

BOARD OF DIRECTORS' CHARACTERISTICS AND
CORPORATE SUSTAINABILITY PERFORMANCE: A
MEDIATING ROLE OF INTERNAL CONTROL
MECHANISMS

A N M ASADUZZAMAN FAKIR

FACULTY OF BUSINESS AND ACCOUNTANCY
UNIVERSITY OF MALAYA
KUALA LUMPUR

2020

**BOARD OF DIRECTORS' CHARACTERISTICS AND
CORPORATE SUSTAINABILITY PERFORMANCE: A
MEDIATING ROLE OF INTERNAL CONTROL
MECHANISMS**

A N M ASADUZZAMAN FAKIR

**THESIS SUBMITTED IN FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY**

**FACULTY OF BUSINESS AND ACCOUNTANCY
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2020

UNIVERSITY OF MALAYA
ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: **A N M Asaduzzaman Fakir**

Matric No: **CHA150017**

Name of Degree: **Doctor of Philosophy**

Title of Project Paper/Research Report/Dissertation/Thesis ("this Work"): **Board of Directors' Characteristics and Corporate Sustainability Performance: A Mediating Role of Internal Control Mechanisms**

Field of Study: Accounting, Taxation, and Auditing

I do solemnly and sincerely declare that:

- (1) I am the sole author/writer of this Work;
- (2) This Work is original;
- (3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyrighted work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;
- (4) I do not have any actual knowledge, nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyrighted work;
- (5) I hereby assign all and every right in the copyright to this Work to the University of Malaya ("UM"), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;
- (6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature

Date:

Subscribed and solemnly declared before,

Witness's Signature

Date:

Name:

Designation:

BOARD OF DIRECTORS' CHARACTERISTICS AND CORPORATE SUSTAINABILITY PERFORMANCE: A MEDIATING ROLE OF INTERNAL CONTROL MECHANISMS

ABSTRACT

The purpose of this study is to propose a framework and thereafter examine the relationship among the board of directors' characteristics, internal control mechanisms, and corporate sustainability performance. In particular, it aims to uncover how the board specific characteristics influence internal control, which, ultimately, would enhance the sustainability performance of publicly listed companies. The premise of the resource dependence theory is utilized to identify the board characteristics that may influence the sustainability performance; namely, size, composition, leadership, ownership, diversity, and expertise. Inspired by the fit as mediation notion of contingency theory, the mediating role of internal control mechanisms, proxied by enterprise risk management (ERM) and management control systems (MCS), is also examined in this relationship. The majority of the previous studies concentrated on a few particular dimensions of sustainability like environmental and social aspects, whereas the governance and economic aspects remain unexplored in the literature. This study fills this important research gap through holistically conceptualizing sustainability performance. In addition to that interaction between corporate governance variables and sustainability is an under-researched area. This study put some light on it. The analysis finds support for board ownership and board expertise directly and positively influencing sustainability performance in Bangladesh context while the relationship between board characteristics and sustainability is indirect and mediated through internal control mechanisms. This implies that board members need to pursue specific attributes with a strong internal control environment in place to ensure sustainability performance in developing country context.

Keywords: board of directors' characteristics; corporate governance; sustainability performance; internal control mechanism; enterprise risk management (ERM); management control systems (MCS).

Universiti Malaya

CIRI-CIRI LEMBAGA PENGARAH DAN KELESTARIAN PRESTASI KORPORAT: PERANAN MEDIASI MEKANISME KAWALAN DALAMAN

ABSTRAK

Tujuan kajian ini adalah untuk mencadangkan suatu rangka kerja dan mengkaji hubungan antara ciri-ciri lembaga pengarah, mekanisme kawalan dalaman, dan kelestarian prestasi korporat. Kajian ini juga bertujuan untuk mendedahkan bagaimana ciri-ciri khusus lembaga mempengaruhi kawalan dalaman, yang, pada akhirnya, akan meningkatkan prestasi mampan syarikat tersenarai awam. Prinsip teori pergantungan sumber digunakan untuk mengenal pasti ciri-ciri lembaga pengarah yang mungkin mempengaruhi kelestarian prestasi; iaitu saiz, komposisi, kepimpinan, pemilikan, kepelbagaian, dan kepakaran. Diilhamkan oleh pemikiran “fit” sebagai mediasi teori kontingensi, peranan mekanisma kawalan dalaman sebagai mediasi, diproksi oleh pengurusan risiko perusahaan (ERM) dan sistem kawalan pengurusan (MCS), juga dikaji dalam hubungan ini. Majoriti kajian terdahulu tertumpu pada beberapa dimensi kemampuan tertentu seperti aspek alam sekitar dan sosial, sedangkan aspek tadbir urus dan ekonomi masih belum diterokai dalam literatur. Kajian ini memenuhi jurang penyelidikan yang penting ini melalui konseptual yang holistik ke atas kelestarian prestasi. Selain itu, interaksi antara pemboleh ubah tadbir urus dan kelestarian korporat adalah aspek yang masih kurang dikaji. Kajian ini cuba untuk merungkai aspek ini. Analisis data menunjukkan sokongan untuk pemilikan lembaga dan kepakaran lembaga adalah secara langsung dan positif mempengaruhi kelestarian prestasi dalam konteks Bangladesh, manakala hubungan antara ciri-ciri lembaga dan kelestarian prestasi adalah tidak langsung dan dimediasi oleh mekanisme kawalan dalaman. Ini menunjukkan bahawa ahli lembaga perlu mempunyai ciri-ciri spesifik di samping persekitaran kawalan dalaman yang kukuh untuk memastikan kemampuan prestasi dalam konteks negara sedang membangun.

Kata kunci: ciri-ciri lembaga pengarah; tadbir urus korporat; kemampanan/kelestarian prestasi; mekanisme kawalan dalaman; pengurusan risiko perusahaan (ERM); sistem kawalan pengurusan (MCS).

Universiti Malaya

ACKNOWLEDGEMENTS

My utmost gratitude and earnest obligations to the Almighty Allah Subh'anahu Wa Ta'ala for the guidance that He bestowed upon me through all these years of my doctoral research work.

I express my sincere appreciation and thanks to my supervisors **Professor Dr. Ruzita Jusoh** and **Dr. Nurliana Md. Rahin** for their brilliant supervision, cordial help, enthusiastic encouragement and kind support. I am deeply indebted to them for their assiduous clinch and unremitting love and care. I also acknowledge my postgraduate colleagues, friends and staffs in University Malaya and other universities for their support and encouragement throughout my studies.

My deepest gratitude goes to my parents and my in-laws for their blessings and love they hold for me all the way. Finally, I must recognize the unwavering support from my beloved wife that kept me steadfast to the goal through all the pains and sufferings throughout this journey.

TABLE OF CONTENTS

Abstract	iii
Abstrak	v
Acknowledgements.....	vii
Table of contents	viii
List of figures	xiv
List of tables.....	xv
List of symbols and abbreviations	xviii
CHAPTER 1: INTRODUCTION.....	1
1.1 Introduction	1
1.2 Problem Statement	5
1.3 Research Questions and Objectives	11
1.3.1 Research Questions	11
1.3.2 Research Objectives	12
1.4 Significance/Contributions of the Study	12
1.5 Scope of the Study.....	13
1.6 Context of Bangladesh	15
1.6.1 Country Profile.....	15
1.6.2 Sustainability Issues for Bangladesh.....	17
1.7 Definition of Research Variables	20
1.7.1 Board of Directors' Characteristics (BDC).....	20
1.7.2 Internal Control Mechanisms (ICM).....	21
1.7.2.1 Enterprise risk management (ERM).....	21
1.7.2.2 Management control systems (MCS).....	22
1.7.3 Corporate Sustainability Performance (CSP).....	22
1.8 Organization of the Thesis	23
CHAPTER 2: LITERATURE REVIEW.....	25
2.1 Chapter Preview	25

2.2	Evolution of Corporate Sustainability	25
2.3	Corporate Sustainability Performance: Definition and Conceptualization	30
2.4	Dimensions and Measurement of Corporate Sustainability Performance	33
2.5	Prior Studies on Corporate Sustainability Performance.....	39
2.5.1	Corporate Social Responsibility (CSR) and Corporate Sustainability Performance (CSP)	39
2.5.2	Corporate Financial Performance (CFP) and Corporate Sustainability Performance (CSP)	43
2.5.3	Determinants of Corporate Sustainability Performance (CSP).....	46
2.5.4	Integration of Corporate Sustainability into Strategic Management Process ..	49
2.6	Corporate Governance Conceptualization	51
2.7	Corporate Governance Mechanisms	54
2.8	Corporate Governance Models.....	56
2.9	Corporate Governance: Bangladesh Perspective	59
2.10	Prior Studies on Corporate Governance	61
2.10.1	Corporate Governance and Financial Performance	61
2.10.1.1	Board Structure	61
2.10.1.2	Ownership structure	64
2.10.2	Corporate Governance and Risk Taking	67
2.11	Missing Link between Corporate Governance and Corporate Sustainability Performance	69
2.12	Internal Control Mechanisms	72
2.13	Enterprise Risk Management	76
2.13.1	Enterprise Risk Management: Conceptualization	76
2.13.2	Key Issues in Prior Studies on Enterprise Risk Management (ERM).....	77
2.14	Management Control Systems (MCS)	81
2.14.1	MCS Conceptualization	81
2.14.2	MCS Frameworks	84
2.14.2.1	The levers of control framework by Simons	84

2.14.2.2	The performance management framework by Otley.....	88
2.14.2.3	The performance management systems framework by Ferreira and Otley	90
2.14.2.4	The performance management system by Broadbent and Laughlin..	91
2.14.2.5	The MCS package by Malmi and Brown.....	91
2.14.2.6	Comparison among the MCS frameworks.....	92
2.14.3	MCS and Sustainability.....	93
2.15	Common Theories Related to Corporate Governance and Sustainability.....	95
2.15.1	Agency Theory	96
2.15.2	Stewardship Theory.....	97
2.15.3	Resource Dependence Theory.....	97
2.15.4	Resource Based View.....	98
2.15.5	Legitimacy Theory	100
2.15.6	Stakeholder Theory	100
2.15.7	Institutional Theory	101
2.15.8	The Common Good Theory	103
2.16	Underlying Theories of the Study	104
2.16.1	Selection of Resource Dependence Theory	104
2.16.2	Contingency Theory.....	105
2.17	Chapter Summary.....	108

CHAPTER 3: THEORETICAL FRAMEWORK AND HYPOTHESES

	DEVELOPMENT	109
3.1	Chapter Preview	109
3.2	Literature Gap	109
3.3	Theoretical Framework	110
3.4	Hypothesis Development	114
3.5	Board of Directors' Characteristics and Corporate Sustainability Performance	115
3.5.1	Board Size and Corporate Sustainability Performance	117
3.5.2	Board Composition and Corporate Sustainability Performance	118

3.5.3	Board Leadership and Corporate Sustainability Performance	119
3.5.4	Board Ownership and Corporate Sustainability Performance	120
3.5.5	Board Diversity and Corporate Sustainability Performance	121
3.5.6	Board Expertise and Corporate Sustainability Performance.....	122
3.6	Board of Directors' Characteristics and ERM Use	123
3.7	Board of Directors Characteristics and MCS Use.....	125
3.8	ERM and Corporate Sustainability Performance	127
3.9	MCS and Corporate Sustainability Performance	128
3.10	Mediation Role of ERM and MCS on BDC-CSP Relationship.....	129
3.11	Chapter Summary.....	133
CHAPTER 4: RESEARCH METHODOLOGY		135
4.1	Chapter Preview	135
4.2	Research Design	135
4.2.1	Research Plan	135
4.2.2	Research Paradigm: Epistemological and Ontological Assumption.....	136
4.3	Measurement of Research Variables	139
4.3.1	Corporate Sustainability Performance (CSP): Dependent Variable	143
4.3.2	Internal Control Mechanisms	146
4.2.2.1	Enterprise Risk Management (ERM).....	146
4.2.2.2	Management control systems.....	148
4.3.3	Board of Directors' Characteristics.....	151
4.3.4	Control Variables	152
4.4	Population and Sampling Frame	154
4.5	Unit of Analysis and Key Informants	154
4.6	Research Instrument	155
4.6.1	Questionnaire Design	155
4.6.2	Pre-testing.....	156
4.6.3	Testing Reliability and Validity of the Measures of Pilot Study	159
4.6.3.1	Reliability measure for reflective constructs	159
4.6.3.2	Validity measures.....	161

4.5.3.3	Validity measures for formative constructs	163
4.7	Data Collection.....	165
4.7.1	Data Collection Procedure	165
4.7.2	Response Rate	166
4.8	Chapter Summary.....	167
CHAPTER 5: DATA ANALYSIS AND RESULTS		168
5.1	Chapter Preview	168
5.2	Data Analysis Techniques Used.....	168
5.3	Data Preparation for Data Analysis.....	172
5.3.1	Data Coding.....	172
5.3.2	Data Matching.....	174
5.3.3	Data Screening and Checking	175
5.4	Response Bias Analysis	176
5.5	Profiles of Responding Companies and Respondents.....	177
5.6	Testing the Assumptions of Multivariate Analysis	180
5.6.1	Test of Normality	181
5.6.2	Test of Homoscedasticity	182
5.6.3	Test of Linearity	182
5.6.4	Test of Multicollinearity.....	182
5.7	Assessment of Measurement Model	183
5.7.1	Assessing Independent variables.....	184
5.7.2	Assessing Mediating Variables	185
5.7.3	Assessing Dependent Variable.....	188
5.7.4	Other Assessments for the Measurement Model.....	191
5.6.4.1	Assessing validity of first order constructs	191
5.6.4.2	Common method bias.....	194
5.8	Assessment of Structural Model (Direct Effect)	195
5.8.1	Summary Table for Hypothesis (Direct Effect Only)	199
5.9	Assessment of Mediation (Indirect) effect	200
5.10	Analysis of Control Effect.....	209

