .8534422
IO*CEOSP	.5842902	.2074984	2.82	0.005	.1776007 .9909796
IR	-.8270661	.2719645	-3.04	0.002	-1.360107 -.2940254
_cons	-1.710483	.5222039	-3.28	0.001	-2.733984 -.6869826
sigma_u	.48661359				
sigma_e	.32161846				
Rho	.69597607 (fraction of variance due to u_i)				

Source: Author (2023)

The choice of a fixed effect regression model was supported by the Hausman test findings ($\chi^2(11) = 21.65$ and $\text{Prob} > \chi^2 = 0.0272$ $p < 0.05$) in Table 4.25. This is a result of the Chi-square test score (χ^2) exceeding the significant threshold.

Table 4.25 Regressing earnings quality on CEO power - Hausman test

	---- Coefficients ----			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CEOSP	-.3815145	-.35898	-.0225345	.0265304
CEOOP	-.149907	-.1774302	.0275232	.0143728
CEOEP	-.1367838	-.1443144	.0075306	.0143308
FS	.7997857	.8126481	-.0128624	.1234155
FA	.0961636	.1366479	-.0404843	.012004
FL	.2012729	.2142837	-.0130108	.0194533
IO	-.3391344	-.4635896	.1244552	.0724585
IO*CEOEP	-.6137566	-.541623	-.0721336	.0506422
IO*CEOOP	.4893333	.4996706	-.0103373	.037466
IO*CEOSP	.6667201	.5842902	.08243	.0651943
IR	-.8552983	-.8270661	-.0282322	.11197

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 Test: Ho: difference in coefficients not systematic
 $\chi^2(11) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 = 21.65
 Prob>chi2 = 0.0272

4.5 Moderation Effects

The study examined the impact of the moderator variable (institutional ownership) on the relationship between the independent variable and the dependent variable. According to Bolin (2014), moderation refers to the size of the shift brought on by a third variable in the causal link between two variables. If the variance with the interaction is considerably greater than the variance without the interaction and the coefficient of the interaction term is not zero, then there is moderation.

There are three different kinds of moderation: enhancing interactions, in which the predictor and the moderator both affect the outcome variable in the same direction; buffering interactions, in which the moderator variable reduces the influence of the predictor variable on the outcome; and antagonistic interactions, in which the

predictor and the moderator both have an effect on the outcome, but the interaction is in the opposite direction.

Without a graph, the interpretation of moderation effects is complex. Graphs make it easier to visualize how the independent variable affects the results at various moderator values. To plot modgraphs traditionally, Aiken and West (1991), implemented a technique that was proposed by Cohen and Cohen (1983), of using three moderator values: the mean, the value one standard deviation above, and the value one standard deviation below the mean. Moreover, they stated that it is not enough to just assume there is interaction without investigating the nature of interaction at low, medium, and high degrees of moderation. To ascertain if institutional ownership had to buffer, enhance, or buffering impacts on the link between CEO power and earnings quality, the study further employed the modgraph technique suggested by (Jose, 2008).

In order to determine how institutional ownership affects the link between CEO power and the outcomes (EQ & IR), a hierarchical analysis of the moderating influence for each of the three CEO power aspects (CEO structural power, CEO ownership power, and CEO expert power) on outcomes by gradually introducing the interactions and interpreting the output. According to Hayes (2009), three requirements must be true to determine whether the moderation effect exists. First, there should be a difference between the R^2 for the without and with interaction, second, the interaction coefficient should be different from zero, and third, the overall model (F-values) should be significant. There were two outcomes in this study; earnings quality and integrated reporting. Therefore the hierarchical regression results are shown in Table 4.26 (regression models 3a, 3b, and 3c) and Table 4.27 (regression models 4, 5a, 5b, and 5c).

4.5.1 Moderation Effect of Institutional Ownership in the Relationship between CEO Power and Earnings Quality

Model 1 (Table 4:23) shows that ($R\text{-squared} = 0.165$, $F(6,606) = 19.94$, and $\text{Prob} > F = 0.0000$) without an interaction term; however, when the moderator (IO) was included, the overall results were ($R^2 = 0.177$, $F(7,605) = 18.60$, and $\text{Prob} > F = 0.0000$) as shown on model 2 (Table 4:23). The findings on model 2 show that the moderator has a negative and statistically significant effect on the DA ($\beta = -0.468$, $p < 0.05$). Meaning that for every one-unit increase in institutional ownership, it leads to a 0.468 unit decrease in DA thus an increase in earnings quality. Indicating that with the moderator, the R^2 is 0.177, which is an increase of 0.012 ($0.177 - 0.165$). Meaning that institutional ownership contributes to a tune of 1.2% variance in DA and thus earnings quality.

The dependent variable (EQ) measured using DA in model 3a (Table 4:23) was regressed against the control variables (firm leverage, firm age & firm size), the independent variables (CEO structural power, CEO ownership power, & CEO expert power), the moderator (institutional power), and the initial interaction (CEO structural power* institutional ownership). The findings of fixed-effect regression were used to evaluate the hypothesis as per the Hausman test ($\text{Prob} > \chi^2 = 0.0001 < 0.05$). Without an interaction term, model 2 shows an R^2 of 0.177, $F(7,605) = 18.60$, and $\text{Prob} > F = 0.0000$; however, when the first interaction term (CEO structural power * institutional ownership) was included, the results were $R^2 = 0.1880$, $F(8,604) = 17.48$, and $\text{prob} > F = 0.0138$. The results also showed that this interaction term had a positive and statistically significant impact on DA ($\beta = 0.634$, $p < 0.05$). Implying that for every one-unit increase in CEO structural power * institutional ownership, DA increased by 0.634 units thus a decrease in earnings quality. Resulting in R^2 change of 1.1%.

Meaning that the interaction brings about a 1.1% chance variation in DA. This interaction was further explained using a modgraph as shown in Figure 4.1

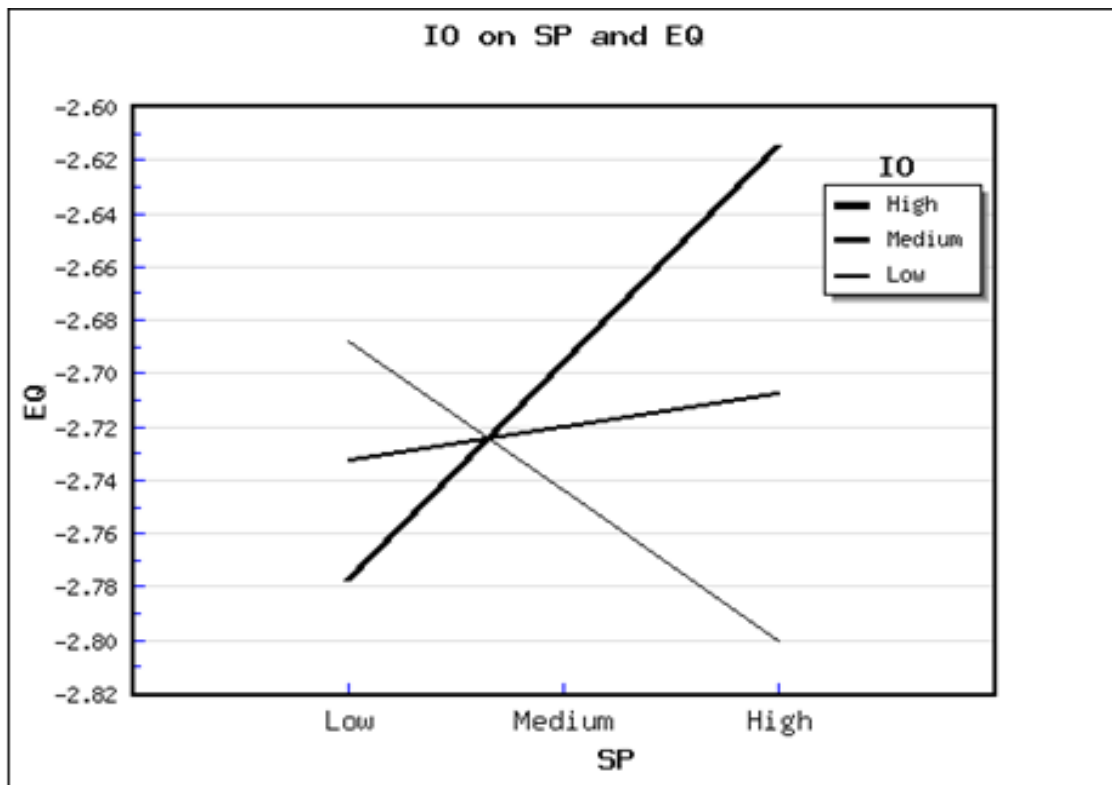


Figure 4.1 Modgraph for the moderating effect of institutional ownership on the relationship between CEO structural power and earnings

Source: Author (2023)

The link between CEO structural power and earnings quality is moderated by institutional ownership, as demonstrated by the interaction plot in Figure 4.1. To have an optimal point (when earnings quality is highest), then institutional ownership has to be low and CEO structural power high, while at a low point of earnings quality, institutional ownership is high and CEO structural power is low. Meaning that to ensure there is less discretionary accrual (a measure of EQ), firms should have more directors who are independent and control the number of institutional investors. This can further be supported by the fact that transient investors are only concerned with short-term performance and may put a lot of pressure on the CEO, resulting in low-quality earnings, when the board independence is high (it controls the CEO's

structural powers), it means that an efficient control mechanism is already in place, refuting the need to increase institutional ownership.

Therefore, the null hypothesis H_{02a} “*Institutional ownership does not significantly moderate the relationship between CEO structural power and earnings quality*” was rejected and concluded that institutional ownership moderates the relationship between structural power and earnings quality ($\beta=0.634$ $p = 0.0000$, $R^2 = 0.188$). The modgraphs have further indicated that yes there is a moderation but which nature of moderation optimal earnings quality? CEO structural powers should be high while the institutional ownership low. Implying that the board is more autonomous when institutional ownership is minimal, hence, resulting in quality earnings. This is because they provide a more effective monitoring mechanism with better advice due to their experiences, expertise, and network (Alves, 2021; Alves, 2014; Al Azeez, Sukoharsono, & Andayani, 2019; Chi, Hung, & Liu, 2020; Chen, Cheng, & Wang, 2015; Mbir, Agyemang, Tackie, & Abeka, 2020) and their strategies are long-term, putting less pressure on the CEO. The modgraph further shows that at a low level of CEO structural power and high institutional ownership, earnings quality will still not be at its best level. The fact that both parties are external to the business and that they all have robust monitoring systems might force the CEO to falsify earnings to appease them. This is supported by Darmadi and Sodikin (2013), who discovered that a large percentage of institutional ownership may also have negative impacts on earnings quality. High institutional ownership can result in overzealous surveillance (Baysinger, & Butler, 2019), which would hinder the company from taking strategic action (Goodstein, Gautam, & Boeker, 1994).

In model 3b (Table 4:26), the dependent variable (EQ), was regressed against the independent variables (CEO structural power, CEO ownership power, and CEO

expert power), control variables (firm leverage; firm age; firm size), the moderator (institutional ownership) and then the first & second interaction (CEOSP * IO, CEOOP * IO respectively). The regression results with the first interaction (CEOSP * IO) show that ($R^2 = 0.188$, $F(8,604) = 17.48$, and $\text{Prob} > F = 0.0000$), while with the second interaction (CEOOP * IO), the results show that ($R^2 = 0.199$, $F(39,603) = 16.69$, and $\text{Prob} > F = 0.0000$). Indicating that R^2 changed by 0.011 ($0.199 - 0.188$). The results further show that the interaction term had a positive and significant impact on DA ($\beta = 0.546$, $p < 0.05$). Implying that the interaction (CEOOP * IO) contributed 1.11% variance in EQ. This is further better interpreted by the use of a modgraph in Figure 4.2 below.

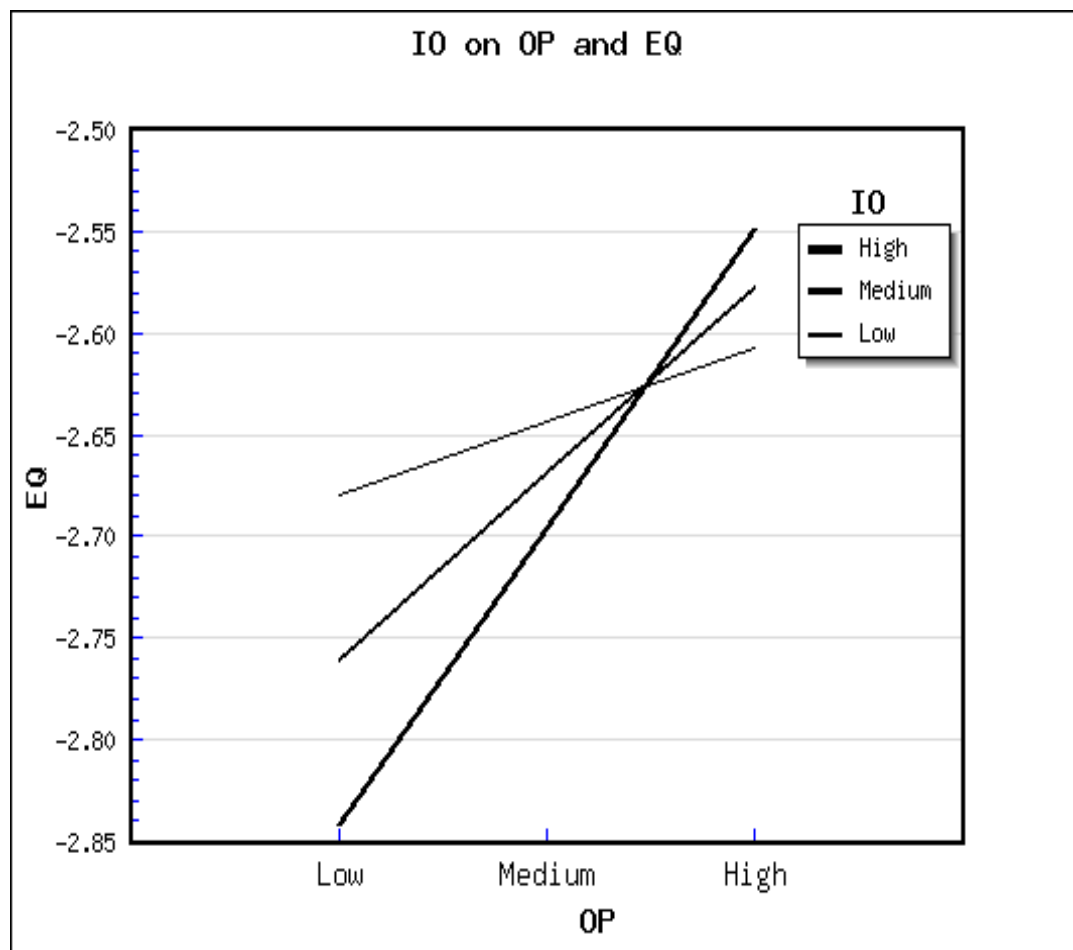


Figure 4.2 Modgraph for the moderating effect of institutional ownership on the relationship between CEO ownership power and earnings quality.

Source: Author (2023)

The modgraph in Figure 4.2 shows that at the ideal level of earnings quality, institutional ownership is high while ownership power is low. At the lowest level of quality earnings, both institutional ownership and CEO ownership power are high. Indicating that the institutional ownership and CEO's ownership share should both not be high for a firm to have quality earnings. The modgraph further indicates that at any one point, CEO ownership power should not be high, because, at all high levels of CEOOP, the earnings quality is at worst.

Hence, the null sub-hypothesis; **H_{02b} “Institutional ownership does not significantly moderate the relationship between CEO ownership power and earnings quality”** was rejected and concluded that institutional ownership significantly moderates the relationship between ownership power and earnings quality ($\beta=0.546$ $p = 0.0105$, $R^2 = 0.199$). Institutional ownership is a tool that may be used to support or oppose CEO's policies, therefore, with institutional ownership present, they are in a position to fight against actions made by the CEO that is not in the best interests of shareholders in order to maintain quality earnings. When the CEO owns a significant percentage of the company's stock, he can exert influence over the appointment of other directors, giving him an advantage over other board members (Saidu, 2019). With significant ownership, the CEO will decide employees' salaries, suppressing their termination if necessary, and overpowering most Board decisions (Zhang, Tang, & Lin, 2016), and these decisions will affect the quality of earnings. To be able to generate high-quality earnings, the company should decrease the CEO's shareholding proportionately and raise the number of institutional investors.

Finally, the interaction of CEO expert power * institutional ownership was introduced in model 3c (Table 4:23). The regression results show ($R^2 = 0.218$, $F(10,602) = 16.73$, and $\text{Prob} > F = 0.0082$). This was an increase of 0.019 ($0.218 - 0.199$) from the

previous interaction. Meaning that the interaction (CEOEP * IO) contributes 1.9% variance change in EQ. The results further show that the interaction term had a substantial negative and significant ($\beta = -0.606, p < 0.05$) impact on DA. When all the interactions are included in the model, they improve the quality of earnings to a tune of 12.8% together with the control and independent variables. When there are no interactions, the R^2 is 0.165 and when all the interactions are put in the model, the R^2 is 0.218. Implying that the interactions contribute 5.3% (21.8% – 16.5%) variance in EQ. An interpretation was further supported by the use of a modgraph in Figure 4.3

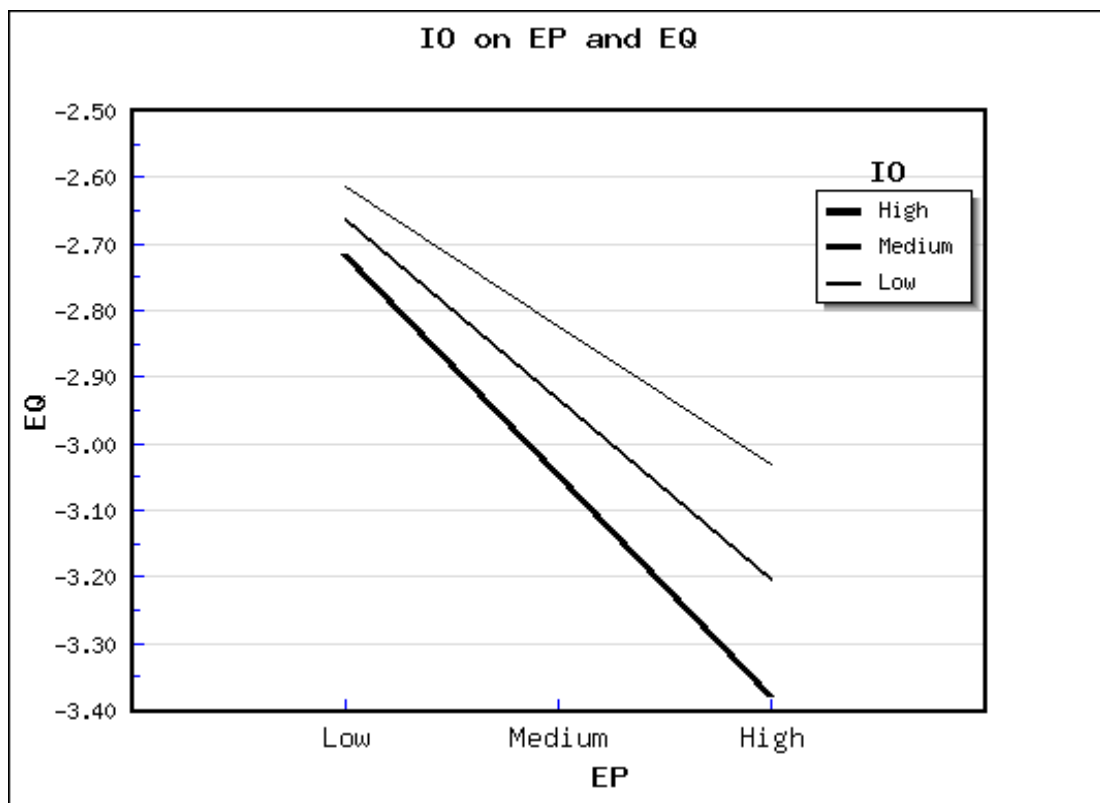


Figure 4.3 Modgraph for the moderating effect of institutional ownership on the relationship between expert power and earnings quality

Source: Author (2023)

Figure 4.3, shows that, when institutional ownership and expert power are all high, earnings quality is at its optimum level. Institutional ownership and expert power, are all low at the lowest level of quality earnings. Proving the presence of moderation. Therefore, the null sub-hypothesis; **H02c - Institutional ownership does not**

significantly moderate the relationship between CEO expertise power and earnings quality was rejected and concluded that Institutional ownership significantly moderate the relationship between CEO expert power and earnings quality ($\beta = -0.606$ $p = 0.0105$, $R^2 = 0.218$). This means that to have high-quality earnings, the firm needs to have a CEO who has the expertise (financial expertise and length of stay at the firm) and at the same time the institutional ownership should also be high.

Although CEOs are not directly in charge of managing the financial reporting process, their decision-making authority from their expertise gives them a greater ability to affect financial reporting choices positively or negatively. Therefore, institutional investors are thought to be more proficient at detecting firm flaws and less likely to be misled by the CEO's attempts to manipulate earnings. They provide confidential information that aids in the detection and controlling of such manipulation if any (Asward & Lina, 2015; Hartzell & Starks, 2003; Healy & Palepu, 2001).

On the other side contrary to the study findings, institutional investors can put a lot of pressure on the CEO to perform better, which can lead to experienced CEOs manipulating the earnings to satisfy their demands by using their expertise and experience gathered through time. Meaning that the likelihood of earnings manipulation by CEOs to achieve consistent earnings increases with the amount of institutional ownership.

When the third interaction (CEOEP * IO) was regressed, the change in the change in R^2 improved (from 0.011 to 0.019) as shown in Table 4.26, indicating that the combined interaction had a greater impact on earnings quality than the individual independent variables. This means that the link between overall CEO power and earnings quality is significantly moderated by institutional ownership, rejecting the

H02: Institutional ownership does not significantly moderate the relationship between CEO power and earnings quality. The power of the CEO to manage earnings is controlled by the ownership of the institutions (government, financial institutions, legal entities, foreign institutions, and other trusteeships and institutions). These results further suggest that institutional ownership might lessen the practice of earnings manipulation by CEOs and that the absolute value of discretionary spending decreases as institutional ownership increases (Ratnawati & Hamid, 2015). Hartzell and Starks (2003), in Cornett, Marcus, & Tehranian (2006), discovered empirical evidence that a company's and institutional investors' control mechanisms can limit CEO's behavior. According to Cornett *et al.*, (2006), institutional investors' power over the firm may push the CEO to pay more attention to the performance which will lessen selfish or opportunistic behavior.

Table 4.26 Hierarchical Regression Model for Moderation Effect of Institutional Ownership in the relationship between CEO power and Earnings quality

Variable (Logs)	Model 1		Model 2	Model 3a	Model 3b	Model 3c
Constant	-3.256**	2.186**	-2.056**	-2.166**	-2.406**	-2.527**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Leverage	0.203**	0.200**	0.218**	0.210**	0.228**	0.227**
	(0.059)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
Firm age	0.180**	0.124**	0.122**	0.112**	0.114**	0.112**
	(0.045)	(0.043)	(0.043)	(0.043)	(0.043)	(0.042)
Firm Size	0.896**	0.715**	0.781**	0.810**	0.878**	0.904**
	(0.220)	(0.210)	(0.210)	(0.209)	(0.209)	(0.207)
CEO structural power		-0.417**	-0.421**	-0.423**	-0.423**	-0.423**
		(0.068)	(0.067)	(0.067)	(0.066)	(0.066)
CEO ownership power		-0.201**	-0.222**	-0.213**	-0.194**	-0.172**
		(0.052)	(0.052)	(0.051)	(0.052)	(0.051)
CEO expert power		-0.176**	0.172**	-0.174**	0.174**	-0.160**
		(0.042)	(0.042)	(0.042)	(0.041)	(0.041)
Institutional ownership			-0.468**	-0.419**	-0.370**	0.904**
			(0.156)	(0.156)	(0.156)	(0.207)
CEO structural power × Institutional ownership				0.634**	0.630**	0.670**
				(0.222)	(0.221)	(0.219)
CEO ownership power × Institutional ownership					0.546**	0.542**
					(0.187)	(0.185)
CEO expert power × Institutional ownership						-0.606**
						(0.162)
R-squared	0.056	0.165	0.177	0.188	0.199	0.218
Δ R-squared		0.109	0.012	0.011	0.011	0.019
Hausman Test	0.000	0.000	0.001	0.014	0.011	0.001
F- Value	12.04	19.94	18.60	17.48	16.69	16.73
Probability	0.000	0.000	0.0105	0.000	0.0105	0.000

** means significance at 5% significance level

(Value in parenthesis is the standard error)

Source: Author (2023)

4.5.2 Moderation Effect of Institutional Ownership in the relationship between CEO Power and Integrated Reporting

The study's main objective was to investigate the moderating effect of institutional ownership in the relationship between CEO power and earnings quality as mediated by integrated reporting. Therefore for the moderation mediation effect to occur, path 'a' must be moderated first. Hence the reason why this analysis (moderation at path 'a') was carried out as a path to moderation mediation - the moderation effect of

institutional ownership on the relationship between CEO power and integrated reporting. The findings of the hierarchical regression ($R^2 = 0.1976$, $p < 0.05$) indicate that the first interaction model 5a explains up to 19.76% of the variation in integrated reporting. This is an increase of 1.7% from the previous model's 18.06% (without the interactions) as shown in Table 4.27. This means that the variation accounted for with the interaction is significantly more than the variation accounted for without the interaction. Furthermore, it was evident that there is a positive and significant ($\beta = 0.088$, $p < 0.05$) moderating effect of institutional ownership on the relationship between CEO structural power and integrated reporting. The beta coefficient deviates from zero, the overall model is significant, and the R^2 is significant, suggesting that institutional ownership considerably moderates the association between structural power and integrated reporting. This was further interpreted using a modgraph in Figure 4.4

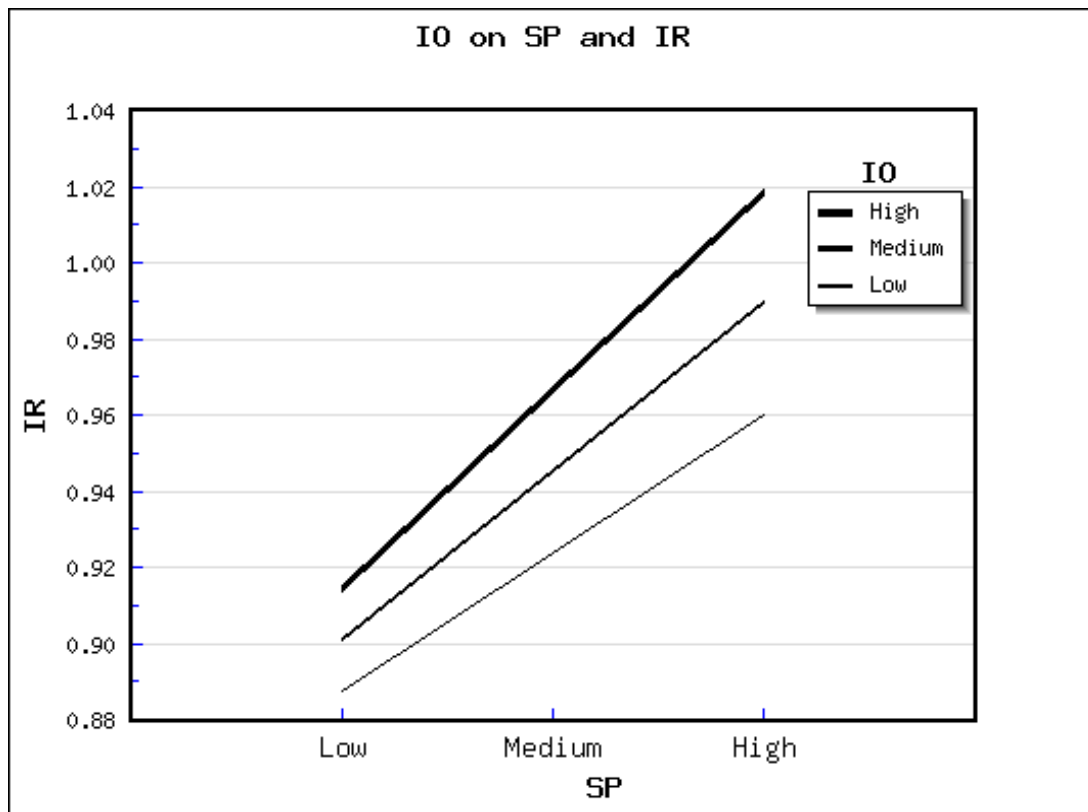


Figure 4.4 Modgraph for the moderating effect of institutional ownership on the relationship between CEO structural power and integrated reporting.

Source: Author (2023)

The modgraph shows that more financial and non-financial information is disclosed in the financial statements when institutional ownership and CEO structural power is high, and vice versa. When the board is more impartial and institutional ownership is substantial, there is a very effective control mechanism in place to make sure the company discloses both financial and non-financial information. However, when institutional investors are few and the board lacks independence, there is a chance that the CEO will not make sure that IIRC requirements are implemented. This is supported by Garcia-Sanchez et al. (2020) who noted that powerful CEOs may decline to employ integrated reporting disclosures and therefore having strong institutional ownership will reduce the powers of the CEOs and hence ensure Integrated reporting.

According to Table 4.27's findings, institutional ownership has a moderating influence on the association between CEO ownership power and integrated reporting that is negative and significant ($\beta=-0.088, p<0.05$). Additionally, the results show that the overall moderating regression model 5b was significant ($R^2 = 0.2124, F(9,603) = 18.07$). The integrated reporting variance may be accounted for by the model up to 21.24%. Showing an increase of 0.014 ($0.2124 - 0.198$) indicating that the variance accounted for with the interaction is considerably greater than the variation accounted for without the interaction. The study concludes that institutional ownership significantly moderates the association between CEO ownership power and integrated reporting. Since the beta coefficient is different from zero, the overall model is significant, and the R^2 change is substantial. The more institutional shareholders there are, the less influence the CEO has and the more control they have over how financial and non-financial information is disclosed. The modgraph in Figure 4.5 gives more clarity in the moderation.