5.11	Further Analysis	210
5.12	Chapter Summary	212
CHAPTER 6: DISCUSSION AND CONCLUSION.....		214
6.1	Chapter Preview	214
6.2	Review of Results.....	214
6.3	Discussion of Key Findings	217
6.3.1	Board of Directors' Characteristics and Corporate Sustainability Performance	217
6.3.2	Board of Directors' Characteristics and Internal Control Mechanisms	226
6.3.3	Internal Control Mechanisms and Corporate Sustainability Performance.....	231
6.3.4	Mediating Role of the Internal Control Mechanisms in the Relationship between the BDC and CSP	234
6.4	Implications Of the Study	238
6.4.1	Theoretical Implication	238
6.4.2	Practical Implications.....	243
6.5	Limitations of the Study and Suggestions for Future Research	246
6.6	Conclusion.....	250
6.7	Chapter Summary.....	251
REFERENCES.....		253
Appendix A: Questionnaire.....		297
Appendix B: Response Bias Analysis (independent t test)		303
Appendix C: Testing the Assumptions of Multivariate Analysis		305
Appendix D: Test of Common Method Variance.....		318
Appendix E: Ethical Clearance.....		320
List of Publications.....		321

LIST OF FIGURES

Figure 2.1: Contributors to sustainability performance and its dimensions.....	35
Figure 2.2: Relationship between CS and CSR	41
Figure 2.3: Relationship between TBL, CSR, and CS	42
Figure 2.4: Drivers and factors of sustainability integration in strategic management level (Source: Engert et al. (2016)).....	50
Figure 2.5: Comparison of MCS conceptualizations	83
Figure 2.6: The levers of control framework by Simons	85
Figure 2.7: Performance Management Systems Framework by Ferreira and Otley.....	90
Figure 2.8: MCS package by Malmi and Brown	91
Figure 2.9: Comparison of MCS frameworks by Strauß and Zecher (2013).....	92
Figure 2.10: Fit as moderation	107
Figure 2.11: Fit as mediation	107
Figure 3.1: Theoretical framework of the study.....	111
Figure 3.2: Developed hypotheses according to the theoretical framework.....	114
Figure 4.1: Research plan deployed for the study.....	136
Figure 4.2: Factor loading values for pre-test	161
Figure 5.1: Assessment of structural model (direct only)	197
Figure 5.2: Decision Tree for Mediation Analysis (Zhao et al., 2010).....	204
Figure 6.1: Proposed theoretical model	215

LIST OF TABLES

Table 2.1: Definitions of corporate sustainability	31
Table 2.2: Level of ambition and interpretation of sustainability	32
Table 2.3: Growth of SRI Assets by Region (2014-2016).....	34
Table 2.4: Conclusions regarding CSP and CSR	43
Table 2.5: Definitions of Corporate Governance	52
Table 2.6: Comparison between the Anglo-American model and the multi-stakeholder model.....	58
Table 2.7: Salient features of corporate governance structure in Bangladesh	60
Table 2.8: Trending relations of board structure with firm's financial performance.....	62
Table 2.9: Summary of literature on the possible impact of managerial ownership on financial performance.....	65
Table 2.10: Definitions of Internal Control.....	74
Table 3.1: Hypothesis development.....	133
Table 4.1: Measurement of Research Variables	141
Table 4.2: Measurement of Corporate Sustainability Performance	144
Table 4.3: Details of items used for Enterprise Risk Management (ERM)	148
Table 4.4: Details of items used for measurement of MCS use.....	150
Table 4.5: Details of items used for Board of Directors' Characteristics	152
Table 4.6: Control variables measurement.....	154
Table 4.7: Survey evaluation form.....	158
Table 4.8: Reliability and Validity Score for Pilot Study	160
Table 4.9: Cross loading of constructs for pre-test sample.....	162
Table 4.10: Path coefficient (weight) and significance of formative constructs.....	164
Table 4.11: Multicollinearity Statistics for pre-test analysis	164

Table 4.12: Response Rate analysis for the study	167
Table 5.1: PLS-SEM vs CB-SEM: which one is appropriate? (Adapted from Hair et al. (2011)).....	170
Table 5.2: Data Coding and Categorization Scheme applied in the Study	173
Table 5.3: Response Rate Bias Analysis for the Study	177
Table 5.4: Responding companies by sector	178
Table 5.5: Responding companies by size	178
Table 5.6: Respondent's demographic profile	179
Table 5.7: Multicollinearity Analysis for the Study	183
Table 5.8: Descriptive Statistics for Independent Variables	184
Table 5.9: Descriptive statistics and reliability statistics for 'ERM use'	185
Table 5.10: Descriptive statistics and reliability statistics for 'Diagnostic use of MCS'	186
Table 5.11: Descriptive statistics and Reliability statistics for 'Interactive use of MCS'	186
Table 5.12: Assessing path weight and significance for the formative construct 'MCS use'	187
Table 5.13: Multicollinearity statistics for the formative construct 'MCS use'	187
Table 5.14: Descriptive statistics and Reliability statistics for 'Corporate Financial Sustainability Performance'	188
Table 5.15: Descriptive statistics and Reliability statistics for 'Corporate Environmental Sustainability Performance'	188
Table 5.16: Descriptive statistics and Reliability statistics for 'Corporate Social Sustainability Performance'	189
Table 5.17: Descriptive statistics and Reliability statistics for 'Corporate Governance Sustainability Performance'	189
Table 5.18: Assessing path weight and significance for the formative construct 'Corporate Sustainability Performance (CSP)'	190

Table 5.19: Multicollinearity statistics for the formative construct ‘Corporate Sustainability Performance (CSP)’	190
Table 5.20: Assessment of AVE and Fornell Larker Criteria for reflective constructs	192
Table 5.21: Assessment of Cross Loading for reflective constructs.....	192
Table 5.22: Summary of hypothesis and their test statistics for direct effects.....	196
Table 5.23: Assessment of R ² values	197
Table 5.24: Assessment of Effect Size (f ² Values)	198
Table 5.25: Summary of hypothesis and results for direct effects.....	199
Table 5.26: Summary of hypothesis and their test statistics for indirect effect	205
Table 5.27: Summary of hypotheses and result for indirect effects.....	209
Table 5.28: Assessment of Control Variables effect on CSP.....	210
Table 5.29: Firm Size Effect on Endogenous Constructs	211
Table 5.30: Industry Type Effect on Endogenous Constructs	212
Table 6.1: Summary of research findings (Objective one)	225
Table 6.2: Summary of research findings (Objective two)	230
Table 6.3: Summary of research findings (Objective three)	234
Table 6.4: Summary of research findings (Objective four)	236

LIST OF SYMBOLS AND ABBREVIATIONS

AVE	Average Variance Extracted
AICPA	American Institute of Certified Public Accountants
BCa	Bias-Corrected and Accelerated Bootstrap
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
BD	Bangladesh
BDC	Board of Directors' Characteristics
BEI	Bangladesh Enterprise Institute
CB-SEM	Covariance-based Structural Equation Modelling
CEO	Chief Executive Officer
CERES	Coalition for Environmentally Responsible Economies
CESP	Corporate Environmental Sustainability Performance
CFA	Confirmatory Factor Analysis
CFA	Certified Financial Analysts
CFO	Chief Financial Officer
CFP	Corporate Financial Performance
CFSP	Corporate Financial Sustainability Performance
CG	Corporate Governance
CGSP	Corporate Governance Sustainability Performance
CI	Confidence Interval
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CPA	Certified Public Accountant
CPI	Complex Performance Indicators
CR	Composite reliability
CSE	Chittagong Stock Exchange
CSP	Corporate Sustainability Performance
CSR	Corporate Social Responsibility
CSSP	Corporate Social Sustainability Performance
DJSI	Dow Jones Sustainability Index
DJSSI	Dow Jones STOXX Sustainability Index
DJSWI	Dow Jones Sustainability World Index

DMCS	Diagnostic use of MCS
DSE	Dhaka Stock Exchange
EFA	Exploratory Factor Analysis
ERM	Enterprise Risk Management
ESG	Environmental, Social, and Governance
FCMA	Fellow Cost and Management Accountant
FIBV	La Federation Internationale des Bourses de Valeurs
FRC	Financial Reporting Council
FYP	Five Year Plan
GDP	Gross Domestic Product
GLCs	Government-Linked Companies
GRI	Global Reporting Index
HRM	Human Resource Management
ICAB	Institute of Chartered Accountants of Bangladesh
ICM	Internal Control Mechanisms
ILO	International Labour Organization
IMCS	Interactive use of MCS
IMF	International Monetary Fund
ISO	International Organization for Standardization
KLD	Database founded by Kinder, Lydenberg and Domini
LDC	Least Developed Countries
LoC	Levers of Control
MCS	Management Control Systems
MDGs	Millennium Development Goals
mn	Million
MNCs	Multi-National Companies
MNCs	Multinational Corporations
NASDAQ	National Association of Securities Dealers Automated Quotations
NYSE	New York Stock Exchange
OECD	Organization for Economic Cooperation & Development
OoC	Objects of Control
PLS-SEM	Partial Least Squares- Structural Equation Modelling
r	Correlation Coefficient
R ²	R-Square

RDT	Resource Dependence Theory
ROA	Return on Assets
ROE	Return on Equity
SAARC	The South Asian Association for Regional Cooperation
SAM	Sustainable Asset Management
SAS	Social Soundness Analysis
SDGs	Sustainable Development Goals
SEC	Securities & Exchange Commission
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for the Social Sciences
t	Critical value (t-value)
TBL	Triple Bottom Line
TI	Tellus Institute
Tk.	Taka (Bangladeshi Currency)
UN	United Nations
UNEP	United Nations Environmental Program
UNFCCC	The United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	The currency of USA (United States Dollar)
VIF	Variance Inflation Factor
WCED	World Commission on Economic Development
WFE	World Federation of Exchanges Limited
β	Beta, Regression Coefficient

CHAPTER 1: INTRODUCTION

1.1 Introduction

The relationship between business and society is evolving and dynamic. On one hand, the business organization has been considered vital to the society considering its influence on our economic, social, environmental wellbeing and sustenance. Remarkably, “corporations are the fundamental cell of modern economic life, shaping the physical and social world in which we live” (Benn, Edwards, & Williams, 2014, p. 4). On the other, businesses gain its wealth and power by drawing from the resources of the planet and its people. Therefore, “strong markets and strong societies go hand in hand” (Nations, 2015, p. 29), and none can ignore the accountability towards the other (Bergman, Bergman, & Berger, 2017). Modern businesses are required to act as “better citizens” (Orsato, 2006) and continually address the demands of the society in their operation and strategy to ensure legitimacy. Often firms adopt strategies which contribute to the society and environment meaningfully (Voegtlin & Greenwood, 2016). This is due to the fact that the issues of sustainability is increasingly becoming inevitable for business. It’s not surprising to find companies that are fined and penalized or even forced to exit for not being able to comply with sustainability regulations set by social bodies (Bansal, 2005; Boerner, 2010). For instance, on 3 July 2018, a UK firm named John Jones Civil Engineering & Groundworks Ltd have been ordered to pay £50,000 for illegally depositing of waste. More recently in January 2019, France’s data protection regulator, CNIL, has issued Google a €50 million fine (around \$56.8 million USD) for failing to comply with its Europe’s General Data Protection Regulation (GDPR) obligations. However, addressing the concern of sustainability issues, the number of business organization that adopted sustainability in

their business process, reporting and strategy has dramatically increased the last few years. This is evident by the increasing number of board-level sustainability committees. To illustrate, the percentage of S&P 500 companies that have board-level sustainability committees has increased from 5% to 24% just in the last five years while in the same time period the percentage of companies releasing a sustainability report has grown from 20% to 80% (Ioannou & Serafeim, 2017). However, this phenomenon is not limited to US companies, but it manifests globally. While these trends partly manifest because of voluntary actions by individual companies, in many cases they could be the result of regulations.

Globally, a proliferation of national level sustainability regulations aiming to pressure companies to incorporate sustainability into their business policy and operation is observed. This national level institutions and business systems may be considered one of the most influential drivers for such greater number of sustainability incorporation (Ioannou & Serafeim, 2012). In addition to that prominent international community e.g. United Nations (UN) also put forward sustainability targets to help countries to achieve their development goal. In 2015 at the 70th session of UN General Assembly all its 193 member states adopted the UN 2030 Sustainable Development Agenda (Nations, 2015). The UN 2030 Agenda for Sustainable Development includes 17 Sustainable Development Goals (UN SDGs) which acts an inspiration for governments, regulatory bodies, civil society, and foundations to legislate corporate actions toward a greater concern for social and ecological wellbeing. Most of the national governments also displaying their timely action towards the implementation of the UN 2030 SDGs similar to the previous development goal namely United Nation's Millennium Developmental Goals (UN MDGs) which lifted more than one billion people out of extreme poverty. UN SDGs require commitments from both private and public sectors along with close national and international partnerships. It is impossible

to reach any of these goals without involving business. Moreover failing to reach the goal will endanger the advancement of both business and society (Bergman et al., 2017). According to Chabowski, Mena, and Gonzalez-Padron (2011), corporate sustainability is becoming the central of all guiding principles with the proviso that long term benefit is a concern. Hence sustainability performance resulted from the increased demand for sustainability incorporation made ‘sustainability’ the focal point of research for the academics during the last few decades (Goyal, Rahman, & Kazmi, 2013).

Another field of study that raised much attention by scholars in the past decades is corporate governance. Good governance of business organization is of interest for many researchers because internal and external governance mechanisms can determine corporate behaviour (Hussain, Rigoni, & Orij, 2018). Good governance is, of course, important in every sphere of the society. When the resources are too limited to meet the minimum expectations of the people, it is a good governance level that can help to promote the welfare of society (Aras & Crowther, 2008). The board of directors is a key governance function that links the organization to its institutional context. Boards transcend and span organizational boundaries by providing access to external resources, information, and demands (Hillman & Dalziel, 2003; Jonsson, 2005; Zahra & Pearce, 1989). Boards also maintain the ultimate level of control over organizational actions by setting the limits within which managers may act (Mizruchi, 1983) and often influence corporate strategic directions (Judge, 2012; Westphal & Fredrickson, 2001). When the boards allocate time and attention to issues, they are prioritizing those issues in the organizational agenda (Beekun, Stedham, & Young, 1998). In the past, many have argued that the board’s role has been passive, merely functioning as a “rubber stamp” (Fama & Jensen, 1983b). But recent corporate governance scandals and initiatives such as the Sarbanes–Oxley Act have focused attention on boards and forced their increasingly active roles. This is especially

noticeable in the case of corporate sustainability goals, where board directors can be held personally liable for failing to adhere to environmental regulation (Walls & Hoffman, 2013) or subject to shareholder lawsuits for failing to recognize material implications of organizational social actions. Moreover, many voluntary initiatives have encouraged companies to adopt environmental, social, and governance structures and performance measures as an integral part of their strategy, with corresponding oversight by the board of directors (Bassen & Kovacs, 2008; GSIA, 2017; Kocmanova, Nemecek, & Docekalova, 2012a; Rahdari & Rostamy, 2015).