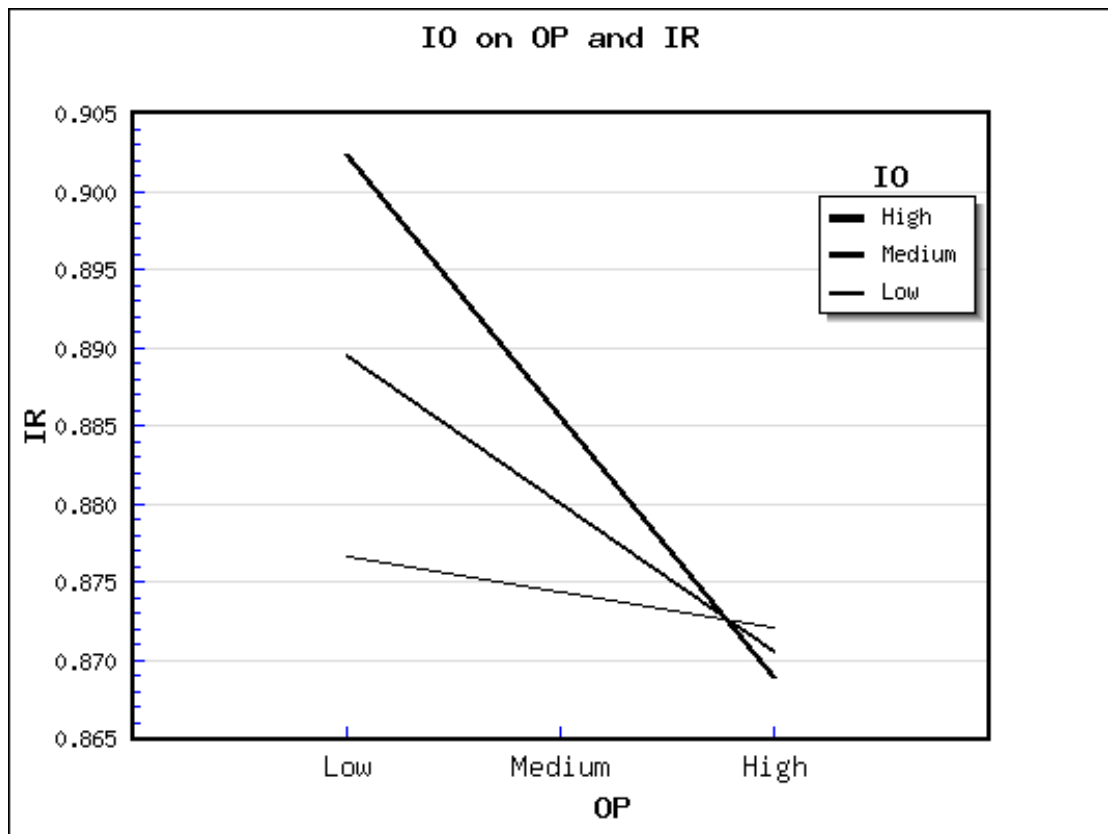


Figure 4.5 Modgraph for the moderating effect of institutional ownership on the relationship between CEO ownership power and integrated reporting

Source: Author (2023)

Figure 4.5 indicates that when institutional ownership is high and CEO ownership power is low, integrated reporting is at its strongest. At low levels of integrated reporting, institutional ownership is low and CEO ownership power is at a high level. This suggests that when the CEO owns a big percentage of shares in the company and the institutional investors are less, there is a likelihood that the firm will not produce a low level of integrated reporting. When CEO increases power by owning more shares in the company, they obtain greater power to implement decisions. Therefore a big percentage of institutional ownership in place will control the type of decisions the CEO makes.

Model 5c sought to check for the moderating effect of institutional ownership in the relationship between CEO expert power and integrated reporting. The results in Table

4.27 show that there is a negative and significant ($\beta=-0.064$, $\rho<0.05$) the moderating effect of institutional ownership in the relationship between CEO expert power and integrated reporting. The results also show that the overall moderation regression model 5c was significant ($R^2 = 0.224$, $F- 10,602 = 17.34$, $\rho<0.05$). This indicates that model 5c accounts for up to 22.36% of the variation in integrated reporting. This presents an increase of 1.2% from the previous model. Meaning that the variance accounted for with the interaction is more than the variation accounted for without the interaction. Therefore IO moderated the relationship between CEO expert power and integrated reporting. The modgraph further shows the levels of moderation in the relationship in Figure 4.6

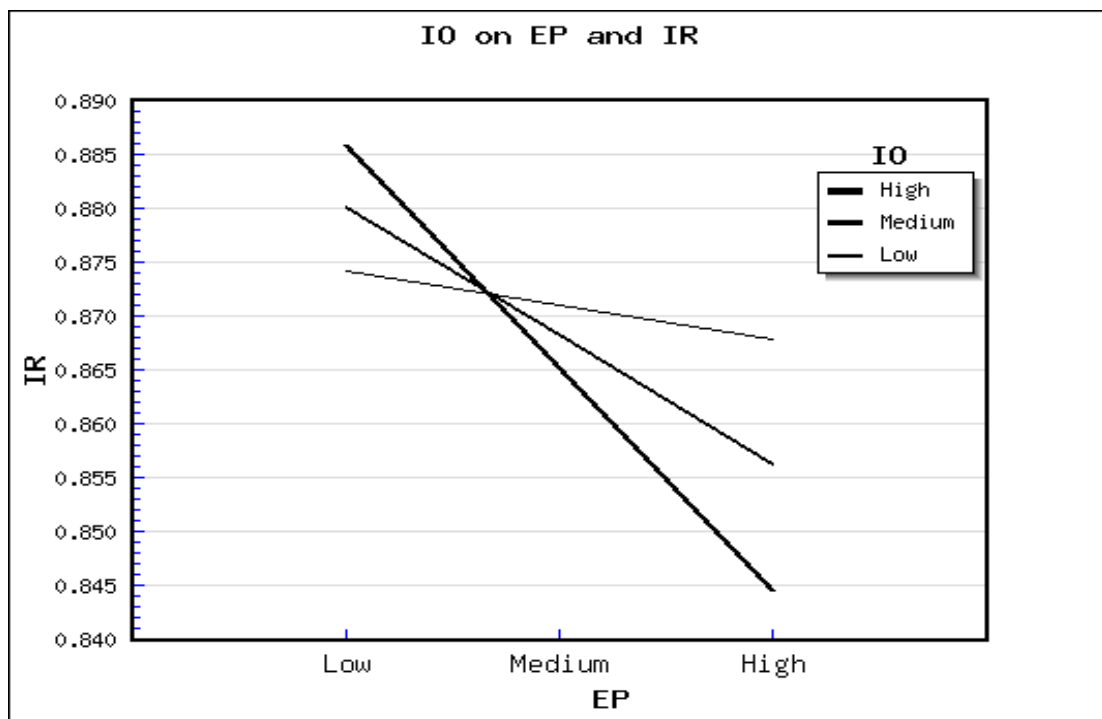


Figure 4.6 Modgraph for the moderating effect of institutional ownership on the relationship between CEO expert power and integrated reporting.

Source: Author (2023)

According to Figure 4.6, integrated reporting is highly valued at a point where institutional ownership is valued highly and CEO expert power is minimal. Where there is less institutional ownership and high CEO expert power, there is less

disclosure of financial and non-financial information. A high institution ownership level and a low level of CEO expertise are essential for the company to disclose both financial and non-financial information. This is due to the fact that as they spend more time working for the companies and have financial experience, they become more familiar with the operations and all the loopholes that they can exploit for their own gain. This is made worse when the institutional ownership level is low because there will be no control mechanism in place to monitor the CEOs' actions. High institutional ownership enables monitoring of the CEOs' operations and guarantees that the financial and non-financial information in the financial statement is disclosed.

Table 4.27 Hierarchical Regression Model for Moderation Effect of Institutional Ownership on CEO power and Integrated Reporting.

Variables		Model 4	Model 5a	Model 5b	Model 5c
Constant	0.931** (0.000)	0.0790** (0.025)	0.824** (0.083)	0.848** (0.083)	0.852** (0.082)
Firm Leverage	-0.0287** (0.007)	-0.063** (0.023)	-0.029** (0.007)	-0.030** (0.007)	-0.031** (0.007)
Firm age	-0.0186** (0.006)	-0.025** (0.007)	-0.020** (0.006)	-0.019** (0.006)	-0.019** (0.006)
Firm Size	-0.119** (0.028)	-0.114** (0.035)	-0.094** (0.029)	-0.097** (0.028)	-0.099** (0.028)
CEOSP	0.048** (0.009)	0.061** (0.011)	0.041** (0.009)	0.040** (0.009)	0.040** (0.009)
CEOOP	0.028** (0.007)	0.0267** (0.008)	0.028** (0.007)	0.027** (0.007)	0.028** (0.007)
CEOEP	0.026** (0.006)	0.033** (0.007)	0.025** (0.006)	0.025** (0.006)	0.024** (0.005)
IO		0.0790** (0.025)	0.066** (0.020)	0.049** (0.021)	0.051** (0.021)
CEOSP × IO			0.088** (0.028)	0.076** (0.028)	0.077** (0.028)
CEOEP × IO				-0.088** (0.026)	-0.071** (0.026)
CEOEP × IO					-0.064** (0.022)
R-squared		0.181	0.198	0.2124	0.224
Δ R-squared		0.018	0.017	0.014	0.036
Hausman Test		0.000	0.000	0.000	0.000
F- Value		19.01	18.59	18.07	17.34
Probability		0.027	0.007	0.000	0.000

** means significance at 5% significance level

(value in parenthesis is the standard error)

Source: Author (2023)

4.6 Mediating Effect of integrated reporting in the relationship between CEO power and earnings quality

The study hypothesized that integrated reporting does not significantly mediate the relationship between CEO power and earnings quality (**H03**). In achieving this hypothesis, Baron and Kenny 1986 conditions of mediation were observed.

Step one: The study conducted a multiple regression analysis with CEO power predicting earnings quality to test for path ‘c’ alone as shown in Table 4.11. The

results demonstrate that CEO structural power ($\beta = -0.4173$, $p < 0.05$), CEO ownership power ($\beta = -0.201$, $p < 0.05$), and CEO expert power ($\beta = -0.176$, $p < 0.05$) have a direct negative and substantial effect on DA. Therefore path c relationship existed and the next step was conducted.

Step two: The study conducted a multiple regression analysis with CEO power predicting integrated reporting to test for path 'a' as shown in Table 4.17. CEO structural power ($\beta = 0.048$, $p < 0.05$), CEO ownership power ($\beta = 0.028$, $p < 0.05$) and CEO expert power ($\beta = 0.026$, $p < 0.05$) had a positive and significant effect on integrated reporting. Hence path 'a' exists.

Step three: Conducted a multiple regression analysis with integrated reporting predicting earnings quality while controlling for CEO power to test the significance of path b alone. The Hausman test confirmed the use of fixed effect to test the relationship as shown in Table 4.20 where the results show a significant negative effect of integrated reporting ($\beta = -0.9221$, $p < 0.05$) on earnings quality. Therefore path b exists and the study proceeded to carry out the mediation analysis.

Finally, step four: The analysis of CEO power and earnings quality while controlling for integrated reporting was carried out to confirm the type of mediation and the results were not zero. Therefore it was not a full but partial mediation as shown in Table 4.23

The Sobel test was then used to explain the significance of the partial mediation by multiplying path a and path b and then inserting the results into the free Sobel test calculator to get the coefficient and p values of the mediation as shown in Table 4.28.

Table 4.28 Sobel test results on the mediation effect.

	Path a	Path b	Path a*b (Sobel)
a ₁	0.048(0.009)**		0.0076 (0.0167) **
a ₂	0.028(0.007)**		0.0138 (0.0106) **
a ₃ b	0.026(0.006)**	0.922(0.299)**	0.0101 (0.0094) **

** means at a 5% significance level

Source: Author (2023)

Integrated reporting mediates the association between structural power and earnings quality, according to the findings of the Sobel test in Table 4.28 ($\beta = 0.0076$ $\rho < 0.05$). This shows that when the CEO has structural influence, integrated reporting improves the quality of results by 0.76 units. Grinstein and Hribar (2004), found that CEOs can use their influence over board decisions to obtain extreme incentives, and Coakley and Iliopoulou (2006), who later found that CEOs receive higher bonuses and salaries when their boards are less independent, may both contribute to this explanation that the CEO should not have a lot of power over the decisions of the firm. When there are control mechanisms in place, CEOs are prevented from using accounting techniques at their discretion to maximize their own benefit by ensuring that both financial and non-financial information is disclosed. Hence, the quality of the earnings improves.

When there is CEO ownership power in a company, there is a likelihood of having integrated reporting published and this could in return increase earnings quality by 0.0138 units. It might be argued that the agency issues when the CEO owns shares in the firm will emerge because the interests of both parties are completely the same. Integrated reporting acts as a mediator between CEOs and shareholders' earnings by ensuring full disclosure and preventing information asymmetry, hence, producing high-quality reports for stakeholders.

The Sobel test also revealed that CEO expert power enhances integrated reporting's ability to predict earnings quality by 0.0101 units. The signaling theory, according to which businesses have several ways to convey information about the firm, was used to explain the willingness of the CEOs to disclose information freely. This is because CEOs may utilize integrated reporting to increase earnings quality and via their financial experience acquired over the period of time worked in the firm (Watts & Zimmerman, 1978; Ross, 1979; Campbell, 2000; Watson *et al.*, 2002; Xiao *et al.*, 2004).

4.7 Moderated Mediated Effect

The study hypothesized that institutional ownership does not significantly moderate the relationship between CEO power and earnings quality via integrated reporting (**H04**). The null hypothesis was rejected since the study results showed that institutional ownership moderates the relationship between CEO power and earnings quality as mediated by integrated reporting as shown in Table 4.29.

The study first calculated the values for moderated mediation by multiplying the coefficient of integrated reporting in path 'b' by the coefficients for each moderated dimension of CEO power (path a!). These values were picked from the summarised Table 4.30. To determine the significance of the moderated mediation, the Sobel test calculator and Goodman test were used as shown in Table 4.30 and Table 4.31 respectively.

The Sobel test and Goodman test results both indicate that CEO structural power is statistically significant ($\beta = -0.0656$, $P < .05$) on earnings quality. Therefore rejecting hypothesis **H04a** (institutional ownership does not significantly moderate the relationship between CEO structural power and earnings quality as mediated through integrated reporting). This means that when CEO's structural powers are controlled

by institutional ownership, they disclose financial and non-financial information, hence, quality earnings.

The tests further showed that institutional ownership moderates the relationship between CEO ownership power ($\beta = 0.0611$, $P < .05$) and earnings quality via integrated reporting. Therefore rejecting hypothesis **H04b** (institutional ownership does not significantly moderate the relationship between CEO ownership power and earnings quality via integrated reporting). That when the CEO holds a percentage of shares in the company, the institutional ownership need to oversee their activities to ensure that they report integrated reporting which in turn will improve the quality of earnings reported.

Additionally, the test of Sobel and Goodman showed that institutional ownership moderated CEO expert power ($\beta = 0.017$, $P < .05$) and earnings quality as mediated by integrated reporting. Hence, rejecting the hypothesis **H04c** (institutional ownership does not significantly moderate the relationship between CEO expert power and earnings quality via integrated reporting). Meaning that, when the CEO has financial expertise and has been in the firm for some time, they need institutional investors to control their actions and behavior that may affect shareholders by ensuring that they report integrated reporting, this will eventually have a positive impact on the quality of earnings.

According to the study findings above, the CEO's structural power, CEO ownership power, and CEO expert power all have a significant positive impact on the DA thus a negative effect on earnings quality. But the quality of earnings can be improved if the company has institutional investors who will ensure that the CEOs do provide financial and non-financial information.

Table 4.29 Summary of study variables

Antecedents	Consequents							
	IR				DA			
FL	Coef.	Std. Err.	95% Conf. interval		Coef.	Std. Err.	95% Conf. interval	
CEOSP	.040226**	.0090152	.0225209	.0579312	-.3815145**	.0668001	-.5127044	-.2503245
CEOOP	.027971**	.0067373	.0147393	.0412022	-.149907**	.0515431	-.2511335	-.0486806
CEOEP	.0241879**	.0054947	.0133968	.0349791	-.1367838**	.0415671	-.2184183	-.0551494
FL	-.031116**	.0072499	-.0453545	-.0168782	.7997857**	.2086829	.3899493	1.209622
FA	-.019328**	.0056335	-.0303918	-.0082645	.0961636**	.042212	.0132627	.1790646
FS	-.099073**	.0281354	-.1543287	-.0438179	.2012729**	.0550307	.0931971	.3093487
IO	.0514677**	.020643	.0109266	.0920088	-.3391344**	.1546482	-.642851	-.0354179
IO*CEOSP	.0767399**	.028286	.0211887	.1322911	-.6137566**	.1615083	-.9309458	-.2965674
IO*CEOOP	-.071390**	.0264361	-.1233083	-.019472	.4893333**	.1843464	.127292	.8513747
IO*CEOEP	-.063513**	.0215499	-.1058354	-.0211913	.6667201**	.2174992	.2395693	1.093871
IR	-	-	-	-	-.8552983**	.2941122	-1.432911	-.2776857

** means at a 5% significance level

Source: Author (2023)

Table 4.30 Index of moderated mediation - Sobel Test

Antecedents	Coef.	Std. Err.	Z values	P values
IO*CEOSP*IR	-0.06563551	0.03308642	-1.9837599	0.04728261
IO*CEOOP*IR	0.0610597	0.03085622	1.97884732	0.0478332
IO*EP*IR	0.0543228	0.02624247	2.07003426	0.03844914

Source: Author (2023)

Table 4.31 Index of moderated mediation - Goodman Test

Antecedents	Coef.	Std. Err.	Z values	P values
IO*CEOSP*IR	-0.06563551	0.03202344	-2.04960804	0.04040270
IO*CEOOP*IR	0.0610597	0.02986056	2.04482949	0.04087167
IO*CEOEP*IR	0.0543228	0.02546558	2.13318555	0.03290951

Source: Author (2023)

4.8 Chapter Summary

This chapter presented the findings of the descriptive statistics, the diagnostic tests, the correlation analysis, the regression analysis, the moderation, the mediation, and the moderation mediation. The assumptions of regressions were tested using diagnostic tests. The data was found to be normal and hence eligible for further investigation after the Jarque-Bera and Shapiro-Wilk tests were used to verify the assumption of normality. The Variance Inflation Factor (VIF) was used to test for

multicollinearity, and the test results revealed that there is no multicollinearity in the research variables because the VIF was less than the recommended 10 and the tolerance was greater than 0.1. The study also utilized the Harris Tzavalis, Levin-Lin-Chu, and Breitung tests to assess stationarity. The findings showed that there was no unit root in the data because all of the p-values were below the accepted significance threshold of 0.05. The Breusch-Pagan and Cook-Weisberg tests were used to examine the data for heteroskedasticity; the findings showed that there was none, (chi2 (1) was 1.39, the p-value was 0.2386). The Wooldridge test excluded the occurrence of autocorrelation since the p-value was 0.2142, which is greater than 0.05.

The means of the untransformed data were; CEO structural power (0.634), CEO ownership power (0.351), CEO expert power (1.026), institutional ownership (0.670), integrated reporting (0.422), earnings quality (-0.523), firm leverage (0.851), firm age (1.352), and firm size (7.605). Based on the results presented in Table 4.9, firm leverage ($\beta = 0.203$, $p < 0.05$), firm age ($\beta = 0.180$, $p < 0.05$) and firm size ($\beta = 0.896$, $p < 0.05$) had a positive and significant effect on DA hence earnings quality. The results of the fixed effect analysis, Table 4.14, show that three of the components of the predictor variable (CEO power that is; CEO structural power, CEO ownership power & expert power, the mediator (institutional ownership and mediator (integrated reporting) had a negative and significant effect on the DA at 5% level of significance.

Table 4.32 Summary of Hypotheses Testing.

	Hypothesis	Findings	Conclusion
Ho _{1a}	CEO structural power has no significant effect on earnings quality among listed firms in East Africa.	$\beta = -0.417$; $\rho = 0.000 < 0.05$	Rejected
Ho _{1b}	CEO ownership power has no significant effect on earnings quality among listed firms in East Africa.	$\beta = -0.201$; $\rho = 0.000 < 0.05$	Rejected
Ho _{1c}	CEO expert power has no significant effect on earnings quality among listed firms in East Africa.	$\beta = -0.176$; $\rho = 0.000 < 0.05$	Rejected
Ho ₂	Institutional ownership does not significantly moderate the relationship between CEO power and earnings quality among listed firms in East Africa.	$\beta = -0.468$; $\rho = 0.003 < 0.05$	Rejected
Ho _{2a}	Institutional ownership does not significantly moderate the relationship between CEO structural power and earnings quality among listed firms in East Africa.	$\beta = 0.670$; $\rho = 0.002 < 0.05$	Rejected
Ho _{2b}	Institutional ownership does not significantly moderate the relationship between CEO ownership power and earnings quality among listed firms in East Africa.	$\beta = 0.452$; $\rho = 0.003 < 0.05$	Rejected
Ho _{2c}	Institutional ownership does not significantly moderate the relationship between expertise power and earnings quality among listed firms in East Africa.	$\beta = -0.606$; $\rho = 0.000 < 0.05$	Rejected
Ho _{3a}	There is no significant mediating effect of integrated reporting on the relationship between CEO structural power and earnings quality among listed firms in East Africa.	$\beta = 0.0076$; $\rho = 0.0167 < 0.05$	Rejected
Ho _{3b}	There is no significant mediating effect of integrated reporting on the relationship between CEO ownership power and earnings quality among listed firms in East Africa.	$\beta = 0.0138$; $\rho = 0.0106 < 0.05$	Rejected
Ho _{3c}	There is no significant mediating effect of integrated reporting on the relationship between CEO expert power and earnings quality among listed firms in East Africa.	$\beta = 0.0101$; $\rho = 0.0094 < 0.05$	Rejected
Ho _{4a}	Institutional ownership does not moderate the relationship between CEO power and earnings quality as mediated by integrated reporting among listed firms in East Africa.	$\beta = -0.656$; $\rho = 0.0473 < 0.05$	Rejected
Ho _{4b}	Institutional ownership does not moderate the relationship between CEO ownership power and earnings quality as mediated by integrated reporting among listed firms in East Africa.	$\beta = 0.061$; $\rho = 0.0748 < 0.05$	Rejected
Ho _{4c}	Institutional ownership does not moderate the relationship between CEO expert power and earnings quality as mediated by integrated reporting among listed firms in East Africa.	$\beta = 0.054$; $\rho = 0.038 < 0.05$	Rejected

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Overview

The main objective of this chapter is to provide a summary of the findings, draw a conclusion and make necessary recommendations based on the quantitative analysis presented in chapter four. The conclusion relates directly to the specific objectives, while the recommendations are deducted from the conclusion and the findings. The chapter is structured into sections: summaries of findings, conclusions, and recommendations of the study and areas for further studies.

5.2 Summary of Findings

The main objective of the study was to investigate the moderating effect of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting among listed firms in East Africa. The CEO power dimensions were; CEO structural power, CEO ownership power, and CEO expert power. The moderating variable was institutional ownership, the mediator integrated reporting and the dependent variable was earnings quality. The target population for the study comprised 117 firms with a sample size of 78 firms listed in East Africa (NSE, DSE, USE & RSE). 9-year data analysis was conducted for the period 2013 to 2021, resulting in a total of 702 firm-year observations. The choice of all listed firms in East Africa in the study was informed by the fact that they use the same regulations and are moving towards having a common market. Also, the fact that most of the firms are cross-listed hence affecting their performance across.

This section summarizes the findings based on the study's objectives. The first objective of the study was to investigate the relationship between CEO power and earnings quality among listed firms in East Africa. The second objective of the study

was to establish the moderating role of institutional ownership on the relationship between CEO power and earnings quality among listed firms in East Africa. The third objective of the study was to investigate the mediating effect of integrated reporting on the relationship between CEO power and earnings quality among listed firms in East Africa. The fourth objective was to establish the moderating role of institutional ownership on the relationship between CEO power and earnings quality through integrated reporting among listed firms in East Africa. The hypothesis was drawn from these objectives and tested. The findings established by the study were summarized below.

5.2.1 Summary of the Descriptive Results

The study's descriptive results indicate that on average, firms do not engage in earnings manipulation to the extent of 52.3%. supported by the findings of Ball & Foster (1982) but contrary to the findings of Watts and Zimmerman (1986), who found out that managers in organizations with earnings-based pay covenants have the incentive to falsify earnings in order to maximize their reward by adopting income-increasing accounting procedures. Also, Schipper (1989) demonstrated the influence of knowledge asymmetry between firm management and firm shareholders on manipulation.

5.2.2 Summary of the Correlation Results

Comparable with the findings in the previous studies, the Pearson correlation coefficients indicate a negative and significant association between CEO structural power ($r = -0.417$) and earnings quality. This is consistent with (Assenso-Okofu, Ali & Ahmed, 2021; Chatterjee & Hambrick, 2007; Grinstein & Hribar, 2004; Badertscher *et al.*, 2010; Eckles & Halek, 2007). The results further show that there is a negative and significant association between ownership power ($r = -0.3254$) and

earnings quality. This is supported by (Sharma & Kuang, 2014; Ding *et al.*, 2007; Yassin *et al.*, 2010; Chatterjee & Hambrick, 2010; Al-Fayoumi, Abuzayed & Alexander, 2010; Mitani, 2010; Kazemiana & Sanusib, 2015). Lastly, the results demonstrated a negative and significant relationship between expert power ($r = -0.1832$) and earnings quality. This was also agreed by the findings of (Jiang *et al.*, 2013; Ran, Fang, Luo, & Chan, 2015; Jiang *et al.*, 2013; Ali & Zhang, 2015; Qawasmeh & Azzam, 2020). Furthermore, the results of the correlation indicated a negative and significant association between integrated reporting ($r = -0.3390$) and earnings quality, as supported by the finding of (Francis *et al.*, 2008; Karajeh, 2019; Ebrahimabadi & Asadi, 2016; Verrecchia, 1990; Francis *et al.*, 2008; Yeh *et al.*, 2014; Rouf & Akhtaruddin, 2018; Grigoris, 2014). Additionally, a negative and significant association between institutional ownership ($r = -0.1183$) and earnings quality. This is also agreed with (Nurleni & Bandang 2018; Arif, 2006).

5.2.3 Summary of the Regression Results

The results of regression analysis have revealed that CEO power has an impact on earnings quality among listed firms in East Africa while institutional ownership moderates the relationship between CEO power and earnings quality. Additionally, further regression results have shown that integrated reporting mediates the relationship between CEO power and earnings quality as well as mediating the moderated CEO power by institutional ownership and earnings quality.

Discretionary accruals were used to assess the quality of earnings (Kothari, 2005). The more negative values of discretionary accrual, which indicate a reverse link between this indicator and earnings quality, the higher the quality of earnings. The CEO power dimensions (CEO structural power, CEO ownership power, and CEO expert power) revealed a strong and negative relationship with DA, but a significant

and positive relationship with integrated reporting. Institutional ownership demonstrated a negative and significant relationship with earnings quality, but a significant and positive relationship with integrated reporting. Lastly, integrated reporting had a strong and negative relationship with earnings quality. The detailed findings are as below.

5.2.3.1 Summary of regression results on CEO Power and earnings quality

Investigating the relationship between CEO power and the quality of earnings at east African listed companies was the first objective. Overall findings suggest that 16.49% of the variation in earnings quality is accounted for by CEO power. Other elements beyond the ones being studied make up the balance. Therefore, it can be inferred that CEO power affects the quality of earnings and that hypothesis H_{01} (CEO power has no significant effect on earnings quality among listed firms in East Africa) was rejected and concluded that CEO power significantly affects earnings quality.

5.2.3.1.1 CEO structural power and earnings quality

Board independence was used to measure CEO structural power and the results of the regression revealed that CEO structural power significantly and negatively impacted DA ($\beta = -0.417$, $p < 0.000$) thus positive affect earnings quality. The H_{01a} - CEO structural power has no significant effect on earnings quality was rejected and the alternative hypothesis was accepted. - CEO structural power affects earnings quality. An increase in CEO structural power by one unit leads to an improvement in earnings quality by 41.7%.

5.2.3.1.2 CEO ownership power and earnings quality

The ratio of the CEO's shares to the total company's shares was used to calculate CEO ownership power and the results revealed that CEO has greater influence and is not

likely to manipulate earnings if they own more shares of the company. The regression findings showed that the influence on DA was negative and significant ($\beta = -0.201$, $p < 0.000$) thus positive quality earnings. CEO ownership power has an impact on earnings quality, contrary to H_{01b} (Ownership power has no significant effect on earnings quality). The earnings quality changes positively by 20.1% for every unit change in CEO ownership power.

5.2.3.1.3 CEO expert power and earnings quality

The CEO's professional qualification and length of service with the organization were used to calculate CEO expert power. The findings showed a negative and statistically significant ($\beta = -0.176$, $p < 0.000$) impact on DA. CEO expert power considerably affects earnings quality, hence H_{01c} (CEO expert power has no significant effect on earnings quality) was rejected, for every one unit improvement in CEO expert power leads to 17.6% increase in earnings quality.

5.2.4 Summary of the relationship between CEO power and integrated reporting

The influence of CEO power on integrated reporting was positive and significant ($R^2 = 0.172$, $p < 0.000$). Meaning that there was a connection between integrated reporting and CEO power, and that's why path a's moderation test was conducted.