Apart from the board of directors' influence, the extant literature argues for internal control relevance to firm sustainability performance. Internal control can play a vital role for sustainability of a firm because an internal control system reduces risks and helps firms ensure the reliability of financial statements and compliance with laws and regulations (Spira & Page, 2003). So, an increasing number of business failures and some widely publicized frauds have encouraged firms to put more emphasis on their internal control systems, which are specific to their particular operating environment. Management is under increased pressure to enhance the effectiveness of internal control and to effectively communicate this to the board of directors and shareholders (Sutton, 2006). Reference groups like auditors, suppliers and customers are also interested in internal controls since they may affect long-term confidence in reporting, accountability and in the corporate form of organization (Rittenberg & Schwieger, 2001). Without adequate and appropriate internal control is established organizations are at risk of failing (Turner & Weickgenannt, 2009), with retrenchment, downsizing and financial losses (Upadhaya, Munir, & Blount, 2014). It follows that adequate and appropriate internal control can protect organisations from potential risks and losses, and improve organisational effectiveness (Munir, Baird, &

Perera, 2013; Turner & Weickgenannt, 2009). Hence, it can be potentially argued that internal control is highly relevant for sustainability incorporation for any modern firm.

1.2 Problem Statement

Despite that fact that elements of corporate governance e.g., board of directors' and internal control can significantly influence sustainability of any firm, academic literature rarely focused on the interaction among corporate governance, internal control mechanisms, and corporate sustainability performance. However, studying their interaction has got multiple challenges. One of the challenges is that 'sustainability' is a fundamentally vague concept whose systematic meaning and measurement yet to obtain widespread acceptance (Phillis & Andriantiatsaholainaina, 2001). Corporate sustainability performance (CSP) is multidimensional (Dočekalová & Kocmanová, 2016) or multilevel (Van Marrewijk & Werre, 2003) term which is hard to conceptualize at the firm level. In similar connection Van Marrewijk and Werre (2003) note that corporate social responsibility (CSR) and corporate sustainability performance (CSP) are interchangeably being used to merely indicate voluntary social and environmental practices. This led us to one of the most unrealistic assumptions that a company will be able to sustain merely by recognizing environmental and social issues and integrating them into its strategic planning. It's noteworthy that, "the most widely accepted definition of sustainability that has emerged over time is the 'triple-bottom-line (TBL)' consideration of 1) economic viability, 2) social responsibility, and 3) environmental responsibility" (AICPA, 2016). Elkington (1998) first discussed these three parameters of TBL which eventually got considerable attention by the succeeding researchers and become the foundation for corporate sustainability conceptualization. However, environmental sustainability remains the prime focus of attention (AICPA, 2016) and most sustainability analysis (A. Adams, Muir, & Hoque,

2014; Morioka & Carvalho, 2016; Post, Rahman, & McQuillen, 2015) failed to address financial performance as an integral part of sustainability. The reason is often explained through the assumption that companies are incompatible to optimize both social/environmental performance and financial performance. In other word 'dichotomization' (Crowther, 2002) or conflict between financial performance and non-financial performance is the central concern (Aras & Crowther, 2008). Non-financial performance is often termed specifically as ESG i.e. environmental, social, and governance performance. Many scholars, therefore, conceptualize sustainability performance as a combination of financial and ESG performance (Aras & Crowther, 2008; Rahdari & Rostamy, 2015). Thus, consistent with this argument, corporate sustainability performance can be conceptualized including the following four aspects:

1. Financial sustainability- defined as adequate return or profitability (e.g. ROE, ROA)
2. Environmental sustainability- defined as actions towards the ecology or geophysical environment
3. Social sustainability- defined as activities as a citizen of the society to its other stakeholder's benefits
4. Governance sustainability- defined as the relationship between the company and its internal stakeholders (e.g. employees)

Despite majority of the past studies considers 'corporate sustainability' as single or two dimensional such as environmental and/or social sustainability, this four-dimensional sustainability performance conceptualization can be advocated due to the fact that financial performance is an integral part of sustainability and often economic strength help firms to concentrate on other area of sustainability operations (Clarkson, Li, Richardson, & Vasvari, 2011; Ghelli, 2013; Preston & O'bannon, 1997). In addition, it is argued that before doing

good to external stakeholders (i.e., social group) company has got the responsibility to do good to the internal stakeholders (i.e., employees). It is also evident that internal relations or convenient organization culture are the key for long-run success of a firm (Bird, Borochin, & Knopf, 2015; FRC, 2016; Graham, Harvey, & Puri, 2013).

Besides the conceptualization of corporate sustainability performance, the other important question raised is about what role the board of directors' plays and how it might influence corporate sustainability performance. Corporate governance plays an important role in ensuring a firm's business success (Lu, 2013). Off late, the scope of corporate governance is expanding from merely concentrating to investors' protection (Fama & Jensen, 1983a) to addressing wider aspects of stakeholders of the society (Ayuso & Argandoña, 2007; FRC, 2016; Garcia-Torea, Fernandez-Feijoo, & de la Cuesta, 2016; Jo & Harjoto, 2012). For example, Jo and Harjoto (2012) claim internal and external corporate governance and monitoring mechanisms accentuate the firm engagement to greater social responsibility aspects. This shift in focus of corporate governance mechanisms is further evident by code for best practice issued by the Financial Reporting Council (FRC). FRC in April 2016 issued the UK Corporate Governance Code where it is clearly mentioned that the prime objective of any corporate governance mechanism is "effective engagement with key stakeholders" (FRC, 2016, p. 2). This drives the focus of two contrasting discipline, sustainability and corporate governance, closely aligned. The researches in these two areas are often treated separately with less attention paid to the interaction of both areas. In other words, the link between corporate governance mechanisms and sustainability performance is a very potential but under-researched area (Hussain et al., 2018; Lu, 2013).

Corporate governance mechanisms, specifically, the board of directors can influence corporate sustainability in several ways. Good corporate governance takes account of

competent board members to carry on their duties and responsibilities vested upon them. Sub-quality boards lead to bad corporate behaviours such as non-performance or lack of commitment to organizational goal and misappropriation of shareholder wealth (Sanda, Garba, & Mikailu, 2011). If the board actively discharge its function and perform its duties sincerely, it results in better financial outcome and organizational goal achievement (Zahra & Pearce, 1989). It is far believed that board of directors' characteristics may influence firm sustainability performance. The reason is explained in many ways by academicians. For example, Huang and Wang (2015) claim board of directors alleviates the agency problem between managers and shareholders by endorsing almost all important decisions which can affect organizational performance and sustainability. Moreover, the board of directors can influence sustainability through its determinant functions. Finkelstein and Hambrick (1996) identify two key determinant functions of the board which attained much congruence among researchers. Firstly, boards determine and direct the organizational strategy as their inherent structural position allow them to be the most influential actors to do so. Secondly, boards work as a monitor of all the organizational wealth by representing shareholders, responding to hiring and takeover threats, compensating top management and certifying right use of assets. Therefore, it can be argued that with a competent board who discharges its responsibility and functions candidly will affect sustainability performance. Nonetheless, board efficiency in carrying out the goal of performing sustainably further depends on their competencies and capabilities (Carpenter & Westphal, 2001), such as specific board characteristics like board size, board diversity, leadership, and educational qualification (Ujunwa, 2012). For these reasons, a study that investigates how board of directors' characteristics and corporate sustainability performance are linked together is warranted. Although limited in number, recent studies recorded some evidence in support for this above-mentioned argument. For instance, Hussain et al. (2018) find board meeting

and board diversity relevant to corporate sustainability incorporation. In a similar vein, the relationship between the board of directors and investors is found to be the key for sustainability performance for a European sample (Crifo, Escrig-Olmedo, & Mottis, 2018).

Notwithstanding the empirical evidence on the argument that the board of directors' may directly influence corporate sustainability performance, another point of view suggests that the board of directors' relationship with corporate sustainability is rather indirect. Without support from the management, board of directors alone cannot ensure attainment of sustainability objective. This is because, the individual owner has little or no interest in directing, or even closely monitoring, the day-to-day operations of the firm (Solomon & Darby, 2005). The owners hire boards of directors who, in turn, hire managers to perform these duties (Walsh & Seward, 1990). Shareholders appoint a board with the responsibility to oversee and monitor management action and ensure that a sound control environment is in place (Wang & Hsu, 2013). The board of directors demonstrates independence from management and exercises oversight of the development and performance of internal control (COSO, 2013). Moreover, internal control mechanisms are traditionally been used as a tool for discharging overseeing and monitoring the function of the board of directors (Eisenberg, 1997). Therefore, it is argued that internal control mechanisms of a company would mediate the relationship between the board of directors' characteristics and sustainability performance.

It is also important to note that, any good internal control system should include risk management and management control system. Sarens and Christopher (2010) noted good corporate governance guidelines must focus on effective risk management and management control structure. Therefore, it can be argued that the board of directors' will put substantial effort to establish a strong control environment which includes enterprise

risk management (ERM) and management control systems (MCS). This argument can be further supported by the conclusion made by Soin and Collier (2013). In particular, Soin and Collier (2013, p. 82) specify the trend to view board responsibilities into twofold: 'identifying, assessing, treating and monitoring risks' and 'evaluating the effectiveness of management controls'. In other words, ensuring the functionality of ERM and MCS are supposed to be the major concern of the present board of directors.

Prior studies regarding corporate governance and corporate sustainability interaction also lend support for the mediating role of ERM and MCS on the relationship between the board of directors and corporate sustainability performance (Fakir, Jusoh, & Rahin, 2019). Notably, findings of studies recognising the direct effect of the corporate board on sustainability performance are rather inconclusive and misleading (Desender, Aguilera, Lópezpuertas-Lamy, & Crespi, 2016; Shaukat, Qiu, & Trojanowski, 2016; Walls, Berrone, & Phan, 2012). This is mainly due to the fact that, while many scholars find positive relationship between board of directors' characteristics and corporate sustainability performance (McGuinness, Vieito, & Wang, 2017; Velte, Jones, & Jones, 2016; Zhang, Zhu, & Ding, 2013), others suggests a negative or insignificant association (Adams & Funk, 2012; Coles, Daniel, & Naveen, 2008; Ortiz-de-Mandojana & Aragon-Correa, 2015). Some scholars question the applied approaches of these studies and claim that the study link may be affected by some other intervening factors which have been omitted (Certo, Lester, Dalton, & Dalton, 2006; Crutzen & Herzig, 2013; Margolis & Walsh, 2003). For example, Certo et al. (2006) have suggested that the relationship between board characteristics and firm performance is mediated by process-oriented constructs. Although the number of empirical studies that have explored such mediating processes is relatively limited, a number of related studies lend support to the mediating role of ERM and MCS. For example, ERM is found to mediate the relationship between executives' role and firm

performance. Similar to ERM, ‘proactive risk management’ is also used as a mediator for the South African context by Parker and Ameen (2017). Furthermore, Kallunki, Laitinen, and Silvola (2011) and Duréndez, Ruíz-Palomo, García-Pérez-de-Lema, and Diéguez-Soto (2016) both find a positive effect for a mediation effect of MCS in the context of Finnish business units and Spanish SMEs. Recently, MCS is found mediating the relationship between transformational leadership style and managerial performance (Nguyen, Mia, Winata, & Chong, 2017). Therefore, it is argued that the examination of mediation role of internal control mechanisms use can add great value in understanding the complex board of directors’ characteristics association with Corporate Sustainability Performance.

1.3 Research Questions and Objectives

The purpose of this thesis is to resolve a few important issues and therefore objected to achieve corresponding research goals. Achieving goals will benefit both scholars and professionals alike. For example, the research can be used to gain insight into corporate sustainability performance management, to identify and address the specific factors, consequences and the appropriate operational structure to meet sustainability objectives.

1.3.1 Research Questions

The following research questions have been developed for this study:

1. What are the relationships between the Board of Directors’ characteristics (BDC) and Corporate Sustainability Performance (CSP)?
2. Are Board of Directors’ characteristics (BDC) associated with the use of Enterprise Risk Management (ERM) and Management Control Systems (MCS)?
3. Are use of Enterprise Risk Management (ERM) and Management Control Systems (MCS) associated with Corporate Sustainability Performance (CSP)?

4. Does use of Enterprise Risk Management (ERM) and Management Control Systems (MCS) mediate the relationship between BDC and CSP?

1.3.2 Research Objectives

Based on the research questions mentioned above, the following research objectives were set:

1. To investigate the relationships between BDC and CSP.
2. To examine the association of BDC with ERM and MCS use.
3. To investigate the association between use of Enterprise Risk Management (ERM) and Management Control Systems (MCS) with Corporate Sustainability Performance (CSP).
4. To determine the mediation effect of ERM and MCS on BDC-CSP relationship.