The regression results showed that CEO structural power had a favorable and statistically substantial ($\beta = 0.0483$, $p < 0.05$) impact on integrated reporting. The findings also showed that CEO ownership power has a favorable and significant ($\beta = 0.0283$, $p < 0.05$) impact on earnings quality. The final set of findings demonstrated that the influence of CEO expert power on integrated reporting was both positive and significant ($\beta = 0.0283$, $p < 0.05$). The length of the CEO's tenure and his professional

experience had an impact on the number of disclosures the company made while presenting its financial statements.

5.2.5 Summary of the moderating effect of institutional ownership in the relationship between CEO power and earnings quality.

The results of the moderation indicated that institutional ownership moderates the relationship between CEO power and earnings quality ($R^2 = 0.2175$, $p < 0.000$), hence rejecting the **H₀₂** (institutional ownership does not significantly moderate the relationship between CEO power and earnings quality). The summary of the moderating hypothesis is as follows:

5.2.5.1 Moderating effect of institutional ownership in the relationship between CEO structural power and earnings quality.

It was determined that institutional ownership significantly moderated the relationship between CEO structural power and earnings quality ($\beta = 0.670$, $p < 0.05$), and **H_{02a}** (Institutional ownership does not significantly moderate the relationship between CEO structural power and earnings quality) was rejected. Earnings quality is impacted by CEO structural power prior to any interactions ($\beta = -0.419$, $p < 0.05$) that the relationship between CEO structural power and earnings quality is buffered by institutional ownership. In order to achieve the optimal state, institutional ownership must be low and CEO structural power must be high, as depicted in modgraph diagram 4.1.

5.2.5.2 Moderating Effect of institutional ownership in the relationship between CEO ownership power and earnings quality.

H_{02b} (Institutional ownership does not significantly moderate the association between CEO ownership power and earnings quality) was rejected and concluded that

institutional ownership does indeed moderate the relationship between CEO ownership power and earnings quality. Institutional ownership increases earnings manipulation as a result of the moderating effect, which is buffered $\beta = 0.543$, $p < 0.05$). As a result, for good-quality earnings, CEO ownership power should be low and institutional ownership should be strong, as the modgraphs clearly showed the moderation.

5.2.5.3 Moderating effect of institutional ownership in the relationship between CEO expert power and earnings quality

The study results indicate that institutional ownership significantly moderates the relationship between CEO expert power and earnings quality. The hypothesis - **Ho2c** (Institutional ownership does not significantly moderate the relationship between CEO expert power and earnings quality) was not supported. The relationship between CEO expert power and earnings quality could be improved by the existence of institutional shareholding. The modgraph also emphasized that strong institutional investors are necessary for the company to have high-quality earnings, in addition to the CEO's financial expertise and length of service.

5.2.6 Summary of the Mediation Results

The findings of the Sobel test supported the significance of each dimension of CEO power and earnings quality through integrated reporting. This result was reached after completing all four steps of mediation; Testing paths 'c' (regressing earnings quality on CEO power), path 'a' (regressing integrated reporting on CEO power), and path 'b' (regressing earnings quality on integrated reporting while controlling for all the dimensions of CEO power and the control variables), and then multiplying the results in paths 'a' and 'b' with each other and using the Sobel test to determine the significance of the mediation. It is implied that the mediation took place because CEO

structural power ($\beta = 0.0076$, $\rho < 0.05$), CEO ownership power ($\beta = 0.0138$, $\rho < 0.05$), and CEO expert power ($\beta = 0.0101$, $\rho < 0.05$) were all significant.

5.2.7 Summary of the moderating effect of institutional ownership in the relationship between CEO power and integrated reporting

This was a path to moderation mediation analysis. Therefore before the study could moderate mediate, there had to exist a moderating effect of institutional ownership between CEO power and integrated reporting (path a!). The results indicated that institutional ownership moderated all the dimensions of CEO power and integrated reporting. Before any moderations, CEO power contributed 17.20% variation in integrated reporting and after moderation of institutional ownership, CEO power contributed 22.36% variation in integrated reporting. Meaning that yes, institutional ownership enhances the relationship between CEO power and earnings quality by 5.16% (from 17.20% without moderation to 22.36% without moderation). Individually; Institutional ownership moderated; structural power ($\beta = 0.0767$, $\rho < 0.05$) being a contribution of 2.48% (0.0767 from 0.0483), ownership power ($\beta = 0.0714$, $\rho < 0.05$) contributing 4.31% (0.0714 from 0.0283) and expert power ($\beta = 0.0635$, $\rho < 0.05$) contributing 3.71% (0.0264 to 0.0635) on integrated reporting. Moderation in path 'a' was confirmed and the study proceeded to investigate the existence of moderated mediation in the study.

5.3 Summary of Moderated Mediation Results

The main objective of the study was to examine the moderating role of institutional ownership in the relationship between CEO power and earnings quality as mediated by integrated reporting. The findings indicated that there was a moderated mediation in the study because all of the moderated dimensions of CEO power were significant (from the Sobel test calculator and Goodman test). Companies may engage in

earnings manipulation, but if they adopt integrated reporting, it may lessen agency problems, improving the quality of earnings. The CEO's ability to ensure the presentation of financial and non-financial information is impacted equally by institutional ownership.

5.4 Conclusion

The study sought to investigate the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting. Through an extensive literature review, the study developed a conceptual framework that aided the formulation of research hypotheses. The data was obtained from audited annual financial reports for a period of 9 years. These reports were obtained from the firm's website and the Capital Market Authority's annual reports.

5.5 Study Implications and Recommendations

The study findings resulted in several recommendations and implications which can be broadly grouped into managerial and policy implications and theoretical implications.

5.5.1 Policy and Practical Recommendations

The results revealed that when there is the presence of institutional investors, the firms are more likely to publish integrated reports, and the quality of earnings is improved too. Thus, the study recommends that firms impress institutional investors because they can diligently monitor the operations of the company as they have the resources, expertise and stronger incentives to actively oversee the actions of CEOs and prevent CEOs' opportunistic behavior.

The study recommends that the firms may impress the expertise of the CEO and the time spent in the firm. When the CEO has expertise in the area of finance, they

understand the value and the kind of information the investors need from the financial statement, and are able to ensure that the company publishes integrated reports. This in return could reduce the information asymmetry and eventually could improve the earnings quality. The study also suggests that the CEO could be allowed to work in the firm for a longer period, because they get more familiar with the team and the consistency of the firm's core business activities which could lead to high-quality earnings.

The results may potentially be valuable for East African listed firms contemplating to adopt and disseminate the IR in their annual reports in the future in improving the quality of their earnings. The study has revealed that when there is integrated reporting, the firm is likely to have high-quality earnings. Therefore firms are encouraged to publish integrated reporting to enhance the quality of earnings reported.

After the many scandals that have occurred, shareholders are now demanding more information than the mandatory ones (as per the company's Act) for more transparency and accountability. Therefore, shareholders will be more satisfied when companies publish integrated reports. The study suggests that the best practice could be that firms publish integrated reports as this will reduce the information asymmetry and eventually could improve the earnings quality and the firm value at the end.

5.5.2 Theoretical Implications

The research findings have several implications for academicians as it extends to the body of knowledge on the importance of CEO power (CEO structural power, CEO ownership power & CEO expert power) in ensuring quality earnings in emerging markets such as those in East Africa Stock Exchanges that thrive in developing nations (Kenya, Uganda, Tanzania & Rwanda).

This is also a great scholarly contribution in determining and justifying the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting. The findings indicate that institutional ownership moderates the effectiveness and efficiency of CEOs in constraining earnings manipulation and furthermore, integrated reporting produces financial and non-financial information, thus reducing the information asymmetry and this leads to high-quality earnings. It also promotes insights into the function of CEO power in business management and the level of company transparency.

The study adds to the theory of upper echelons by emphasizing the part that CEOs play in firms' perceived earning quality. CEOs as the upper echelon of a company manipulate resources for their own gain which degrades the quality of earnings. Accordingly, the study contends that there are trade-offs between the advantages and disadvantages of giving a CEO more ownership power. As a result, control mechanisms, such as institutional investors, should be in place to limit their power and ensure that the firms present integrated reporting which will in return results in earnings quality.

The study's findings support agency theory, which suggests that monitoring mechanisms such as institutional investors are important in order to avoid agency conflict between CEOs and shareholders. This conflict may be reduced by integrated reporting, which can also align the CEO's and shareholders' interests. Companies must, however, provide high-quality information in order to report quality earnings and demonstrate a company's capacity for long-term value creation. Firms should have institutional investors since they have robust mechanisms to monitor the CEOs' efforts in delivering integrated reports, which results in high-quality earnings.

The findings agree with the Signaling theory which proposes that signaling could assist stakeholders in better assessing the company's worth and making more favorable decisions (Whiting & Miller, 2008) and to eliminate information asymmetry, signaling theory ensures that companies publish integrated reporting. This is supported by the agency theory, which states that when insiders and shareholders have different information, shareholders will seek more information from management (Grossman & Hart, 1980; Verrecchia, 1990). As a result, integrated reporting will reduce information asymmetry, resulting in high-quality earnings reported.

This research expands the list of factors (CEO structural power, CEO ownership power & CEO expert power) that influence integrated reporting beyond those already mentioned in the literature, such as national culture (Raimo *et al.*, 2019; Vitolla, Raimo, Rubino & Garzoni, 2019a), assurance and location (Bavagnoli *et al.*, 2018), stakeholder pressure (Vitolla, Raimo, Rubino & Garzoni, 2019b), and board characteristics (Vitolla, *et al.*, 2019a). The study also contributes to the first body of research on the moderating role of institutional ownership on the relationship between CEO power and earnings quality as mediated by integrated reporting.

5.5.3 Managerial recommendations

The study extends the agency theory, particularly for the role of the CEO. This is based on clear identification of the investor-oriented approach of the IR with consequent analysis of the role of the CEO power in disclosure policies and in the monitoring and control functions of the institutional ownership in ensuring earnings quality. In particular, this study demonstrated how the CEO power and the presence of the institutional investors as a monitoring and control mechanism ensure that firms present integrated reporting, which in turn leads to quality earnings.

5.6 Limitations and Recommendations for Further Research

It was difficult to obtain data on CEO Pay Slice (CEOPS) and CEO Pay Gap (CEOPG) since it is not mandatory to disclose these types of information like the remuneration of CEOs in the listed firms in East Africa (developing countries), hence the researcher used board independence alone, explaining why the results may have been different from those of developed economies.

It is common for scores based on content analysis to suffer from subjectivity (Kiliç & Kuzey, 2018), the IR score may have suffered from subjectivity because this study used the content elements required in the IIRC framework to measure integrated reporting. Also, the results may be only valid for integrated reports that are prepared in line with the framework. Future researchers could also use a different measure of integrated reporting like the guiding principles of the IIRC framework like strategic focus & future orientation; connectivity of information; stakeholder relationships; materiality; conciseness; reliability & completeness; consistency & comparability to see if the results will be any different as far as financial and non-financial reporting is concerned.

The study used discretionary accruals to estimate earnings quality and adopted the model by Kothari, (2005). Future research could use other proxies, such as real earnings management, to further enhance the relevance of the findings. In future research. It would also be desirable to hold interviews with stakeholder groups to observe their role and demand in the integrated reporting.

The study focused on the firms listed in East Africa only and therefore future researchers could explore the role of CEO power on earnings quality in other contexts, especially in other developing countries. Further studies could also look at

other determinants of; earnings quality, institutional ownership, and integrated reporting other than CEO power. Equally other researchers could consider other different variables as moderators or mediators other than those that were used in the study (institutional ownership and integrated reporting respectively).

As a final disclaimer, the findings may not be generalizable to developing countries with a high level of IR disclosures.

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APPENDICES

Appendix I: Target Population: Firms Listed in East Africa

No	Company	Sector	Listed
	Nairobi Securities Exchange		
1	Eaagads Limited	Agriculture	1972
2	Kakuzi Limited	Agriculture	1951
3	Kapchorua Tea Factory Ltd	Agriculture	1972
4	Limuru Tea Kenya Ltd	Agriculture	1967
5	Sasini Ltd	Agriculture	1965
6	Williamson Tea Kenya Ltd	Agriculture	1972
7	Car and General (Kenya) Ltd	Automobiles & Accessories	1950
8	ABSA Bank Kenya Plc.	Banking	1986
9	Diamond Trust Bank Kenya Ltd	Banking	1972
10	Equity Group Holdings Plc.	Banking	2006
11	HF Group Plc.	Banking	1992
12	I & M Holdings Plc.	Banking	2013
13	KCB Group Plc.	Banking	1989
14	NCBA Group Plc.	Banking	
15	Stanbic Holdings Ltd.	Banking	
16	Standard Chartered Bank Kenya Ltd.	Banking	1988
17	The Co-operative Bank of Kenya Ltd	Banking	2008
18	Deacons East Africa PLC	Banking	2016
19	Eveready East Africa Ltd.	Banking	2006
20	Express Kenya Limited	Banking	1978
21	Homeboyz Entertainment Plc.	Commercial & Service	2020
22	Kenya Airways Limited	Commercial & Service	1996
23	Longhorn Publishers Limited	Commercial & Service	2012
24	Nairobi Business Ventures Limited	Commercial & Service	2016
25	National Media Group Limited	Commercial & Service	1973
26	Sameer Africa Plc	Automobiles & Accessories	1994

27	Standard Group Limited	Commercial & Service	1954
28	TPS Eastern Africa Limited	Commercial & Service	1997
29	Uchumi Supermarket Limited	Commercial & Service	1992
30	WPP Scan Group Limited	Commercial & Service	2006
31	ARM Cement Plc.	Construction & Allied	1997
32	Bamburi Cement Ltd.	Construction & Allied	1951
33	Crown Paints Kenya Plc.	Construction & Allied	1992
34	E.A Cables Ltd.	Construction & Allied	1973
35	E.A Portland Cement Ltd.	Construction & Allied	1972
36	KenGen Plc.	Energy and Petroleum	2006
37	Kenya Power & Lighting Plc.	Energy and Petroleum	1954
38	Total Kenya Ltd.	Energy and Petroleum	1988
39	Umeme Ltd	Energy and Petroleum	2012
40	Britam Holdings Plc.	Insurance	2011
41	CIC Insurance Group Ltd.	Insurance	2012
42	Jubilee Holdings Ltd	Insurance	1984
43	Kenya Re-Insurance Corporation Ltd.	Insurance	2006
44	Liberty Kenya Holdings	Insurance	2007
45	Sanlam Kenya Plc.	Insurance	1963
46	Centum Investment Plc.	Investment	1977
47	Home Afrika Ltd.	Investment	2013
48	Kurwitu Ventures Ltd.	Investment	2014
49	Olympia Capital Holdings Ltd.	Investment	1974
50	Trans - Century Plc.	Investment	2011
51	Nairobi Securities Exchange Plc.	Investment Services	2014
52	B.O.C Kenya Plc.	Manufacturing and allied	1969
53	BAT Kenya Plc.	Manufacturing and allied	1969
54	Carbacid Investments Plc.	Manufacturing and allied	1972
55	East African Breweries Ltd.	Manufacturing and allied	1972
56	Flame Tree Group Holdings Ltd.	Manufacturing and allied	2015

57	Kenya Orchards Ltd.	Manufacturing and allied	1959
58	Mumias Sugar Co. Ltd	Manufacturing and allied	2001
59	Unga Group Ltd.	Manufacturing and allied	1971
60	Safaricom Plc.	Telecommunication & Technology	2008
61	ILAM Fahari I-REIT	Real Estate Investment Trust	2015
Uganda Securities Exchange			
1	BAT Uganda Ltd	Consumer Goods	2000
2	East African Breweries Ltd	Consumer Goods	2001
3	Kenya Airways	Consumer Services	2002
4	Nation Media Group	Consumer Services	2010
5	Uchumi Supermarkets	Consumer Services	2013
6	Vision Group	Consumer Services	2004
7	Bank of Baroda (Uganda) Ltd	Banking	2002
8	Centum Investment	Investment	2011
9	DFCU Ltd	Banking	2004
10	Equity Group	Banking	2009
11	Jubilee Holdings Ltd	Insurance	2006
12	Kenya Commercial Bank Ltd	Banking	2008
13	NIC Holdings	Banking	2010
14	Stanbic Bank Uganda Ltd	Banking	2007
15	Cipla Quality Chemical Industries Ltd	Health Care	2018
16	Uganda Clays Ltd	Industrials	2000
17	Umeme Ltd	Utilities	2012
18	MTN Uganda	Telecommunication	2021
Tanzania Securities Exchange			
1	TOL Gases	Basic Materials	1998
2	East African Breweries	Consumer Goods	2005
3	Jatu	Consumer Goods	2020
4	Tanzania Breweries	Consumer Goods	1998

5	Tanzania Cigarette Company	Consumer Goods	2000
6	Tanzania Tea Packers (TATEPA)	Consumer Goods	1999
7	Kenya Airways	Consumer Services	2004
8	Nation Media Group	Consumer Services	2011
9	Precision Air Services	Consumer Services	2011
10	Uchumi Supermarket	Consumer Services	2014
11	CRDB Bank	Banking	2009
12	Dar es Salaam Commercial Bank	Banking	2008
13	KCB Group	Banking	2008
14	Maendeleo Bank	Banking	2013
15	Mkombozi Commercial Bank	Banking	2015
16	Mucoba Bank	Banking	2016
17	Mwalimu Commercial Bank	Banking	2015
18	National Microfinance Bank Plc	Banking	2008
19	Yetu Microfinance	Banking	2016
20	Jubilee Holdings	Insurance	2006
21	National Investments Company (NICOL)	Mutual Fund	2018
22	TCCIA Investment	Mutual Fund	2018
23	Dar es Salaam Stock Exchange	Stock Exchange	2016
24	Swissport Tanzania	Industrials	2003
25	Tanga Cement Company	Industrials	2002
26	Tanzania Portland Cement Company	Industrials	2006
27	Swala Oil and Gas (Tanzania)	Oil & Gas	2014
28	Vodacom Tanzania	Telecom	2017
	Rwanda Stock Exchange		
1	Bralirwa	Consumer Goods	2011
2	Nation Media Group	Consumer Services	2010
3	Uchumi Supermarkets	Consumer Services	2013
4	BK Group	Financials	
5	Equity Group	Financials	2015

6	I&M Bank Rwanda	Financials	2012
7	KCB Group	Financials	2009
8	RH Bophelo	Health Care	2020
9	CIMERWA	Industrials	2020
10	MTN Rwanda cell	Telecommunications	
	Total Firms	117	

Appendix II: Inclusion/exclusion criteria

Appendix II a: Cross listed firms in East Africa

	Company	Primary listing	Country where cross listed
1	East African Breweries Ltd	NSE	USE, DSE
2	Equity Bank	NSE	USE, RSE
3	Centum Investments	NSE	USE
4	Kenya Airways	NSE	USE, DSE,
5	Jubilee Holdings Ltd	NSE	USE, DSE
6	Umeme Ltd	USE	NSE
7	Kenya Commercial Bank (KCB)	NSE	USE, RSE, DSE
8	Nation Media Group	NSE	USE, RSE, DSE
9	Bank of Kigali	RSE	NSE
10	Uchumi Supermarkets	NSE	USE, RSE, DSE

Source: Researchers' Compilation from Stock Exchanges in East Africa and Companies' websites

Appendix II b: Suspended firms in East Africa

	Company	Primary listing	Year of suspension
1	Deacons East Africa PLC	NSE	2018
2	Mumias Sugar	NSE	2019
3	Kenya Airways	NSE	2020
4	Uchumi supermarket	NSE	2019

Source: Researchers' Compilation from Stock Exchanges in East Africa and Companies' websites

Appendix II c: Firms newly listed

Company	Year of listing
1 Flame Tree Group Holdings Ltd.	2015
2 ILAM Fahari I-REIT	2015
3 Mkombozi Commercial Bank	2015

4	Mwalimu Commercial Bank	2015
5	Mucoba Bank	2016
6	Yetu Microfinance	2016
7	Dar es Salaam Stock Exchange	2016
8	Vodacom Tanzania	2017
9	TCCIA Investment	2018
10	Jatu	2020
11	Cipla Quality Chemical Industries Ltd	2018
12	MTN Uganda Ltd	2021
13	MTN Rwandacell	2021
14	Nairobi Business Ventures Limited	2016
15	Homeboyz Entertainment Plc.	2020

Source: *Researchers' Compilation from Stock Exchanges in East Africa and Companies' websites*

**Appendix III: International Integrated Reporting Framework (IIRF) guidelines
based on International Integrated Reporting Council (IIRC)**

Appendix III a: Guiding principles, content elements and fundamental concepts

Guideline Principles	Content Element	Fundamental Concepts
Strategic focus and future orientation	Organizational overview and external environment	Value creation for the organization and for others and the capitals
Connectivity of information	Governance	
Stakeholder relationships	Business model	
Materiality	Risk and opportunities	
Conciseness	Strategy and resource allocation	
Reliability and completeness	Performance	
Consistency and comparability	Outlook	
	Basis of preparation and presentation	

Appendix III b: Content Element Summarized index

Content Element	No. of Disclosed Items	Score
Organizational overview and external environment	7	16
Governance	7	12
Business model	5	10
Risk and opportunities	3	8
Strategy and resource allocation	4	6
Performance	6	13
Outlook	3	4
Basis of preparation and presentation	3	5
	38	74

Appendix III c: Detailed index

Content Element		Disclosure Item	Marking guidelines	Score
Organizational overview and external environment	1	Vision and mission	0= Not Disclosed; 1=Vision; 1=Mission	2
	2	Value, ethics and culture	0= Not disclosed; 1= general comments on the adherence to ethical values mentioned; 2= Code of conduct reference, list of values, etc., provided.	2
	3	Ownership and operating structure	0 = Not disclosed; 1 = Ownership and operating structure described	1
	4	Principal activities, markets, products, services	0 = No specifics on principal activities disclosed; 1= Activities/markets/products services listed	1
	5	Competitive landscape, market positioning, and positioning within the value chain	1 mark for each	3
	6	Key quantitative information	[Employees, revenues, locations and changes] 1 = 1–2 elements; 2 = 3–4 elements	2
	7	Significant factors affecting external environment and the organization's response	[Legal, commercial, social, environmental, political] maximum of 5 points, 1 for each context	5
		Sub - Score		16
	1	Leadership structure, diversity, and skill set of those charged with governance	1 = Members of the BoD listed; 2 = Their experience and skills are listed as well	2
	2	Processes used to make strategic decisions and monitor culture including its attitude to risk and mechanisms for addressing integrity and ethical issues	0 = Not explained; 1 = Role of board/executive committee in making strategic decisions explained; 1 = Role of risk management committee in monitoring the strategic direction explained.	2
	3	Actions taken to monitor and influence strategic direction and its approach to risk management	0 = No actions determinable; 1 = Actions taken to monitor the strategic direction is determinable; 2= Actions	2

Governance			taken to manage risks is determinable	
	4	Reflection of culture and ethical values in use of and effect on the capitals, relationship with key stakeholders	0 = No explanation of cultural values/ethics in the given context; 1 = Culture and values determinable from narrative; 2 = Culture and values reflect in the use of and effects on capitals/stakeholders	2
	5	Responsibility for promoting and enabling innovation by governance agents	0 = No disclosure; 1 = Responsibility for promoting innovation is mentioned	1
	6	Governance practices exceeds legal requirements	0 = No disclosure; 1 = Explanations provided.	1
	7	Compensation policies and plans	1 = Compensation policies and plans are determinable; 2 = Compensation policies and plans are linked to the value creation	2
		Sub – Score		12
Business model	1	Diagrammatic presentation	0 = No diagram; 1 = Diagram provided	1
	2	Key elements of the business model	1 each for input, business activities, output and outcome.	4
	3	Narrative flow based on the business model	0 = No explanation provided; 1 = Good flow of explanation provided.	1
	4	Critical stakeholders' identification and other dependencies	0 = No stakeholder engagement described; 1 = Explicit stakeholder engagement described	1
	5	Connection to information covered in other content elements (e.g., strategy, risk, and opportunities and performance)	0 = No connection provided; 1 = 1–2 aspects described; 2 = 3–4 aspects described; 3 = more than 4 aspects described	3
		Sub – Score		10
Risk and opportunities	1	Key risks and opportunities	1 = Risks described; 1 = Opportunities described	2
	2	Assessment of the likelihood and impact	1 for each; explanation of the risk likelihood, explanation of the opportunity likelihood, magnitude of impact of risk	4

			and magnitude of impact of opportunity	
	3	Steps to mitigate/manage risk or create value from opportunity	1 = Steps to mitigate/manage risk provided; 1 = Steps to create value from opportunity provided	2
		Sub – Score		8
Strategy and resource allocation	1	Short, medium, long term strategic objectives	0 = No description provided; 1 = Strategic objectives stated without relevant time frame; 2 = Strategic objectives and their time frames are listed	2
	2	Strategies in place or plan to implement to achieve the objectives	0 = No specific description provided; 1 = Specific actions taken/planned are described	1
	3	Resource allocation plan to implement strategies	0 = No plan explained; 1 = Plan explained	1
	4	Measurement of achievements and target outcomes	0 = Not disclosed; 1 = Measurement of achievement of strategic objectives stated without relevant time frame disclosed; 2 = Measurement of achievement of strategic objectives with their time frames are listed.	2
		Sub – Score		6
Performance	1	Key Performance Indicators (KPIs) that draws relationship between financial performance and performance regarding other capitals	0 = No mixed KPIs or equivalent disclosed; 1 = A mix of financial and other KPIs or equivalent disclosed; 2 = KPIs linking financial and other capitals disclosed.	2
	2	KRIs	0 = No key risk indicators described; 1 = KRIs or equivalent described.	1
	3	Explanation of KPIs and KRIs of significance, implications and methods and assumptions used in compiling them	1 = Explanation of significance of KPIs and KRIs; 1 = Implications of KPIs/KRIs; 1 = Methods and assumptions used in compiling them explained	3
	4	The organization's effect on the capitals	0 = No consideration to the six capitals; 1 = Consideration of financial	2

			and manufactured capitals; 2 = All material capitals considered.	
	5	State of key stakeholder relationships and how the organization has responded to key stakeholder needs and interests.	1 = Key stakeholder relationships stated; 1 = Identification of key stakeholder needs and interests provided; 1 = Organizational response to 3 key stakeholder needs and interests provided.	3
	6	Comparison of past and present performance and current performance and target performance	0 = No comparison provided; 1 = Comparison of	2
		Sub – Score		13
Outlook	1	Management's expectations about external environment	0 = No statement provided; 1 = Expectations described without timeframe; 2 = Expectations described with time frame	2
	2	Potential implications of these external expectations on the organization	0 = Not explained; 1 = Implications explained	1
	3	Organizational readiness in responding to the challenges and uncertainties	0 = Not explained; 1 = Readiness explained	1
		Sub – Score		4
Basis of preparation and presentation	1	Summary of materiality determination process—Material issues/determination, impact on creating/preserving value	0 = No discussion of material matters; 1 = Description of processes used to identify the material matters; 1 = Identification of the role of 2 key personnel in the identification and prioritization of material matters identification and prioritization of material issue	2
	2	Reporting boundary and its determination	0 = No boundary disclosed; 1 = Boundary is determinable; 2 = Boundary determinable and the process explained	2
	3	Summary of significant frameworks and methods	0 = No frameworks or method used 1 =	2

		used to quantify or evaluate material matters	Frameworks and methods used	
		Sub – Score		5
Total scores				74

Appendix IV (b): Mediator Variable – Integrated reporting

Content Element		Disclosure item	1	2	3	5
			BAT	EABL	KQ	Bamburi
Organizational overview and external environment	1	Vision and mission				
	2	Value, ethics and culture				
	3	Ownership and operating structure				
	4	Principal activities, markets, products, services				
	5	Competitive landscape, market positioning, and positioning within the value chain				
	6	Key quantitative information				
	7	Significant factors affecting external environment and the organization's response				
		Sub - score				
Governance	1	Leadership structure, diversity, and skill set of those charged with governance				
	2	Processes used to make strategic decisions and monitor culture including its attitude to risk and mechanisms for addressing integrity and ethical issues				
	3	Actions taken to monitor and influence strategic direction and its approach to risk management				
	4	Reflection of culture and ethical values in use of and effect on the capitals, relationship with key stakeholders				
	5	Responsibility for promoting and enabling innovation by governance agents				
	6	Governance practices exceeds legal requirements				
	7	Compensation policies and plans				
		Sub - score				
Business model	1	Diagrammatic presentation				
	2	Key elements of the business				

		model				
	3	Narrative flow based on the business model				
	4	Critical stakeholders' identification and other dependencies				
	5	Connection to information covered in other content elements (e.g., strategy, risk, and opportunities and performance)				
		Sub - score				
Risk and opportunities	1	Key risks and opportunities				
	2	Assessment of the likelihood and impact				
	3	Steps to mitigate/manage risk or create value from opportunity				
		Sub - score				
Strategy and resource allocation	1	Short, medium, long term strategic objectives				
	2	Strategies in place or plan to implement to achieve the objectives				
	3	Resource allocation plan to implement strategies				
	4	Measurement of achievements and target outcomes				
		Sub - score				
Performance	1	KPIs that draws relationship between financial performance and performance regarding other capitals				
	2	KRIs				
	3	Explanation of KPIs and KRIs of significance, implications and methods and assumptions used in compiling them				
	4	The organization's effect on the capitals				
	5	State of key stakeholder relationships and how the organization has responded to key stakeholder needs and interests.				