1.4 Significance/Contributions of the Study

It is important to note that holistic approach of sustainability is much demanded but rarely attended by researchers (Ditillo & Lisi, 2014; Lenssen et al., 2014), which opens an avenue for the uphold study. The holistic conceptualisation of CSP can therefore be seen as the first contribution of this research. Second, this study also addresses the research gap on the role of corporate governance structures on the CSP. In addition to that, it explores the mediation effect of ERM and MCS practice in an organizational setting. The previous studies that concentrated on individual aspects of sustainability with board of directors' role (Berrone & Gomez-Mejia, 2009; Harjoto, Laksmana, & Lee, 2015; Ortiz-de-Mandojana & Aragon-Correa, 2015; Post et al., 2015; Zhang, Zhu, et al., 2013) did not even address the mediating role of internal control systems. Based on the literature review, it appears that no study thus far has attempted to combine such two important control mechanisms of MCS and ERM in relation to the board of directors' role on sustainability

performance. In this regard, the empirical findings resulting from the use of the proposed framework will contribute to the limited literature currently prevailing in corporate sustainability performance and other related organizational issues.

The study is crucial to both internal and external stakeholders of an organization. It would help top management to define clearly the organization's goal of sustainability performance and can direct through adopting the appropriate structure as proposed. Moreover, managers might be able to capture some precious guidance about developing and managing sustainability effectively and can choose the right internal control structure that supports sustainability performance. This study examines which compositions of the board of directors really matter for sustainability performance. This will help the stakeholder decide what type of board members to choose. More importantly, investors can be much informed with the decision of sustainability investments. Moreover, regulatory bodies (e.g. government, Securities and Exchange Commission) can take insight from this study to formulate more effective and specific guidelines and implement them later to ensure sustainability firm performance.

1.5 Scope of the Study

The scope of this study mainly includes empirical examination of the linkage of Corporate Governance, Internal Control Mechanisms, and Corporate Sustainability Performance within the Dhaka Stock Exchange (DSE) companies in Bangladesh. DSE is the first and premier stock exchange of Bangladesh. It has a long tradition as the promoters incorporated the formation under the name as the East Pakistan Stock Exchange Association Limited on April 28, 1954.

Nowadays, DSE has developed into a thrilling and flourishing market in which either individual or institutional investor deal in securities. At the beginning of the FY 2016-17, total of 292 companies were listed with a paid-up capital of Tk. 526,401 mn and market value of Tk. 2,600,357 mn. At the end of the 2016-17 financial year, the total number of listed companies stood at 297 with a paid-up value of Tk. 560,347 mn and market value of Tk. 3,203,427 mn with equity market represented 98.51% of total tradable market capitalization. Moreover, in recent years, DSE is recognized as one of the world's best performing stock exchanges. Dhaka Stock Exchange Limited (DSE) has achieved full membership of The World Federation of Exchanges Limited (WFE) on June 06, 2017. It is mentionable that World Federation of Exchanges, formerly known as “La Federation Internationale des Bourses de Valeurs (FIBV)” was established in 1961. Basically, the federation consisted of some European Stock Exchanges. In 2001 it got worldwide expansion and took the name of World Federation of Exchanges. At present WFE have 67 full members. WFE works to advocate on behalf of the global exchange sector and to work with global regulators to establish standards for the proper functioning of publicly regulated securities markets and to become the institutional reference for best practice in the global securities and exchange industry. The management system of DSE has been assessed and certified as meeting the requirements of ISO 9001:2008 on October 30, 2016, by SGS United Kingdom Limited.

The DSE companies were selected since all the largest and most advanced companies in Bangladesh are listed in this directory. This enables the sample to incorporate these largest and most advanced organizations and may be advantageous given the fact that large companies are more likely possess greater resource available for investment in sustainability performance and also actively engaged in more innovative control systems

including using ERM and MCS than small companies. Besides, all the companies' information and data are accessible widely in DSE (Guthrie & Parker, 1989).

In addition, this study aims to investigate the mediating role of ERM and MCS in the association between the Board of Directors' characteristics and corporate sustainability performance. Following the quantitative approach, both primary and secondary data were used for analysis. The study is a cross-sectional study using data from company websites, annual reports, and survey questionnaire. Chief financial officers (CFOs) were asked to fill up the questioners on behalf of their firms.

The study was approached to all type of companies listed in DSE including manufacturing, service, MNCs, family and non-family firms. Nevertheless, this research did not focus on organizations in terms of firm size (small, medium, large), and industry type (e.g. manufacturing, service, etc.)

1.6 Context of Bangladesh

1.6.1 Country Profile

Bangladesh is one of the most densely populated countries of the world with a population of 155 million in a land mass of 147,750 square kilometres. Bangla is the state language and citizens are known as Bangladeshi. The country is surrounded by India in the West, North and Northeast and by Myanmar on the Southeast with the Bay of Bengal in the South providing a gateway to the oceans of the world. Bangladesh is endowed with a unique natural resource base. About 80% of the country consists of floodplains and wetlands with over 300 rivers in the riverine network that sustains rare wildlife, flora and fauna and distinctive but diverse ecological systems across the country. These systems range from the unique mangrove forests of the Sundarbans in the Southwest (a world

heritage) to coastal and marine ecosystems in the deep South; deep natural water basins called “haors” and “baors” in the Northeast which remain inundated for half of the year and has a unique but changing ecology; arid area in the upper mid-section to hill tracts in the Southeast and flat sandy or marshy riverine deltas in the middle down to South. More than 700 kilometres of coastline in the South has a population of over 35 million who are most vulnerable to cyclones, tidal surges and salinity ingress. Moreover, Bangladesh is among the most exposed countries to climate change worldwide. A three-foot rise in sea level would flood almost 20% of Bangladesh and displace more than 30 million people.

The Moghuls ruled the country from the 13th century until the 18th century, when the British took over and administered the subcontinent until 1947. During British rule, Bangladesh was part of India. In 1947, the independent states of Pakistan and India were created. The present territory of Bangladesh was a part of Pakistan and was known as East Pakistan. It was separated from West Pakistan by 1600 kilometres of Indian Territory. Bangladesh emerged on the world map as a sovereign state on March 26, 1971, after fighting a nine-month war of liberation. This was followed by many years of political turmoil and military coups. The December 1990 mass movement for democracy was successful in forcing elections, which replaced the corrupt government. Democracy was restored in 1991 and since then Bangladesh has experienced a period of economic progress and relative calm (Laufer, 2003).

The economy of Bangladesh has experienced stable growth since 1980. Over the past two decades, the country has recorded an annual average growth rate of 6% of GDP and has reduced the poverty rate by half in 2016, 24,8% of the population was considered under the poverty line, compared to 48,1% in 2000. Growth amounted to 7% in 2017 supported by remittances from nearly 7.5 million Bangladeshi living abroad (USD 12.85 billion in

2017), garment exports, increased wages and low inflation. The inflation rate is estimated to reach 5.8% in 2018 while the interest rate sits at 6.75%. Continued growth is expected given macroeconomic stability along with credit growth and increased private investment. According to the Bangladesh Bureau of Statistics, per capita income grew from USD 1,532 to USD 1,660 from the fiscal year 2017 to 2018 (eight per cent growth). The Bangladeshi economy relies on its enormous human resources, rich agricultural soils and abundant water resources. Although 56.5% of GDP was generated by the service sector in 2017, nearly half of Bangladeshis are employed in agriculture. Agriculture (14.8% of GDP) mostly involves rice production, but it also includes tea, jute, wheat, sugarcane, tobacco, spices, fruits, etc. In fact, Bangladesh is the world's fourth-biggest rice producer, although shortages caused by natural disasters occasionally force it to import said crop. The industry represents 29.2% of GDP (a slight increase from last year's 28.8%) and employs 19.1% of the population. The backbone of the industrial sector is the production of garments, with textile exports representing 80% of the total exports and surpassing USD 34 billion in 2017. Other industrial products include paper, leather, fertilizers, metals, and pharmaceuticals (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010).

Bangladesh also suffers from some challenges: frequent social strikes, terrorist threats, poor-quality infrastructure, an under-performing financial system, public sector inefficiency, inadequate exploitation of the country's natural resources, limited availability of capital and population growth (even though it has slowed down considerably in recent years) (Seguí-Mas, Polo-Garrido, & Bolas-Araya, 2018)

1.6.2 Sustainability Issues for Bangladesh

Article 18 A: Protection & Improvement of Environment and Biodiversity; in the Constitution of the People's Republic of Bangladesh states that, "The state shall endeavour

to protect and improve the environment and to preserve and safeguard the natural resources, biodiversity, wetlands, forest and wildlife for the present and future citizens”. The pursuit of sustainable development is, therefore, a Constitutional obligation in Bangladesh. Rapid economic growth coupled with a rising population is putting a high toll on the environment, ecology and natural resources in Bangladesh. In order to ensure the best possible opportunities for a productive and healthy life for the people while maintaining the balance in nature and ensuring sustainability for future generations, the country has to have “human centred” sustainable development. This vision has been the central focus of all sustainable development activities in Bangladesh. All development plans and programmes conform to it.

Bangladesh has made remarkable progress in reducing poverty, supported by sustained economic growth. Based on the international poverty line of \$1.90 per person per day, it reduced poverty from 44.2 per cent in 1991 to 13.8 per cent in 2016/17. In parallel, life expectancy, literacy rates and per capita food production have increased significantly. Progress was underpinned by 6 per cent plus growth over the decade and reached to 7.3 per cent in 2016/2017, according to official estimates. Rapid growth enabled Bangladesh to reach the lower middle-income country status in 2015. In 2018, Bangladesh fulfilled all three eligibility criteria for graduation from the UN’s Least Developed Countries (LDC) list for the first time and is on track for graduation in 2024 (Nathalie, 2018).

At the same time, Bangladesh has performed very well on the social front, already achieving several MDG social targets. For example, life expectancy has risen by 10 years and the infant mortality rate has been halved (IMF – World Economic Outlook Database, 2016). On this front, the country has done better than most of the other SAARC member countries including India. Women’s educational and social status has generally improved

significantly, although a lot of work is still needed to attain a fully satisfactory level, particularly in respect of the disadvantaged and downtrodden segments. On environmental sustainability, Bangladesh has been using its own limited resources purposefully within the framework of Bangladesh Climate Change Strategy and Action Plan (BCCSAP) adopted in July 2009, Bangladesh Climate Change Trust Fund (BCCTF) financed from national budgetary allocations (US\$300 million allocated over the past three years) and Bangladesh Climate Change Resilience Fund (BCCRF) financed through contributions of Development Partners (so far about US\$170 million received) as well as other relevant policies, programmes and Acts. Bangladesh is also very active in the UNFCCC and other international fora dealing with environment and climate change. While highlighting its own perspectives, Bangladesh works with and speaks for LDCs and climate vulnerable countries. Bangladesh has been trying to promote an integrated approach, involving all the three pillars of sustainable development, as indicated above, with the human beings at the centre of the state. Indeed, the ultimate goal is an inclusive society in which human dignity will be ensured for every citizen.

Despite significant progress has been made since 1990 in economic and other social and environmental criteria Bangladesh remains a poor, overpopulated country. The elimination of poverty is a priority: it represents almost half of the budget expenditure. The stress on land and water has to be reduced for ensuring a sustainable environment as a degraded environment adversely affects the well-being of the people. Therefore, the 6th FYP commits to an “environmentally sustainable development process” through conservation of natural resources, reduction of air and water pollution and recouping of encroached rivers, water bodies, forest areas and khas lands (government owned lands) which led the country to include a carbon tax in its 2017-2018 budget. Among the other major issues that Bangladesh needs to plan for and initiate activities on a priority basis during the 6th FYP

are increasing the creation of jobs including green jobs, sustainable cities, urban transport and infrastructure, and harnessing the resources of the Bay of Bengal.

1.7 Definition of Research Variables

As there are certain terms for which there are various definitions, this section defines the key variables as they apply in this study. These comprise as follows:

1.7.1 Board of Directors' Characteristics (BDC)

In this study, the board of directors refer to any individuals who work jointly with fellow directors on a board of an incorporated business organisation (Jensen, 2002). These include any member of the board, chairman, and independent directors who have the same legal responsibilities despite performing different functions (Kraft & Furlong, 2012). In a similar context, Jensen (2017) defines board characteristics as three aspects of board members namely demographic, psychological, and competency characteristics. They are described as follows:

1. Demographic characteristics include age, gender, ethnic group, tenure and number of directorship etc. (Bhattacharjee, 2012; Powell & DiMaggio, 2012; Zahra & Pearce, 1989).
2. Psychological characteristics and values include commitment, integrity, courage, and confidence, ability to lead, being consensus builders, and being challenger (Anderson & Gerbing, 1988; March & Sutton, 1997; Powell & DiMaggio, 2012)
3. Competencies refer to individual capabilities or abilities to perform particular roles (Gerbing & Anderson, 1988). These include knowledge and skills, educational qualifications and industry experiences (Blalock Jr & Costner, 1969; Hanushek & Jackson, 1977; March & Sutton, 1997; Powell & DiMaggio, 2012)

For the study purpose the researcher focus on the six specific characteristics of the board. Namely, Board Size refers to the total number of directors in the board; Board Composition refers to ration of external directors in the board; Board Leadership refers to CEO duality; Board Ownership refers to the percentage of shareholding by directors of the company; Board Diversity refers to the number of female members in the board; and Board Expertise refers to number of professional business degree holders in the board (For detail please refer to Table 4.5 at page no. 152)

1.7.2 Internal Control Mechanisms (ICM)

There are many definitions of internal control, as it affects the various constituencies (stakeholders) of an organization in various ways and at different levels of aggregation.

Under the COSO Internal Control-Integrated Framework, internal control is broadly defined as a process, affected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance.

The COSO definition relates to the aggregate control system of the organization, which is composed of many individual control procedures. For the study purpose the researcher focus on two important control mechanisms namely ERM and MCS.

1.7.2.1 Enterprise risk management (ERM)

The COSO "Enterprise Risk Management-Integrated Framework" published in 2004 (New edition COSO ERM 2017) defines ERM as a "...process, effected by an entity's board of directors, management, and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of

entity objectives." The study, therefore, adopts the definition provided by COSO which considers the board of director shape ERM and ERM influence organisations goal orientation.

1.7.2.2 Management control systems (MCS)

MCS serves as ‘levers’ for implementing strategies and achieving business goals. The study adopted ‘lever of control (LOC)’ approach definition of MCS by Simons. Accordingly, MCS is defined as “... the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities for capturing new opportunities and innovations” (Simons, 1995b, p. 5). Two important MCS types described in Simons LOC framework is diagnostic and interactive MCS. Diagnostic control systems are defined as “the formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance” (Simon, 2000, p. 209) whereas “interactive control systems stimulate search and learning, allowing new strategies to emerge as employees throughout the organization respond to perceived opportunities and threats” (Simon, 2000, p. 209).