	6	Comparison of past and present performance and current performance and target performance				
		Sub - score				
Outlook	1	Management's expectations about external environment				
	2	Potential implications of these external expectations on the organization				
	3	Organizational readiness in responding to the challenges and uncertainties				
		Sub - score				
Basis of preparation and presentation	1	Summary of materiality determination process-Material issues/determination, impact on creating/preserving value				
	2	Reporting boundary and its determination				
	3	Summary of significant frameworks and methods used to quantify or evaluate material matters				
		Sub - score				
Total scores						

Appendix IV (c): Independent Variable – CEO Power

Disclosure item	1	2	3	4	5	6	8	9	10
	BAT	EAB	KQ	NMG	UCHI	VGL	CIC	DFCU	EG
CEO POWER									
Structural power:									
Board independence									
Ownership power:									
CEO shareholding									
Expert power:									
CEO tenure									
Financial expertise									

Disclosure item	11	12	13	14	15	16	17
	JH	KCB	NIC	SBU	CQCI	UCL	UL
CEO POWER							
Structural power:							
Board independence							
Ownership power:							
CEO shareholding							
Expert power:							
CEO tenure							
Financial expertise							

Appendix V: Regression results for Moderation on Path c

Appendix V(a): Earnings Quality regressed on Institutional Ownership – Random Effect

Random-effects GLS regression	Number of obs	=	702
Group variable: ID	Number of groups	=	78
R-sq: within = 0.1754	Obs per group: min	=	7
between = 0.4093	Avg	=	9.0
overall = 0.3640	Max	=	9
	Wald chi2(7)	=	181.60
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

DA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	-.4110858	.06029	-6.82	0.000	-.5292521 -.2929196
CEOOP	-.2481121	.049312	-5.03	0.000	-.3447619 -.1514622
CEOEP	-.1757553	.038834	-4.53	0.000	-.2518686 -.0996421
FL	.2158373	.0520484	4.15	0.000	.1138242 .3178503
FA	.1588693	.0412231	3.85	0.000	.0780736 .2396651
FS	.7602314	.1681819	4.52	0.000	.4306009 1.089862
IO	-.5867196	.1370779	-4.28	0.000	-.8553874 -.3180517
_cons	-1.939015	.4754588	-4.08	0.000	-2.870897 -1.007133
sigma_u	.48121613				
sigma_e	.3310336				
Rho	.67878489	(fraction of variance due to u_i)			

Appendix V(b): Earnings Quality regressed on Institutional Ownership – Fixed Effect

Fixed-effects (within) regression	Number of obs	= 702
Group variable: ID	Number of groups	= 78
R-sq: within = 0.1771	Obs per group: min	= 9
between = 0.3869	Avg	= 9.0
overall = 0.3474	Max	= 9
	F(7,605)	= 18.60
corr(u_i, Xb) = 0.1542	Prob > F	= 0.0000

DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
CEOSP	-.4209282	.0671949	-6.26	0.000	-.5528918 -.2889646
CEOOP	-.2217313	.0516342	-4.29	0.000	-.3231352 -.1203273
CEOEP	-.1715577	.0418084	-4.10	0.000	-.2536649 -.0894505
FL	.2183542	.0554495	3.94	0.000	.1094573 .3272511
FA	.1222084	.0429111	2.85	0.005	.0379357 .2064812
FS	.7814488	.2099048	3.72	0.000	.3692183 1.193679
IO	-.4680146	.156271	-2.99	0.003	-.7749141 -.161115
_cons	-2.055067	.5978047	-3.44	0.001	-3.229091 -.8810425
sigma_u	.52637713				
sigma_e	.3310336				
Rho	.71658734 (fraction of variance due to u_i)				

F test that all u_i=0:	F(77, 605) =	19.09	Prob > F = 0.0000
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Appendix V(c): Earnings Quality regressed on Institutional Ownership – Hausman Test

	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CEOSP	-.4209282	-.4110858	-.0098424	.0296693
CEOOP	-.2217313	-.2481121	.0263808	.0153105
CEOEP	-.1715577	-.1757553	.0041976	.0154874
FL	.2183542	.2158373	.002517	.0191209
FA	.1222084	.1588693	-.0366609	.0119172
FS	.7814488	.7602314	.0212173	.125598
IO	-.4680146	-.5867196	.118705	.0750351

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(7) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 18.36$$

$$\text{Prob}>\chi^2 = 0.0105$$

Appendix V(e): Earnings Quality regressed on CEO Structural Power and Institutional Ownership – Fixed Effect

Random-effects GLS regression	Number of obs	=	690			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1861	Obs per group: min	=	7			
between = 0.4121	avg	=	8.8			
overall = 0.3691	max	=	9			
	Wald chi2(8)	=	191.29			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			

DA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	-.4089306	.0600038	-6.82	0.000	-.5265358 -.2913254
CEOOP	-.240839	.0491076	-4.90	0.000	-.3370882 -.1445898
CEOEP	-.1786332	.0386485	-4.62	0.000	-.2543829 -.1028835
FL	.211043	.0518005	4.07	0.000	.1095159 .3125702
FA	.1509367	.0410812	3.67	0.000	.0704191 .2314543
FS	.8009645	.1681247	4.76	0.000	.4714462 1.130483
IO	-.5420216	.1373035	-3.95	0.000	-.8111315 -.2729117
IO*CEOSP	.6055385	.2116618	2.86	0.004	.190689 1.020388
_cons	-2.084697	.476393	-4.38	0.000	-3.018411 -1.150984
sigma_u	.48148906				
sigma_e	.32910084				
Rho	.68157918	(fraction of variance due to u_i)			

Appendix V(f): Earnings Quality regressed on Structural Power and Institutional Ownership – Hasman Test

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	-.4228296	-.4089306	-.013899	.0293697
CEOOP	-.2127484	-.240839	.0280906	.0152779
CEOEP	-.1736486	-.1786332	.0049846	.0153107
FL	.2094006	.211043	-.0016425	.0191159
FA	.1121175	.1509367	-.0388192	.0120328
FS	.8099601	.8009645	.0089957	.1240207
IO	-.4185412	-.5420216	.1234804	.0747343
IO*CEOSP	.633642	.6055385	.0281035	.0678425

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(8) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 19.21$$

$$\text{Prob}>\chi^2 = 0.0138$$

Appendix V(g): Earnings Quality regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power – Random Effect

Random-effects GLS regression	Number of obs	=	702				
Group variable: ID	Number of groups	=	78				
R-sq: within = 0.1973	Obs per group: min	=	9				
between = 0.4207	avg	=	9.0				
overall = 0.3776	max	=	9				
	Wald chi2(9)	=	202.22				
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000				
DA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]		
CEOSP	-.4136954	.0596879	-6.93	0.000	-.5306815	-.2967093	
CEOOP	-.2267984	.0490558	-4.62	0.000	-.3229459	-.1306508	
CEOEP	-.1814588	.0384416	-4.72	0.000	-.256803	-.1061146	
FL	.2300771	.0519044	4.43	0.000	.1283463	.3318079	
FA	.152735	.0408515	3.74	0.000	.0726676	.2328024	
FS	.8624153	.1684786	5.12	0.000	.5322033	1.192627	
IO	-.5054639	.1370877	-3.69	0.000	-.7741508	-.236777	
IO*CEOSP	.5841769	.2105814	2.77	0.006	.1714449	.9969088	
IO*CEOOP	.542907	.183083	2.97	0.003	.1840709	.9017432	
_cons	-2.291725	.4788958	-4.79	0.000	-3.230343	-1.353106	
sigma_u	.4789118						
sigma_e	.32705583						
rho	.68195508	(fraction of variance due to u_i)					

Appendix V(h): Earnings Quality regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power – Fixed Effect

Fixed-effects (within) regression	Number of obs	=	690			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1994	Obs per group: min	=	7			
between = 0.3935	avg	=	8.8			
overall = 0.3575	max	=	9			
	F(9,603)	=	16.69			
corr(u_i, Xb) = 0.1815	Prob > F	=	0.0000			

DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
CEOSP	-.4226975	.0663908	-6.37	0.000	-.5530828 -.2923122
CEOOP	-.1941452	.051503	-3.77	0.000	-.2952921 -.0929982
CEOEP	-.174218	.0413129	-4.22	0.000	-.2553526 -.0930834
FL	.2282073	.0552465	4.13	0.000	.1197083 .3367063
FA	.1144314	.0425485	2.69	0.007	.0308702 .1979926
FS	.8776087	.2089015	4.20	0.000	.4673458 1.287872
IO	-.3699973	.1562353	-2.37	0.018	-.6768287 -.063166
IO*CEOSP	.6293397	.2208923	2.85	0.005	.195528 1.063151
IO*CEOOP	.5463115	.1865404	2.93	0.004	.1799636 .9126593
_cons	-2.405533	.597516	-4.03	0.000	-3.578999 -1.232068
sigma_u	.52653854				
sigma_e	.32705583				
Rho	.72159503 (fraction of variance due to u_i)				
F test that all u_i=0:	F(77, 603) =	19.00	Prob > F = 0.0000		

Appendix V(i): Earnings Quality regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power –Hausman Test

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	-.4226975	-.4136954	-.0090021	.0290706
CEOOP	-.1941452	-.2267984	.0326532	.0156872
CEOEP	-.174218	-.1814588	.0072409	.0151326
FL	.2282073	.2300771	-.0018698	.0189238
FA	.1144314	.152735	-.0383036	.0118967
FS	.8776087	.8624153	.0151935	.1235103
IO	-.3699973	-.5054639	.1354666	.0749428
IO*CEOSP	.6293397	.5841769	.0451628	.0666999
IO*CEOOP	.5463115	.542907	.0034044	.0357482

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(9) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 21.54$$

$$\text{Prob}>\chi^2 = 0.0105$$

Appendix V(j): Earnings Quality regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power – Random Effect

Random-effects GLS regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.2148	Obs per group: min	=	9			
between = 0.4009	avg	=	9.0			
overall = 0.3692	max	=	9			
	Wald chi2(10)	=	216.37			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			
DA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
CEOSP	-.4095894	.059289	-6.91	0.000	-.5257937	-.2933852
CEOOP	-.2051037	.049011	-4.18	0.000	-.3011634	-.1090439
CEOEP	-.170936	.0382618	-4.47	0.000	-.2459278	-.0959441
FL	.2317256	.0514792	4.50	0.000	.1308282	.332623
FA	.1509946	.040494	3.73	0.000	.0716279	.2303614
FS	.8690939	.1677772	5.18	0.000	.5402567	1.197931
IO	-.4480881	.1371427	-3.27	0.001	-.7168828	-.1792934
IO*CEOSP	.5818272	.2088226	2.79	0.005	.1725425	.9911119
IO*CEOOP	.5354796	.1813883	2.95	0.003	.1799651	.8909942
IO*CEOEP	-.534701	.1543136	-3.47	0.001	-.8371501	-.2322518
_cons	-2.359249	.4774966	-4.94	0.000	-3.295125	-1.423372
sigma_u	.48292056					
sigma_e	.32360424					
Rho	.69011602 (fraction of variance due to u_i)					

Appendix V(k): Earnings Quality regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power – Fixed Effect

Fixed-effects (within) regression	Number of obs	=	702
Group variable: ID	Number of groups	=	78
R-sq: within = 0.2175	Obs per group: min	=	9
between = 0.3633	avg	=	9.0
overall = 0.3417	max	=	9
	F(10,602)	=	16.73
corr(u_i, Xb) = 0.1144	Prob > F	=	0.0000

DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
CEOSP	-.4226253	.0656902	-6.43	0.000	-.5516351 - .2936156
CEOOP	-.1715563	.0513175	-3.34	0.001	-.2723394 - .0707731
CEOEP	-.1597915	.0410592	-3.89	0.000	-.2404282 - .0791548
FL	.226739	.0546649	4.15	0.000	.1193819 .3340961
FA	.1123181	.0421033	2.67	0.008	.029631 .1950052
FS	.9044944	.2068223	4.37	0.000	.4983134 1.310675
IO	-.3129725	.1553396	-2.01	0.044	-.6180458 - .0078992
IO*CEOSP	.6704394	.2188383	3.06	0.002	.2406601 1.100219
IO*CEOOP	.5423657	.1845748	2.94	0.003	.179877 .9048545
IO*CEOEP	-.606486	.162486	-3.73	0.000	-.9255943 - .2873777
_cons	-2.527299	.5921095	-4.27	0.000	-3.690151 -1.364448
sigma_u	.53301347				
sigma_e	.32360424				
Rho	.73067518 (fraction of variance due to u_i)				

F test that all u_i=0:	F(77, 602) =	19.51	Prob > F = 0.0000
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Appendix V(l): Earnings Quality regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power – Hausman Test

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	Re	Difference	S.E.
CEOSP	-.4226253	-.4095894	-.0130359	.0282845
CEOOP	-.1715563	-.2051037	.0335474	.0152122
CEOEP	-.1597915	-.170936	.0111445	.014896
FL	.226739	.2317256	-.0049866	.0183887
FA	.1123181	.1509946	-.0386765	.0115291
FS	.9044944	.8690939	.0354005	.1209392
IO	-.3129725	-.4480881	.1351156	.0729538
IO*CEOSP	.6704394	.5818272	.0886122	.0654473
IO*CEOOP	.5423657	.5354796	.0068861	.0341486
IO*CEOEP	-.606486	-.534701	-.0717851	.0508823

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(10) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 23.79$$

$$\text{Prob}>\chi^2 = 0.0082$$

Appendix VI: Regression results for Moderation on Path a

Appendix VI (a): Integrated Reporting regressed on Institutional Ownership – Random Effect

Random-effects GLS regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1764	Obs per group: min	=	9			
between = 0.3159	avg	=	9.0			
overall = 0.2976	max	=	9			
	Wald chi2(7)	=	163.39			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			
IR	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
CEOSP	.0719788	.0104246	6.90	0.000	.0515468	.0924107
CEOOP	.0276946	.0075404	3.67	0.000	.0129157	.0424735
CEOEP	.0378127	.0066017	5.73	0.000	.0248736	.0507517
FL	-.0399026	.0206512	-1.93	0.053	-.0803782	.0005729
FS	-.0713646	.0295888	-2.41	0.016	-.1293575	-.0133717
FA	-.0213651	.0071122	-3.00	0.003	-.0353048	-.0074255
IO	.0829204	.023539	3.52	0.000	.0367849	.129056
_cons	.5145558	.0888933	5.79	0.000	.3403282	.6887834
sigma_u	.09742036					
sigma_e	.05503367					
Rho	.75807966 (fraction of variance due to u_i)					

Appendix VI (c): Integrated Reporting regressed on Institutional Ownership – Hausman Effect

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	.0609149	.0719788	-.0110639	.0040914
CEOOP	.0266297	.0276946	-.0010649	.0015854
CEOEP	.0334605	.0378127	-.0043521	.0021494
FL	-.0628676	-.0399026	-.022965	.0064285
FS	-.1138188	-.0713646	-.0424542	.0182834
FA	-.0246451	-.0213651	-.0032799	.0018221
IO	.0789668	.0829204	-.0039536	.0095862

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(7) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 19.41$$

$$\text{Prob}>\chi^2 = 0.0070$$

Appendix VI (d): Integrated Reporting regressed on Institutional Ownership and CEO Structural Power – Random Effect