Many prior studies conceptualize MCS as both diagnostic and interactive (Henri, 2006; Kober, Ng, & Paul, 2007). Both types of controls are necessary for the organisation as they are intended for two different objectives (Kober et al., 2007). Thereafter, the study conceptualizes MCS as diagnostic and interactive approaches of control systems which organisation adapt to attain its management and strategic goals.

1.7.3 Corporate Sustainability Performance (CSP)

Due to the lack of one general definition describing corporate sustainability performance, the study treats corporate sustainability performance as effectiveness -

the degree to which a company meets its set goals or specified objectives (Bentler & Mooijart, 1989; Harman, 1976). In fact, results represents the degree to which a company is actively executing an effective strategy (Otley, 1999). In the framework of this work, CSP is discussed and evaluated on multiple dimensions, i.e. success in environmental, economic, social and governance rather than on any single dimension.

1.8 Organization of the Thesis

The thesis is to be outlined in six chapters.

Chapter one provides a general viewpoint on the research as a whole. It begins with the corporate sustainability overview and its associated issues. The researcher presents the statement of problem in BDC, ERM, MCS, and CSP fields. Study issues, study objectives, study importance, and the nature of the research are subsequently identified. In addition, at the end of the chapter, a brief overview of the general context of Bangladesh is given along with the sustainability practice accompanied by the definitions for all of the study's major variables.

Chapter two comprises of an in-depth literature review of descriptions and conceptualisations along with their dimensions of variables used in this study. The chapter also discusses the theories underneath the research, including, the Agency Theory, Stewardship Theory, Resource Dependency Theory, Resource Based View, Legitimacy Theory, Stakeholder Theory, Institutional Theory, The Common Good Theory, and Contingency Theory.

Chapter three introduces the theoretical framework suggested underpinning the ideas presented in Chapter Two. Furthermore, specific hypotheses are brought

forth to examine the correlations among the variables of the research in accordance to study objectives as outlined in chapter one.

Chapter four offers a broad overview of the research design and methodology that involves research model and research strategy, variables calculation creation, pre-testing (pilot study) process, data collection tools and methods as well as sampling design and finally implementation of data analysis techniques used in research (SPSS and PLS-SEM).

Chapter five records the results derived from the methods of data analysis used in the research. The chapter includes the subsequent parts: method of data collection, data planning for data analysis, survey company summary and key informant profile, concise analyses and hypothesis checking.

Chapter six focuses on the research's key findings and also provides a summary of the results. The chapter compares the findings to the outcomes of previous field studies. It presents the possible managerial and theoretical insights as well as makes some recommendations according to the research findings for either academics or practitioners. Finally, some of the drawbacks of the analysis are illustrated, and also future research are underlined.

CHAPTER 2: LITERATURE REVIEW

2.1 Chapter Preview

The previous chapter introduces the thesis by discussing the study problems, research questions and objectives, the significance of the study, study scope and context, and study variables followed by the thesis structure. The opening chapter lays the foundation for further discussion on the literature relevant to this study. This current chapter is aimed at providing an overview of the literature on the variable of interest, namely corporate sustainability, corporate governance, and internal control addressing and specifying the research gap. At end of this chapter, relevant theories to the research framework are also discussed to rationalize the linkage among the study constructs.

2.2 Evolution of Corporate Sustainability

Historically, economic growth, stewardship, environmental and social regulation, and a demand for greater social justice and equity have pushed the evolution to a great deal. The issue of sustainability has emerged to encounter the potential risk of unregulated production activities that resulted in huge pollution and resource degradation by companies (Christofi, Christofi, & Sisaye, 2012). Corporate sustainability seeks to safeguard human wellbeing and the environment which will eventually raise massive acceptance from all the relevant clusters. Therefore, until today, it is developing at the same pace. The evolution of corporate sustainability, thus, can be categorized into three stages, namely the early, middle, and implementation stage. The following paragraphs deal with each stage and conclude by exposing the current challenges in corporate sustainability.

The early stage of corporate sustainability refers to the era before the mid-1990s. Since the mid-1900s 'Corporate Sustainability' has been the subject of great interest for investors and stakeholders of corporate bodies. However, sustainability can be traced back to as early as the 1900s. For example, the quotes of J.M. Clark (1916) in his article which was published in the Journal of Political Economy quoted:

"If men are responsible for the known results of their actions, business responsibilities must include the known results of business dealings, whether these have been recognized by law or not." (Clark, 1916, p. 223)

The abovementioned note can be regarded as the earliest evidence on implied corporate sustainability as there was no mention of the term explicitly. However, similar other researchers have demanded a wider aspect of corporate performance evaluation in this era, but unfortunately, in a haphazard way or have raised the issue in a casually fashioned mode. Thus, this era can be reported as the primitive stage for the development of corporate sustainability.

The next stage of development occurred from the mid-1900s to early 1990s. This is the era where most of the developments have occurred in respect of corporate sustainability. It started with the term Corporate Social Responsibility (CSR) and moved towards incorporating the greater aspects of stakeholder demands. H. Bowen (1953) first defined CSR as:

"[...] the obligation of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Bowen, 2013, p. 6)

Bowen earned the title of “Father of CSR” through his statements and beliefs during this stage (Carroll, 1999, p. 270). Later on, the concept of CSR was further developed by Goyder (1961), Heald (2018), Sethi (1975), Johnson (1971) and Carroll (1999) etc. In the beginning, when massive industrialization pushed the awareness of growth limits in the 1950s and 1960s, the concern of environmental and social conservation became the focal point of interest for concurrent researchers. For example, Goyder (1961) demanded social audit for the firms which could enable stakeholders to better monitor management activities and decision making towards social responsibilities. Similarly, Heald (2018) challenged the business practice of CSR to be confined to limited philanthropic and community programmes which had never capture its intended nobility. Johnson (1971) further argued for an expanded view of CSR including internal and external stakeholders e.g. employees, dealers, regulatory bodies, community, and the nation.

The proliferation of CSR views later resulted in the emergence of early CSR modelling. Sethi (1975) developed the first model of corporate social performance which includes a three-tier corporate action, namely social obligation, responsibility, and responsiveness. Advancing Sethi (1975) work, Carroll (1999) proposed the first widely accepted inclusive CSR model. Carroll’s model addressed four tiers i.e. economic, legal, ethical, and discretionary/philanthropic perspectives of CSR. These models later shaped the foundation for the current corporate sustainability on performance measures and practices. However, the term sustainability is popularized by the Brundtland Report in 1987. The report under the title of “Our Common Future” challenged the vision of a future world with minimal environmental and social degradation for sustained economic growth and social equity. The report called for the need of balance between resource exploitation and conservation to ensure true social wellbeing. Another socio-environmental pressure group, for example, The World Bank formulated and implemented tools that support economic operation

without compromising environmental and social wellbeing. Similar to UN agencies, the United States Agency for International Development (USAID) also implemented the Social Soundness Analysis (SAS) for sustainable programme design which received support from numerous corporate bodies and international consortiums. These reforms and frameworks have made this an era for mass demand sustainability practice for companies, although the firm-level sustainability performance measures are not fully developed at this stage. However, a greater demand for sustainability practice and reporting is the central mark of this middle stage.

The current stage on the development of corporate sustainability refers to the period from the late 1990s until today. The corporate scandals of the 1990s, followed by environmental disasters of the 1980s, have pushed the demand for a better alignment of sustainability into corporate practice. Also, the demand for further guidelines to operate business sustainably has reached new heights. Moreover, companies also perceived that there is a better economic advantage by incorporating sustainability programmes. At this stage, researchers have proposed different indicators or discussed dimensions of corporate sustainability. Various guidelines for reporting and practice have also been developed during the period. For example, in 1999, the Sustainable Asset Management (SAM) group of Zurich and Dow Jones Sustainability Index (DJSI) were formed with an aim to guide business to a sustainability approach “that creates long-term shareholder value by embracing opportunities and managing risk deriving from economic, environmental and social developments.” In the year 2000, the UN Global Compact (UNGC) was created which proposed four principles on sustainability practice for companies i.e. declaration of human rights, ILO declaration for rights at work, the Rio Declaration on the environment, and UN convention against corruption. In the same year, the world leader in producing standards of sustainability reporting, Global Reporting Index (GRI), exposed their

existence considering the interest of the diverse group of stakeholders in accountability and transparency on this report. GRI was created with support and cooperation from three renowned institutes, namely United Nations Environmental Program (UNEP), Coalition for Environmentally Responsible Economies (CERES), and the Tellus Institute (TI) to provide a framework of all sustainability initiatives and efforts by companies worldwide.

In recent years, GRI gained much popularity due to the increasing number of sustainability incorporations by institutional investors' i.e. mutual funds, pension funds, and venture capital funds etc. All these have made this movement which is more than expected resulting in the wide-spread application of sustainability reporting and development by companies. White (2005) documented this popularity of sustainability practice and increasing awareness from investors, employees, consumers, local bodies, and governments by restraining corporate waste and unregulated social and environmental practices. Many other studies, for example, Solomon and Darby (2005), Colbert and Kurucz (2007) reported similar positive and optimistic evidence of sustainability practice by business firms.

At this point, it can be concluded that sustainability incorporation has increased to a great extent. The motivations for such incorporation of sustainability is because firms feel that they are obliged to do it; either they want to do it or are made to do it. However, the current period faces few challenges in sustainability incorporation by companies. All the guidelines on sustainability are merely suggestions and are difficult to incorporate the firm-level of operations (Labuschagne, Brent, & Van Erck, 2005). Moreover, not all firms believe that investing in other dimensions of sustainability could be translated into financial gain (Dyllick & Hockerts, 2002; Nau & Breuer, 2014). In addition to that, the definition

and dimensions of corporate sustainability are still vague with too many related facets that are closely aligned to it.

2.3 Corporate Sustainability Performance: Definition and Conceptualization

As discussed earlier in the extant literature, the term 'corporate sustainability' has been used as an alternative term for several interchangeable concepts such as sustainable development, sustainable entrepreneurship, triple bottom line, business ethics, corporate citizenship, corporate social responsibility, and similar other concepts. Corporate sustainability performance is a multidimensional concept based on the original idea of sustainable development, which replaces the traditional understanding of corporate performance only as capital appreciation for owners (Dočekalová & Kocmanová, 2016). As stated in the previous section, in 1987 the World Commission on Economic Development (WCED) popularised the term 'sustainable development' in its well-cited report, *Our Common Future* (Judd & Kenny, 1981). According to Rungtusanatham, Miller, and Boyer (2014, p. 43) sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' The WCED asserted that sustainable development requires the simultaneous adoption of environmental, economic, and equity principles (Bansal, 2005). Therefore, to get one unique and specific conceptualisation of corporate sustainability is rather challenging.

Further, an 'all-embracing' conceptualisation of corporate sustainability needs to be broadly defined which, in turn, will be of no use for either academic debate or corporate implementation. Academics put their efforts to define corporate sustainability under certain theoretical background. Table 2.1 illustrates some definitions of corporate sustainability which emphasises that the focus of the definitions varies. For example, according to Gladwin, Kennelly, and Krause (1995), corporate sustainability is all about achieving

human development. However, Starik and Rands (1995) find corporate sustainability is ensuring collectivism in related levels or systems. In a similar vein, the authors' focus of definition varies widely within the broader goals of corporate sustainability such as integrity, stakeholder management etc. (Bansal, 2005; Dyllick & Hockerts, 2002; Van Marrewijk & Werre, 2003).

Table 2.1: Definitions of corporate sustainability

Researcher(s)	Definition	Focus
Gladwin et al. (1995)	Process of achieving human development in an inclusive, connected, equitable, prudent, and secure manner (p.878)	Human development
Starik and Rands (1995)	Ability of one or more entities, either individually or collectively, to exist and flourish (either unchanged or in evolved forms) for lengthy timeframes, in such a manner that the existence and flourishing of other collectivised entities is permitted at related levels and in related systems (p. 909)	Collectivism
Dyllick and Hockerts (2002)	Meeting the needs of the firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.) without compromising its ability to meet future stakeholders' needs as well (p. 131)	Stakeholder
Van Marrewijk (2003)	Demonstrating the inclusion of social and environmental concern in business operations and in interactions with stakeholders (p.107)	Stakeholder
Bansal (2005)	Construct based on three principles of economic integrity, social equity, and environmental integrity (p.198)	Integrity

Source: Author compilation

In reviewing the definitions presented in Table 2.1 and many other similar definitions, it can be concluded that most corporate sustainability conceptualizations are underpinned by stakeholders' theory (Freeman, 1984), which implies that firms must address the interest of individuals and groups affected by its operations. Consequently, as corporate sustainability definitions include shareholders, employees, consumers, and larger community considerations the definition remains broad.

More specific definitions connect sustainability either to particular aspects of sustainability e.g. ecological or social or to a particular business process. In every case, it is the business organisations who define its sustainability practice according to its sustainability goal. Indeed, the definition of corporate sustainability differs among business organisation because not each firm holds similar inclination towards sustainability incorporation. Hence, the interpretation of sustainability also varies according to ambition levels and sustainability engagement within a business organisation (Van Marrewijk, 2003). Table 2.2 summarizes the ambition levels, sustainability engagement, and consequent interpretations of sustainability within an individual firm.

Table 2.2: Level of ambition and interpretation of sustainability

Level of ambition	Sustainability engagement	Interpretation of Corporate Sustainability
Very Low	Compliance-driven	Corporate sustainability means doing something for society as an obligation set by the rightful regulatory bodies.
Low	Profit-driven	Corporate sustainability means integration of ethical, ecological and social aspects into the organisational process provided that it improves reputation and benefits financially.
Moderate	Caring	Corporate sustainability means caring financial, social and environmental aspects beyond limiting to legal and profit consideration as all are as important as others.
High	Synergistic	Corporate sustainability means a synergistic or win-together method of balancing financial, ecological and social aspects of corporate performance recognising it as the inevitable direction for any progress.
Very High	Holistic	Corporate sustainability means an embedded approach which integrates all aspects of the business operation to ensure quality and sustenance of every living and entity as they all are interdependent.

Source: Author compilation based on Van Marrewijk (2003)

Table 2.2 rather explains why conceptualisation of sustainability still remains voluntary and flexible in the firm's specific context. The most prominent approaches for defining corporate sustainability, however in practice, refers to a company's voluntary activities which demonstrate the inclusion of social and environmental concerns in business operations and in interactions with stakeholders (Van Marrewijk & Werre, 2003). Moreover, the lack of the firm's specific frameworks that define the dimensions of corporate sustainability also made the conceptualisation overly broad in most cases.

2.4 Dimensions and Measurement of Corporate Sustainability Performance

As explained in the previous sections, the corporate sustainability concept was developed through different stages. This evolution process left different dimensions to be incorporated into sustainability conceptualisation which later became a multidimensional concept (Van Marrewijk, 2003). Bansal (2005) established that both resource-based and institutional factors influence corporate sustainable development. By exploring time-related effects, he also pointed out that media pressures were important in early periods and resource-based opportunities endured over time. It can be argued that the term "Sustainability" has emerged over time from the "triple bottom-line" consideration of (1) economic viability, (2) social responsibility, and (3) environmental responsibility (Elkington, 1998). The most popular sustainability consideration, "Our Common Future" (Judd & Kenny, 1981), which seeks business organisations to cooperate to build a sustainable world, was also based on these three dimensions. However, environmental considerations are often the focus of attention by both researchers and practitioners amongst other dimensions referred to in the triple-bottom-line explanation of corporate sustainability (AICPA, 2016).

Despite the significance of the environmental dimensions of sustainability, the other dimensions cannot be ignored since they all encompass sustainability. In addition to the preservation of the physical environment and the stewardship of natural resources, sustainability considers the economic and social context of doing business. and also encompasses the business systems, models and behaviours necessary for long-term value creation (AICPA, 2016). Traditionally, business performance is viewed as two-fold i.e. financial and non-financial. Non-financial performance is another important dimension of organisational performance like financial or economic consideration. Non-financial performance is often termed specifically as ESG i.e. environmental, social, and governance performance. Rahdari and Rostamy (2015) clearly noted that investors are quite convinced that, apart from financial issues, the integration of ESG into their investment process maximises their long-term interest. This is evident in the rapidly growing upward trend in socially responsible investing. Table 2.3 depicts how sustainable, responsible, and impact investing (SRI) has grown in the last few years around the world.

Table 2.3: Growth of SRI Assets by Region (2014-2016)

	2014	2016	Growth (%)
Europe	10,775	12,040	11.7%
United States	6,572	8,723	32.7%
Canada	729	1,086	49.0%
Australia/NZ	148	516	247.5%
Asia*	45	52	15.7%
Total	18,269	22,417	22.7%

Note: Asset values are expressed in billions \$; *excluding Japan

Source: Global Sustainable Investment Review, GSIA (2017), p.8

Furthermore, ESG issues enable firms to review thoroughly the firms' potential risks and opportunities in the long run which in turn signals the management quality and sustainability of firms. Thus, sustainability performance is the most advanced way of demanding for ESG incorporation into business performance evaluation. On the other hand,

no one can ignore the relevance of financial performance for the sustainability of the business operation. Therefore, most of the recent studies argue mainly on four dimensions of corporate sustainability performances i.e. financial, environmental, social, and governance performance. They are, in fact, the blend of ESG and Triple bottom line (TBL) considerations for the sustainability performance of an organisation. Figure 2.1 shows the contributors to sustainability performance dimensions which resulted in four dimensions, namely Economic, Environmental, Social, and Governance. TBL argued on three dimensions such as Economic, Environmental, and Social likewise ESG argued on three dimensions such as Environmental, Social, and Governance. Eventually, the combination of all dimensions results in four different dimensions where Environmental and Social dimensions are common to both TBL and ESG considerations of corporate sustainability.

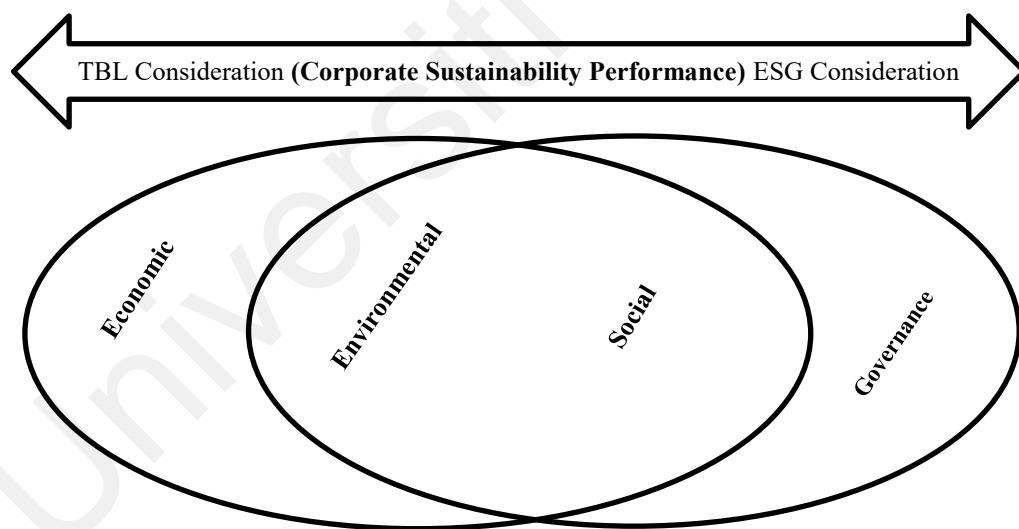


Figure 2.1: Contributors to sustainability performance and its dimensions
(Source: Author compilation)

There is increasing acceptance from academics and standard-setting boards to conceptualise sustainability performance under the above four dimensions (Aras & Crowther, 2008; Dočekalová & Kocmanová, 2016; Fakir et al., 2019; Lee & Saen, 2012;

Rahdari & Rostamy, 2015). For example, Lee and Saen (2012) found the abovementioned four dimensions of sustainability after using data envelopment analysis (DEA) technique in the Korean electronics industry. A more comprehensive study by Rahdari and Rostamy (2015) also revealed a number of most common indicators to assess sustainability performance which they have grouped into the same four dimensions. In addressing the widespread confusion in choosing sustainability indicators from a vast universe of sustainability guidelines, Rahdari and Rostamy (2015) employed four-prolonged approaches of examining CSR and normative sustainability frameworks, management guidelines, and rating systems to reach the conclusion. On a similar note, Dočekalová and Kocmanová (2016) proposed an integrated Complex Performance Indicators (CPI) to measure CSP based on statistical analysis which also includes financial, social, ecological, and governance dimensions. It is important to note that researchers and related standards and guidelines often name the dimensions differently as discussed above (i.e. financial, environmental, social, and governance sustainability) for the performance measurement or sustainability indexing. However, the above four dimensions are the most commonly approached dimensions for corporate sustainability performance.

From the extant literature, different approaches for measuring the level of corporate sustainability performance can be extracted. Igalens and Gond (2005) identified five different approaches to measure CSP such as content analysis, survey, reputational indicators, unidimensional, and multidimensional indicators. All these approaches can be categorised under three groups. The first group of studies applied the content analysis approach of annual reports or other published documents (Morioka & Carvalho, 2016; Riccaboni & Luisa Leone, 2010). The second group employed a survey approach for the board of directors and/or managers (Sultana, Zulkifli, & Zainal, 2018; Torugsa, O'Donohue, & Hecker, 2012; Wijethilake, 2017). The third and most widely used approach

is using reputational, unidimensional, or multidimensional indicators of sustainability performance. Majority of the studies employed the third group of approaches based on indicators produced by specialised organisations dedicated to developing and quantify the model and ratings of sustainability dimensions. Among them, three sources which have been used extensively in CSP studies are the KLD indices, the GRI, and DJSI.

In 1989, KLD was founded by Peter Kinder, Steve Lydenberg and Amy Domini. KLD offers the largest body of research database for social researchers which eventually got immense popularity among both sustainability researchers and social investment portfolio managers. KLD review includes a company's strengths and weakness data in nine major social areas, namely the environment, employee relations, product safety, excessive compensation of executives, nuclear power, military contracting, community involvement, quality programmes, and diversity (Barnea & Rubin, 2010). On the other hand, GRI, which stands for the Global Reporting Initiative, is the first to provide a framework for standard sustainability reporting (Leszczynska, 2012). It is a widely recognised guideline which received considerations from the sustainability researcher beyond the customary use of the guide (Isaksson & Steimle, 2009; Joseph, 2012). Most researchers used GRI guidelines to set a standard to evaluate the sustainability performance of intended firms (A. Adams et al., 2014; Ballou, Heitger, & Landes, 2006; Jennifer Ho & Taylor, 2007). The other indexing named, Dow Jones Sustainability Index (DJSI), is renowned for the calculation and publication of ESG indices. DJSI seeks answers for 80-120 questions focusing on ESG factors relevant to a company's performance from over 3,400 listed companies around the world. Management researchers use DJSI to identify exemplary sustainable firms as a proxy for CSP. It is a 'best-in-class' approach to measuring sustainability leaders' performance (Christofi et al., 2012).

Despite all the approaches including content analysis, survey, and indicators approaches have got attention from the researchers, every approach is preferable to others for specific study context and objectives. In the case of an uphold study, the survey approach is preferred over other approaches for some reasons. Firstly, in Bangladesh context, databases like KLD, GRI, and DJSI provides inadequate information regarding sustainability indicators with high missing values which eventually limits the scope of the study and encounters reaching a conclusion on the study questions. This is evident in an extremely limited number of studies using the indicator approach for measuring sustainability performance in the Bangladesh context. Secondly, on the contrary, most studies in the Bangladesh context used content analysis approach. In other words, used annual reports or websites of respective firms to extract the data on sustainability performance. This approach has also suffered because of the limited availability of data. Granted that many companies have started reporting on sustainability issues, the sustainability disclosure practices in Bangladesh, however, are characterised by inadequacy, lack of reliability, transparency and accountability (Muttakin, Khan, & Subramaniam, 2015).

Moreover, the disclosure practices in Bangladesh are largely driven by the provisions of the Companies Act and the regulations of the Security Exchange Commission, which do not require the Bangladeshi companies to report sustainability performance information. Likewise, other institutional pressure i.e. investor awareness is also a minimum requirement for sustainability disclosure (Muttakin et al., 2015). Therefore, considering the institutional context, Bangladeshi companies suffer for lack of sustainability disclosure in comparison to their large and profitable counterparts in developed countries. Moreover, due to the industrial difference, not all firms are willing to divulge such information in a similar fashion. Finally, the survey approach where data are collected through questionnaire or interview can, not only, overcome the problem of data scarcity but rather

it could generate more specific and reliable information for the study. Accordingly, a limited number of population (only 298 companies are listed in Dhaka Stock Exchange, Bangladesh as of 2nd May 2017) are also taking full advantage of this multi-industry sample for the study which relies on survey approach for corporate sustainability performance measurement.

2.5 Prior Studies on Corporate Sustainability Performance

Prior studies have investigated dynamic arrays of different aspects of corporate sustainability performance (CSP) which can be grouped into a few clusters. To illustrate, a group of researchers have endeavoured to compare and contrast CSR and CSP. Although other scholars have concentrated on exploring the interrelation between financial performance and CSP, a few scholars including Bansal (2005) and Artiach, Lee, Nelson, and Walker (2010) have studied the determinants of CSP, and the remaining scholars studied how CSP can be integrated into the business process or strategic management process. The following sections will deal with abovementioned issues in detail for summing up the essence of prior studies on CSP.

2.5.1 Corporate Social Responsibility (CSR) and Corporate Sustainability Performance (CSP)

Often, it is very difficult to draw a fine line between CSR and CSP. Previous studies also used both the terms nearly synonymously. However, Przychodzen and Przychodzen (2013) termed this as a common misunderstanding because of their difference in theoretical paths and backgrounds. The CSR concept encapsulates a wide variety of subjects that affect the firm or be affected by the firm. In essence, it might look very closely aligned with CSP, though CSP is different in the forms and degree of management responsibility (Murray, Haynes, & Hudson, 2010). Although CSR is partly contributing to sustainability

by focusing on socio-environmental dimensions of corporate activities, nevertheless, CSP has a much wider concept with a multi-dimensional perspective. CSP includes transferring and systematically integrating all the ideas of sustainability dimensions into the business level. A larger number of researcher argued for a broader definition of CSP that embraces ecological, social, economic, and governance goal of the business organisation. However, there still remains many researchers who are confused on the different levels or dimensions of CSP, for example ambiguity in conceptualising CSP either as a bi-dimensional (environmental and social), or a tri-dimensional construct (TBL-economic, environmental, and social or ESG-environmental, social, and governance) (Montiel & Delgado-Ceballos, 2014). To overcome this ambiguity, Montiel and Delgado-Ceballos (2014) noted that researchers should use an appropriate term i.e. if the focus of the study is on single aspect (social) or bi-dimensional (social and environmental) the correct term to be used is CSR but if anyone aims to analyse tri-dimensional construct (based on TBL or ESG framework) the correct term to be used is CSP.

In contrast to viewing CSR and CSP as two exclusive constructs, considering these two constructs as mutually inclusive at least to some extent is more appropriate. Furthermore, the variability in defining CSP and CSR somewhat contributed to the richer discussion and the gradual development of the field. Eventually, CSR and CSP have converged (Hahn, 2011) and most of the studies have considered them as consistent concepts (Freundlieb, Gräuler, & Teuteberg, 2014). Both the conceptual and empirical literature support this view. For example, the Business Society Management of the Erasmus University in 2000 placed CSP as the ultimate goal whereas CSR mediates the achievement of such a goal by incorporating TBL consideration.