Random-effects GLS regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1907	Obs per group: min	=	9			
between = 0.3674	avg	=	9.0			
overall = 0.3403	max	=	9			
	Wald chi2(8)	=	184.76			
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000			
IR	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
CEOSP	.0523893	.0083952	6.24	0.000	.0359351	.0688436
CEOOP	.0333795	.0066303	5.03	0.000	.0203843	.0463747
CEOEP	.0290913	.0052754	5.51	0.000	.0187518	.0394309
FL	-.0208541	.0070328	-2.97	0.003	-.0346382	-.00707
FA	-.0163272	.0055564	-2.94	0.003	-.0272175	-.005437
FS	-.0492996	.0239532	-2.06	0.040	-.0962471	-.0023522
IO	.0667405	.0186681	3.58	0.000	.0301516	.1033293
IO*CEOSP	.0831321	.0273931	3.03	0.002	.0294427	.1368216
_cons	.6812872	.069133	9.85	0.000	.545789	.8167854
sigma_u	.07179384					
sigma_e	.04407547					
Rho	.72627221 (fraction of variance due to u_i)					

Appendix VI (e): Integrated Reporting regressed on Institutional Ownership and CEO Structural Power – Fixed Effect

Fixed-effects (within) regression	Number of obs	=	702			
Group variable: ID	Number of groups	=	78			
R-sq: within = 0.1976	Obs per group: min	=	9			
between = 0.2401	avg	=	9.0			
overall = 0.2411	max	=	9			
	F(8,604)	=	18.59			
corr(u_i, Xb) = 0.0659	Prob > F	=	0.0000			
IR	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
CEOSP	.040915	.0091424	4.48	0.000	.0229603	.0588696
CEOOP	.0280869	.0068158	4.12	0.000	.0147014	.0414723
CEOEP	.0254742	.0055683	4.57	0.000	.0145387	.0364098
FL	-.028905	.0073409	-3.94	0.000	-.0433217	-.0144883
FA	-.0195504	.0057171	-3.42	0.001	-.0307783	-.0083225
FS	-.0938637	.0285302	-3.29	0.001	-.1498941	-.0378333
IO	.0662458	.0202908	3.26	0.001	.0263966	.1060949
IO*CEOSP	.0882183	.0284761	3.10	0.002	.0322941	.1441425
_cons	.8238842	.0830241	9.92	0.000	.6608333	.9869351
sigma_u	.08437343					
sigma_e	.04407547					
rho	.78561584 (fraction of variance due to u_i)					
F test that all u_i=0: F(77, 604) = 22.98 Prob > F = 0.0000						

Appendix VI (f): Integrated Reporting regressed on Institutional Ownership and CEO Structural Power – Hausman Test

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	.040915	.0523893	-.0114743	.0036199
CEOOP	.0280869	.0333795	-.0052926	.0015791
CEOEP	.0254742	.0290913	-.0036171	.0017822
FL	-.028905	-.0208541	-.0080508	.0021042
FA	-.0195504	-.0163272	-.0032231	.0013464
FS	-.0938637	-.0492996	-.0445641	.0154988
IO	.0662458	.0667405	-.0004947	.007951
IO*CEOSP	.0882183	.0831321	.0050862	.0077787

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(8) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 29.42$$

$$\text{Prob}>\chi^2 = 0.0003$$

Appendix VI (g): Integrated Reporting regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power– Random Effect

Random-effects GLS regression	Number of obs	= 702
Group variable: ID	Number of groups	= 78
R-sq: within = 0.2051	Obs per group: min	= 9
between = 0.3567	avg	= 9.0
overall = 0.3321	max	= 9
	Wald chi2(9)	= 194.70
corr(u_i, X) = 0 (assumed)	Prob > chi2	= 0.0000

IR	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	.0517035	.0083553	6.19	0.000	.0353275 .0680795
CEOOP	.032661	.006597	4.95	0.000	.0197312 .0455908
CEOEP	.028615	.0052494	5.45	0.000	.0183263 .0389037
FL	-.02245	.007014	-3.20	0.001	-.0361971 -.0087029
FA	-.0163199	.0055249	-2.95	0.003	-.0271485 -.0054912
FS	-.05317	.0238849	-2.23	0.026	-.0999835 -.0063566
IO	.054623	.0190483	2.87	0.004	.0172889 .091957
IO*CEOSP	.0748931	.0273949	2.73	0.006	.0212 .1285862
IO*CEOOP	-.0734737	.0255663	-2.87	0.004	-.1235827 -.0233647
_cons	.7026669	.0692205	10.15	0.000	.5669971 .8383366
sigma_u	.07168203				
sigma_e	.04370388				
Rho	.72901018	(fraction of variance due to u_i)			

Appendix VI (h): Integrated Reporting regressed on Institutional Ownership, CEO Structural Power and CEO Ownership Power– Fixed Effect

Fixed-effects (within) regression	Number of obs	=	702
Group variable: ID	Number of groups	=	78
R-sq: within = 0.2124	Obs per group: min	=	9
between = 0.2183	Avg	=	9.0
overall = 0.2253	Max	=	9
	F(9,603)	=	18.07
corr(u_i, Xb) = 0.0875	Prob > F	=	0.0000

IR	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
CEOSP	.0397987	.0090714	4.39	0.000	.0219835 .057614
CEOOP	.026822	.0067687	3.96	0.000	.0135288 .0401151
CEOEP	.0245452	.0055283	4.44	0.000	.0136882 .0354022
FL	-.0302484	.0072899	-4.15	0.000	-.0445651 -.0159317
FA	-.0193501	.0056693	-3.41	0.001	-.030484 -.0082162
FS	-.0971524	.0283065	-3.43	0.001	-.1527438 -.0415611
IO	.0490648	.020758	2.36	0.018	.0082981 .0898315
IO*CEOSP	.0761018	.0284649	2.67	0.008	.0201995 .1320041
IO*CEOOP	-.0875436	.026026	-3.36	0.001	-.1386562 -.036431
_cons	.8478296	.0826313	10.26	0.000	.6855494 1.01011
sigma_u	.08573724				
sigma_e	.04370388				
rho	.79375347				(fraction of variance due to u_i)

F test that all u_i=0:	F(77, 603) =	23.49	Prob > F = 0.0000
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Appendix VI (i): Integrated Reporting regressed on Institutional Ownership, Structural Power and Ownership Power– Hausman Test

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	.0397987	.0517035	-.0119048	.0035325
CEOOP	.026822	.032661	-.005839	.0015152
CEOEP	.0245452	.028615	-.0040698	.0017335
FL	-.0302484	-.02245	-.0077984	.0019868
FA	-.0193501	-.0163199	-.0030302	.0012711
FS	-.0971524	-.05317	-.0439824	.0151913
IO	.0490648	.054623	-.0055581	.0082495
IO*CEOSP	.0761018	.0748931	.0012087	.0077309
IO*CEOOP	-.0875436	-.0734737	-.0140699	.0048699

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(9) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 29.29$$

$$\text{Prob}>\chi^2 = 0.0006$$

(V_b-V_B is not positive definite)

Appendix VI (j): Integrated Reporting regressed on Institutional Ownership, CEO Structural Power, CEO Ownership Power and CEO Expert Power—Random Effect

Random-effects GLS regression	Number of obs	=	702
Group variable: ID	Number of groups	=	78
R-sq: within = 0.2156	Obs per group: min	=	9
between = 0.3395	Avg	=	9.0
overall = 0.3223	Max	=	9
	Wald chi2(10)	=	202.23
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

IR	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	.0525059	.0083348	6.30	0.000	.0361701 .0688417
CEOOP	.0336089	.0065804	5.11	0.000	.0207116 .0465062
CEOEP	.0283154	.0052287	5.42	0.000	.0180673 .0385635
FL	-.022942	.0069841	-3.28	0.001	-.0366306 -.0092534
FA	-.0162365	.0054993	-2.95	0.003	-.027015 -.005458
FS	-.0554306	.0238457	-2.32	0.020	-.1021674 -.0086938
IO	.0577517	.0190258	3.04	0.002	.0204618 .0950416
IO*CEOSP	.0719181	.027302	2.63	0.008	.0184072 .125429
IO*CEOOP	-.0607825	.0259561	-2.34	0.019	-.1116554 -.0099096
IO*CEOEP	-.0527765	.020854	-2.53	0.011	-.0936497 -.0119033
_cons	.7071673	.0691168	10.23	0.000	.5717008 .8426337
sigma_u	.07213335				
sigma_e	.04342797				
Rho	.73396343				
	(fraction of variance due to u_i)				

Appendix VI (k): Integrated Reporting regressed on institutional ownership, CEO structural power, CEO ownership power and CEO expert power– Fixed effect

Fixed-effects (within) regression	Number of obs	= 702
Group variable: ID	Number of groups	= 78
R-sq: within = 0.2236	Obs per group: min	= 9
between = 0.1913	Avg	= 9.0
overall = 0.2069	Max	= 9
	F(10,602)	= 17.34
corr(u_i, Xb) = 0.0547	Prob > F	= 0.0000

IR	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
CEOSP	.040226	.0090152	4.46	0.000	.0225209 .0579312
CEOOP	.0279708	.0067373	4.15	0.000	.0147393 .0412022
CEOEP	.0241879	.0054947	4.40	0.000	.0133968 .0349791
FL	-.0311163	.0072499	-4.29	0.000	-.0453545 -.0168782
FA	-.0193282	.0056335	-3.43	0.001	-.0303918 -.0082645
FS	-.0990733	.0281354	-3.52	0.000	-.1543287 -.0438179
IO	.0514677	.020643	2.49	0.013	.0109266 .0920088
IO*CEOSP	.0767399	.028286	2.71	0.007	.0211887 .1322911
IO*CEOOP	-.0713902	.0264361	-2.70	0.007	-.1233083 -.019472
IO*CEOEP	-.0635133	.0215499	-2.95	0.003	-.1058354 -.0211913
_cons	.8524627	.0821247	10.38	0.000	.6911769 1.013748
sigma_u	.08697887				
sigma_e	.04342797				
Rho	.80045221 (fraction of variance due to u_i)				

F test that all u_i=0:	F(77, 602) =	23.85	Prob > F = 0.0000
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Appendix VI (I): Integrated Reporting regressed on Institutional Ownership, CEO structural Power, CEO ownership Power and CEO expert Power–Hasman Test Effect

	---- Coefficients ---			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	.040226	.0525059	-.0122798	.0034361
CEOOP	.0279708	.0336089	-.0056381	.0014457
CEOEP	.0241879	.0283154	-.0041274	.0016889
FL	-.0311163	-.022942	-.0081744	.001945
FA	-.0193282	-.0162365	-.0030917	.001222
FS	-.0990733	-.0554306	-.0436427	.0149325
IO	.0514677	.0577517	-.006284	.0080096
IO*CEOSP	.0767399	.0719181	.0048218	.0073959
IO*CEOOP	-.0713902	-.0607825	-.0106077	.0050149
IO*CEOEP	-.0635133	-.0527765	-.0107369	.0054319

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(10) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 34.06$$

$$\text{Prob} > \chi^2 = 0.0002$$

(V_b-V_B is not positive definite)

Appendix VII: Regression Results for moderation mediation

Appendix VII (a): Earnings Quality regressed on Institutional Ownership, CEO Power and Integrated Reporting– Random Effect

Random-effects GLS regression	Number of obs	=	702
Group variable: ID	Number of groups	=	78
R-sq: within = 0.2259	Obs per group: min	=	9
between = 0.4020	avg	=	9.0
overall = 0.3743	max	=	9
	Wald chi2(11)	=	227.53
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

DA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
CEOSP	-.35898	.0613057	-5.86	0.000	-.4791369 -.2388231
CEOOP	-.1774302	.0494986	-3.58	0.000	-.2744457 -.0804147
CEOEP	-.1443144	.0390186	-3.70	0.000	-.2207895 -.0678393
FS	.8126481	.168277	4.83	0.000	.4828311 1.142465
FA	.1366479	.0404692	3.38	0.001	.0573297 .2159661
FL	.2142837	.0514776	4.16	0.000	.1133894 .3151779
IO	-.4635896	.136623	-3.39	0.001	-.7313657 -.1958136
IO*CEOEP	-.541623	.1533632	-3.53	0.000	-.8422095 -.2410366
IO*CEOOP	.4996706	.180499	2.77	0.006	.1458991 .8534422
IO*CEOSP	.5842902	.2074984	2.82	0.005	.1776007 .9909796
IR	-.8270661	.2719645	-3.04	0.002	-1.360107 -.2940254
_cons	-1.710483	.5222039	-3.28	0.001	-2.733984 -.6869826
sigma_u	.48661359				
sigma_e	.32161846				
Rho	.69597607	(fraction of variance due to u_i)			

Appendix VII (b): Earnings Quality regressed on Institutional Ownership, CEO Power and Integrated Reporting– Fixed Effect

Fixed-effects (within) regression	Number of obs	= 702
Group variable: ID	Number of groups	= 78
R-sq: within = 0.2284	Obs per group: min	= 9
between = 0.3666	avg	= 9.0
overall = 0.3484	max	= 9
	F(11,601)	= 16.17
corr(u_i, Xb) = 0.0864	Prob > F	= 0.0000

DA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
CEOSP	-.3815145	.0668001	-5.71	0.000	-.5127044 -.2503245
CEOOP	-.149907	.0515431	-2.91	0.004	-.2511335 -.0486806
CEOEP	-.1367838	.0415671	-3.29	0.001	-.2184183 -.0551494
FS	.7997857	.2086829	3.83	0.000	.3899493 1.209622
FA	.0961636	.042212	2.28	0.023	.0132627 .1790646
FL	.2012729	.0550307	3.66	0.000	.0931971 .3093487
IO	-.3391344	.1546482	-2.19	0.029	-.642851 -.0354179
IO*CEOEP	-.6137566	.1615083	-3.80	0.000	-.9309458 -.2965674
IO*CEOOP	.4893333	.1843464	2.65	0.008	.127292 .8513747
IO*CEOSP	.6667201	.2174992	3.07	0.002	.2395693 1.093871
IR	-.8552983	.2941122	-2.91	0.004	-1.432911 -.2776857
_cons	-1.702587	.6532457	-2.61	0.009	-2.985509 -.4196659

sigma_u	.52990122
sigma_e	.32161846
Rho	.73079294 (fraction of variance due to u_i)

F test that all u_i=0:	F(77, 601) = 19.66	Prob > F = 0.0000
------------------------	--------------------	-------------------

**Appendix VII (c): Earnings Quality regressed on Institutional Ownership, CEO
Power and Integrated Reporting– Hasman Test Effect**

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
CEOSP	-.3815145	-.35898	-.0225345	.0265304
CEOOP	-.149907	-.1774302	.0275232	.0143728
CEOEP	-.1367838	-.1443144	.0075306	.0143308
FS	.7997857	.8126481	-.0128624	.1234155
FA	.0961636	.1366479	-.0404843	.012004
FL	.2012729	.2142837	-.0130108	.0194533
IO	-.3391344	-.4635896	.1244552	.0724585
IO*CEOEP	-.6137566	-.541623	-.0721336	.0506422
IO*CEOOP	.4893333	.4996706	-.0103373	.037466
IO*CEOSP	.6667201	.5842902	.08243	.0651943
IR	-.8552983	-.8270661	-.0282322	.11197

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(11) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 21.65$$

$$\text{Prob} > \chi^2 = 0.0272$$

Appendix VIII: NACOSTI Research Permit

 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION REPUBLIC OF KENYA RefNo: 886183	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION Date of Issue: 17/July/2023
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Prof. Anne Syomwene Kisilu

CERM-ESA Project Leader Date: 05/10/2023