Figure 2.2 replicates the idea that to achieve the goal of corporate sustainability, an individual firm needs to ensure that CSR is integrated into its business process. In addition to that, Kaptein and Wempe (2002) also noted that both the concepts of corporate sustainability and CSR is founded on 3P considerations, namely profit, people, and the planet.

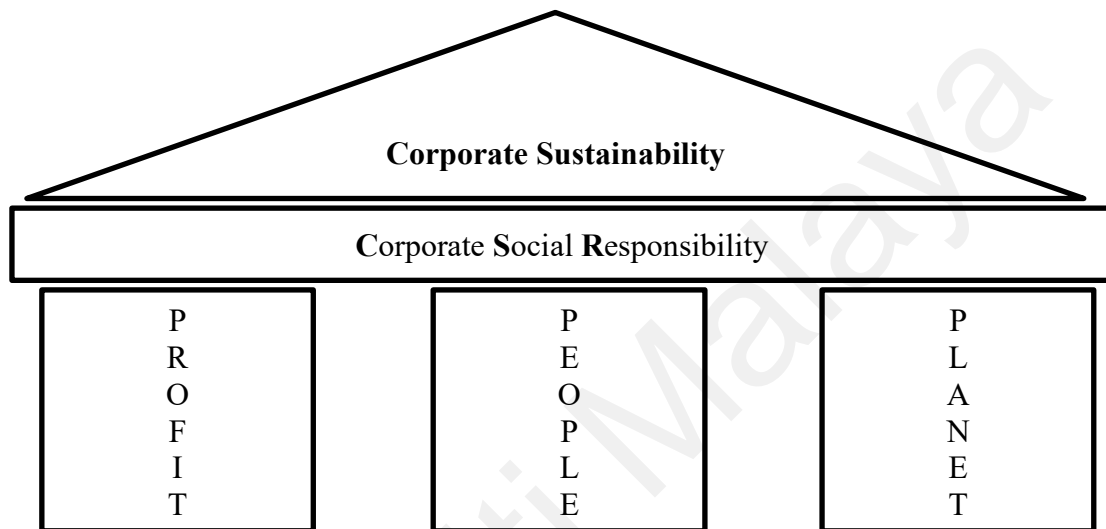


Figure 2.2: Relationship between CS and CSR
(Source: Kaptein and Wempe (2002))

In a similar fashion, Panapanaan, Linnanen, Karvonen, and Phan (2003) presented CSP concepts through a much simple framework based on traditional CSR framework and TBL consideration as illustrated in Figure 2.3.

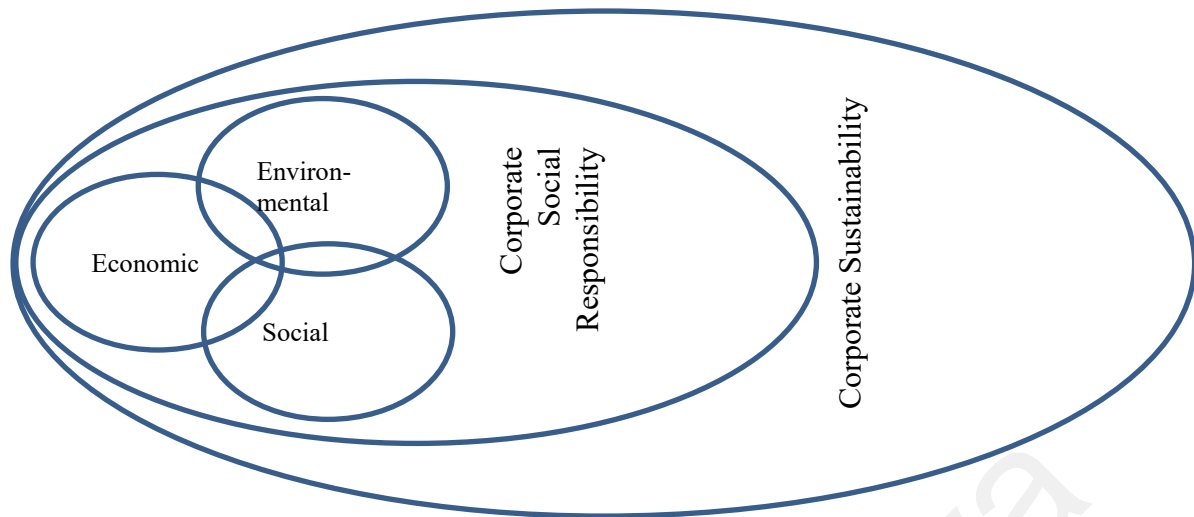


Figure 2.3: Relationship between TBL, CSR, and CS
(Source: Van Marrewijk (2003))

Unlike 3P considerations, Panapanaan et al. (2003) consider TBL as the founding principle of CSR and CSR as the founding principle for any other corporate sustainability practice. It is, therefore, important to point out that scholars conceptualise both CSR and CS based on similar grounds, and in most cases, CS is termed as the final goal and CSR is treated as the predecessor for CS.

Thus, it can be concluded that most prior studies conceptualise corporate sustainability and CSR differently but even though they are based on an objected subject to similar considerations (Panapanaan et al., 2003; Van Marrewijk, 2003). However, an analogous view of CSR and CSP is not uncommon. The empirical studies which endeavoured to explore the interaction between CSR and CSP also found support for the analogous and divergent view. In other words, the prior studies can be grouped into two schools of thought, namely those who deem CSR and CSP as analogous terms and the others as divergent terms. Table 2.4 summarises the conclusions regarding CSR and CSP by recent studies. For example, scholars including (Siew, 2015) and (Hahn, 2011) view CSR and CSP as

analogous while the other scholars including (Montiel & Delgado-Ceballos, 2014), (Przychodzen & Przychodzen, 2013), and (Aras & Crowther, 2008) view CSR and CSP as completely different (divergent) concepts.

Table 2.4: Conclusions regarding CSP and CSR

Author & Year	Conclusion	CSR & CSP
Siew (2015)	CSR and CSP are synonymous as both are based on voluntary activities	Analogous
Montiel and Delgado-Ceballos (2014)	CSR is part of holistic CSP which simultaneously considers environmental, economic, and social standards	Divergent
Przychodzen and Przychodzen (2013)	CSR and CSP are different considering their background and theoretical foundation	Divergent
Hahn and Kühnen (2013)	Rarely CSP is complete in terms of all three pillars of sustainability	Divergent
Hahn (2011)	CSR and CSP gradually converge therefore become a universal concept	Analogous
Aras and Crowther (2008)	CSR and CSP matured through different stages including its fourth and fifth stages respectively	Divergent

Source: Author compilation

Table 2.4 satisfies most of the studies that can differentiate the two concepts of CSR and CSP. The main point of difference is CSR which partially contributes to achieving the holistic CSP. However, by ignoring the multidimensional aspects of the CSP concept many studies have identified CSP with environmental performance and other social performance. Initially, this approach seems confusing and is much similar to CSR but, nevertheless, it can also be considered as openness or a novelty of the term which enriches the discussion issues in the development of the field of CSP (Montiel & Delgado-Ceballos, 2014).

2.5.2 Corporate Financial Performance (CFP) and Corporate Sustainability Performance (CSP)

Corporate sustainability is fundamentally complex with different economic, social, and environmental objectives which are all desirable in isolation but whether they can all go simultaneously or not is a million-dollar question. Some researchers find that they are

interlinked and positively affect one another while many others find it to be the opposite. The first group of studies which established positive relations can be termed as ‘business case perspective’ (Salzmann, Ionescu-somers, & Steger, 2005) and the later ‘paradox perspective’ of corporate sustainability (Hahn, Figge, Pinkse, & Preuss, 2018). Although the conflict between any two dimensions of CSP is possible i.e. environmental and social or social and financial etc. most of the researches put all their effort in examining the conflict between financial performance and other sustainability. This additional research is justified because CSP orientation is to expand business emphasis from merely ‘profit maximisation’ to greater sustainability including environmental, social, and governance performance which many are still not convinced in their positive linear approach (Hahn & Kühnen, 2013; Hahn et al., 2018; Nollet, Filis, & Mitrokostas, 2016; Xiao, Wang, van der Vaart, & van Donk, 2018). In the following sections, the relationship between Corporate Financial Performance (CFP) and CSP is presented under the two perspectives.

The first line of research concludes that CSP pays off in terms of financial reward either in the short run or at least in the long run. This school of researchers predominantly use the stakeholder theory or agency theory to justify their positive nexus. Several studies derived support in favour of the argument that environmental, social or other dimensions of CSP are ultimately recognised by the customers and investors who will positively convert it into profitability. For example, Waddock and Graves (1997) found that there is a positive association between CFP and CSP regarding both prior and future cash flows. This supports the slack resources theory i.e. prior financial resource that positively influences the performance and the good governance theory i.e. environmental and social performance would generate future financial resources. To state it differently, the study supports the two-way positive relationship between CFP and CSP. From the innovation perspective, through investing in social and environmental welfare the company builds reputational

capital hence boosts financial performance. Many studies, for example, Bird, Hall, Momentè, and Reggiani (2007), Hammond and Slocum (1996), and Qiu, Shaukat, and Tharyan (2016) argued that a strong positive reputation can earn the ability to lower its transactional cost by attracting and retaining higher quality employees, suppliers and with more loyal customer which later will translate into increased sales and profit. Similarly, after analysing the data of the French restaurant industry from 1991 to 2011, Kim and Kim (2014) found there is a positive effect of ESG performance on market value.

On the other hand, the paradox perspective argued on the contradictory relationship between the dimensions of CSP. This stream of researchers suggested that the relationship between CSP and CFP is either negative or at least neutral. The paradox theory in management states that independent elements of phenomena consistently contradicts and builds tensions among these apparently isolated items (Schad, Lewis, Raisch, & Smith, 2016). In the context of CSP, the behaviour of different dimensions of sustainability competes and contradicts while achieving a common organisational sustainability goal. Although only the recent studies use the paradox theory in conceptualising CSP (Gao & Bansal, 2013; Hahn & Aragón-Correa, 2015; Hahn & Pinkse, 2014; Slawinski & Bansal, 2015), nevertheless, it is rooted in an argument presented in the late 60s by Friedman. Friedman (1970) argued that the only goal of business is to strive for profit while respecting ethical and legal doctrines which is termed as social and other responsibility “fundamentally subversive doctrine” for business. Moreover, many studies find support for this argument (Cordeiro & Sarkis, 1997; Wright & Ferris, 1997). Both the trade-off approach and managerial opportunism approach defended the negative effect of CSP on CFP due to the fact that, in most cases, CSP associated costs outweigh the benefits generated (Aupperle, Carroll, & Hatfield, 1985; Friedman, 1970). In addition, another string of studies argued that CSP and CFP are mutually exclusive with no sharing values

and all the relations are only random. Therefore, it is better to conclude that CSP-CFP relationship status is inconclusive or mixed.

Taking note of the above conclusion, recent studies have identified few methodological and conceptual anomalies such as differences in measures, industries, countries, or time frame used in the prior studies which can be the root cause for such inconclusiveness. Moreover, moderators or mediators could support occasional and non-significant relationship. For example, (Esteban-Sanchez, de la Cuesta-Gonzalez, & Paredes-Gazquez, 2017) found that CSP can only reflect the effect on CFP in the long run. In a similar vein, Xiao et al. (2018) argued that country context can explain the pay-off period for CSP. In other words, in some countries, the pay-off period for CSP in cash reward is short while in other countries it is much longer.

Therefore, it can be concluded that to gain a conclusive understanding of the relationship between CSP and CFP more endeavour is required. The probable causes and determinants need to be identified and appropriate measures to be taken to minimise their negative impact because both the dimensions (financial and ESG) are fundamentally embedded into the sustainability concept and success in long run often depends on the firm's ability to manage multidimensional and contradictory objectives (Smith & Lewis, 2011).

2.5.3 Determinants of Corporate Sustainability Performance (CSP)

Prior studies have suggested a diverse set of determinants on corporate sustainability performance (CSP). Firms must maintain a good relationship with its key stakeholders so that they can gain access to scarce resources which is ultimately controlled by the stakeholders (Roberts, 1992). According to Deegan (2002), firms need to legitimise their operations to access the required resources. Therefore, it can be maintained that the firms'

continuous search for legitimacy and stakeholders' acceptance is the main driver for incorporating sustainability performance. However, the research studies employed to identify the determinants of CSP is customarily regarded as either firm-specific variables or governance-specific. Firm size, growth, ROE, leverage, and risk appetite are the most noticeable variables that catch the researcher's attention in the firm-specific category (Artiach et al., 2010; Lourenço & Branco, 2013; Ziegler & Schröder, 2010). Other than this, the market competition, country context, legal environment, media pressure, and international exposure have also got attention from prior researchers (Chih, Chih, & Chen, 2010; Kolk & Perego, 2010). In the governance category, the board of directors has received maximum attention (Ahmad & Omar, 2016). For example, board independence, diversity, expertise, and composition etc. had been researched in the context of CSP (Fuente, García-Sánchez, & Lozano, 2017; Shaukat et al., 2016; Velte et al., 2016). However, the governance category has got less attention in comparison to the other categories. The next section cites a few examples of these studies which are concentrated in identifying the determinants of CSP in a different context.

It is noteworthy to report that one of the first studies on CSP determinants has been cited in the study by Bansal (2005). She interviewed industry members and reviewed company annual reports of Canadian firms for 10 years and, thereafter, concluded that CSP increased from 1986 to 1995. Her study suggested that media pressure, international exposure, mimicry, and firm size largely contributed to the increase. Another study that examines determinants in the North American context is by Artiach et al. (2010) who used 2063 firms' year observations from the USA. Their aim was to find the firms' specific factors that contribute to CSP, as proxy by Dow Jones Sustainability World Index (DJSWI). They established that larger firms with higher growth levels and higher return on equity (ROE) are more sustainable in comparison to other conventional firms. However, they found no

relevance of slack resources and leverage with CSP. Using the data from the context of developing countries, Lourenço and Branco (2013) attempted to extract the firms' operating and financial factors that lead to CSP. They analysed Sao Paulo Stock Exchange listed companies and found similar findings by Artiach et al. (2010). However, they found that the financing characteristics are significant in the CSP determination.

Ziegler and Schröder (2010) investigated the incentives for CSP in the European context. They used a more comprehensive index which comprised of a combination of DJSWI and Dow Jones STOXX Sustainability Index (DJSSI) and concluded that the firms' size is positively linked with CSP whereas the financial strength is linked negatively. However, their analysis found no relevance to the risk tolerance of the management. In a similar fashion, Chih et al. (2010), using an international sample of 520 companies in 34 countries worldwide, examined whether CSP is determined by institutional and financial variables. Their empirical test revealed the firm's size, market competition, and stronger legal enforcement drive towards CSP. The other studies using an international sample found similar results. For example, Kolk and Perego (2010) carried out a cross-country analysis on the determinants of sustainability and reported that firms operating in more stakeholder-oriented countries where stakeholder claims are typically taken into account in top management decisions and job security becomes a main corporate objective, are more likely to adopt CSP compared to that of weaker governance regime.

For the board, related variables that determine CSP is relatively under-researched. However, several studies relating to governance in the context of ESG performance and broader CSR relevance is noteworthy. For example, Shaukat et al. (2016) found that board CSR orientation is measured by board independence, diversity, expertise, and audit committee which contributes to a positive CSP for UK listed companies. For Spanish

companies listed in Madrid Stock Exchange for the period of 2004 to 2010, Fuente et al. (2017) found that corporate transparency regarding CSP is directly related to board diversity, independence, and CSR committee. Similarly, the European context of German and Austrian firms' with women members in the management board have also found to be positively linked to ESG performance (Velte et al., 2016).

2.5.4 Integration of Corporate Sustainability into Strategic Management Process

Today's managers have recognised the significance of integration of corporate sustainability topic, but few rarely adopts it in the strategic management process (Kiron, Kruschwitz, Haanaes, & von Streng Velken, 2012; Kiron, Kruschwitz, Rubel, Reeves, & Fuisz-Kehrbach, 2013). However, the integration of corporate sustainability into the strategic process is considered inevitable due to rapid changes in ecological and social forms leading company strategies to adapt to dynamic situations. Since corporate sustainability decisions are made at the strategic level, prior studies also showed their increased interest in the strategic integration of sustainability (Jin & Bai, 2011; Stead & Stead, 2011).

Corporate sustainability integration can be rooted at different levels. Several studies have proposed normative, strategic, and operational level sustainability integration (Baumgartner, 2014; Labuschagne et al., 2005; Zhang, Rio, et al., 2013). The normative level of integration comprises addressing sustainability in the firm's vision and mission, policy, corporate culture, and corporate governance so that it can enhance stakeholders' confidence and legitimacy (Bleicher, 2011). Strategic management level sustainability incorporation focuses on ensuring effectiveness and long-run goal achievement through sustainability (David, 2011). On the operation level, sustainability strategies are

implemented in the regular business process (Engert, Rauter, & Baumgartner, 2016; Hahn, 2013).

Extant literature suggests a number of the corporate sustainability integration process. For example, Siebenhüner and Arnold (2007) identified that the most common approaches are using energy efficient technologies, offering more eco-friendly products or service process, and enhanced sustainability reporting initiatives. Several other researchers have proposed a model that incorporates sustainability in the formulation, implementation, and evaluation of business strategies at different stages (Galbreath, 2009; Nathan, 2010; Stead & Stead, 2011). However, the integration of sustainability in the strategic management level is influenced by several drivers and factors. According to Engert et al. (2016), these are shown in Figure 2.4.

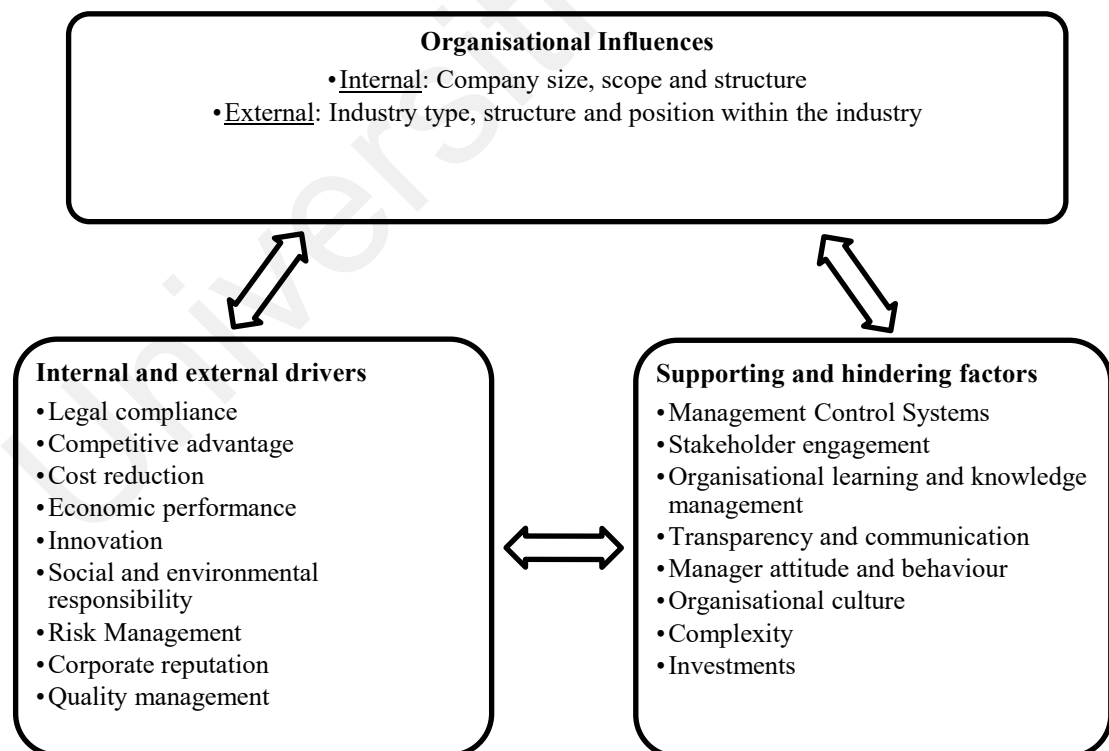


Figure 2.4: Drivers and factors of sustainability integration in strategic management level (Source: Engert et al. (2016))

Engert et al. (2016) developed the abovementioned three types of factors after reviewing the literature on sustainability and strategic management from 1991 to 2013. The three types of factors are; namely organisational influences, supporting & hindering factors, and internal & external drivers. Organisational influences are issues that are essential for successful business operation. This includes firm-specific (internal) and industry-specific (external) factors. They influence sustainability integration into strategic level irrespective of the integration stage. The second type of factors is internal and external drivers. These drivers are advantages as the firm can secure if integrate sustainability into its strategy, namely: legal compliance; economic performance; competitive advantage, innovation; cost reduction, risk management; CSR; and corporate reputation. The third set of factors comprise the supporting and hindering issues that influence sustainability integration process either in a positive or negative manner including complexity, investments, MCS, manager attitude and behaviour; corporate culture, knowledge management, stakeholder engagement, and lastly transparency and communication. Engert et al. (2016) also concluded that the strategic management grounded factors are expanding and are continually merging with other factors that are closely aligned with sustainability integration into a firm.

2.6 Corporate Governance Conceptualization

Corporate governance is a complex set of laws, rules, institutions, guidelines and mechanisms that ensure corporations are well managed and controlled. Governance is all about how to make good decisions, thus leaders at the helm of the organisations can through their actions bring out the good for the company. The concept of corporate governance has been defined by various authors over the years. The simplest and most concise definition was provided by the Cadbury Report (1992), which stated: Corporate governance is the

system by which companies are directed and controlled. However, studies on corporate governance often propose dynamic definitions that vary according to the context and study objectives. Table 2.5 summarises a few noteworthy definitions that would help to portray a better conceptualisation of corporate governance.

Table 2.5: Definitions of Corporate Governance

Author(s)	Corporate Governance Definitions	Scope and Orientation
Bain and Band (2016)	The essence of governance (CG) is found in the relationships between the various participants in determining the direction and performance of organisations. The primary groups involved are the shareholders, the board of directors and the management. Other players are the customers, employees, suppliers, creditors, and the community.	Broad and Goal-oriented
Blair (1995)	CG should be regarded as the set of institutional arrangements for governing the relationships among all of the stakeholders that contribute firm-specific assets.	Broad and Task-oriented
Cadbury (2000)	Corporate governance (CG) is concerned with holding the balance between economic and social goals and between individual and communal goals. The corporate governance framework is there to encourage the efficient use of resources equally and to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interest of individuals, corporations and society	Broad and Task-oriented
Carlock and Florent-Treacy (2003)	CG is an umbrella term that defines the processes, relationships and interactions which has been developed between a firm's senior management, its board of directors, and its shareholders. In simple terms, CG is a joint decision-making process about the business's strategy and policies.	Narrow and Task-&goal-oriented
Corbetta, Gnan, and Montemerlo (2002)	CG is defined as the way companies are directed and controlled; more comprehensive definitions refer to the set of formal and informal relations between the board of directors, shareholders, top managers, and other relevant stakeholders.	Broad and Task-oriented
Demb and Neubauer (1992)	CG is a process by which corporations are made responsive to the rights and wishes of their stakeholders.	Broad and Task-oriented
Hitt, Ireland, and Hoskisson (2012)	CG is a relationship among stakeholders that is used to determine and control the strategic direction and performance of organisations. At its core, CG is concerned with identifying ways to ensure that strategic decisions are made effectively.	Broad and Task-oriented
Huse (2000)	CG can be defined as the interactions among internal and external stakeholders and the board of directors in directing a corporation.	Broad and Task-oriented

Table 2.5, continued

Author(s)	Corporate Governance Definitions	Scope and Orientation
Huse and Landström (2002)	In general, and varying broad terms, CG deals with how external stakeholders, internal stakeholders and the board of directors contribute to directing an enterprise.	Broad and Task-oriented
Melin and Nordqvist (2002)	In a general sense, CG can be defined as how the owners' interest is organised and exercised in order to influence the strategy processes.	Narrow and Goal-oriented
Neubauer and Lank (2016)	CG is a system of structures and processes to direct and control corporations and to account for them.	Broad and Task-oriented
Brunninge, Nordqvist, and Wiklund (2007)	CG is a system of structures and processes that arise because of the interaction between the owners, the board of directors and the top management team in directing and controlling the firm.	Narrow and Task-oriented
O'Sullivan (2001)	A system of CG shapes who makes investment decisions in corporations, what types of investments they make, and how returns from investments are distributed.	Scope not specified and Task-oriented
Tirole (2010)	A good CG structure is one that selects the most able managers and makes them accountable to investors.	Narrow and Task-oriented
Vives (2006)	CG deals with the question 'How to ensure that managers follow the interests of the shareholder?' CG refers to the design of institutions to make managers internalise the welfare of stakeholders in the firm.	Broad and Task-oriented
Witt (2004)	CG deals with the optimal organisation of management and control in companies with the goal to balance the interest of all stakeholders.	Broad and Task-and goal-oriented

Source: Author Compilation

In reviewing the definitions presented in Table 2.5, it seems that corporate governance conceptualisations vary on two grounds, namely their orientation and their focus. Definitions are either goal-oriented thus stating the objective of governance or task-oriented thus explaining which jobs are done under the umbrella of corporate governance. On the other hand, the definitions presented are either shareholder focused, or stakeholder focused. For example, Demb and Neubauer (1992) defined corporate governance is a process which makes corporations responsible to their stakeholders. Here, the definition explains the task of the managers and the ultimate focus of CG (stakeholder). At the same time, the conceptualisation of Demb and Neubauer (1992) is broad as the focus of CG covers a wide

array of parties who are engaged in the company. Truly, most of the conceptualisations are broadly defined i.e. goal or task oriented and shareholder or stakeholder focused. Neubauer and Lank (2016) supported the two views of corporate governance conceptualisation and defined CG in two different approaches of goal and task orientation. In addition to that Pieper (2003), after reviewing past research, divided the previous conceptualisation into shareholder (narrow) and stakeholder (broad) focused. Besides the categorisation and focus of definitions, in general, the concept of corporate governance is a broad term which lacks consensus or agreement by researchers (Corbetta et al., 2002; Maher & Andersson, 2002; Neubauer & Lank, 2016). This is mostly because of the difference in the national legal system that explains the level of investor protection by local laws (La Porta, Lopez-de-Silanes, & Shleifer, 1999; Shleifer & Vishny, 1997).

Likewise, the broader conceptualisation of CG focusing on stakeholders' interest is of interest for the uphold study. This view is consistent with most of the definitions presented in Table 2.5. In summary, this study positions corporate governance as a set of mechanisms which is affected by the corporate board and executives to ensure the sustenance of the planet, society, and business. This study also argued that corporate sustainability should be the ultimate goal of all governance operation which is achievable when the key persons discharge their responsibility towards sound business process and conducive control environment.

2.7 Corporate Governance Mechanisms

One may simply conceptualise corporate governance as the ways and mechanisms, in which agency costs are minimised so that the interests amongst members of the supervisory/executive board and the shareholders are aligned (Shleifer & Vishny, 1997). Tirole (2010), on the other hand, argued for a broader definition that includes a wider range

of stakeholders such as employees, creditors, customers, and the local community etc. It is important to recognise that effective corporate governance comprises a series of mechanisms. For example, the agency model proposes a number of corporate governance mechanisms that are designed to reduce the agency costs associated with the separation of ownership and control (Fama & Jensen, 1983a; Jensen & Meckling, 1976; Solomon & Darby, 2005). Governance mechanisms can be split into two categories; internal and external. Internal mechanisms include board structure variables such as duality and the proportion of non-executive directors, debt financing and executive director shareholdings. The key external mechanism is the market for corporate control, which acts as a mechanism of last resort (Fidler et al., 2005). For example, the probability of replacement following acquisition provides a direct incentive for top management to perform well (Hayes, 2017; Nakagawa & Cuthill, 2007).

A number of recent reports of corporate governance, particularly those relating to board structures and board subcommittees have focused attention on the importance of the internal governance mechanisms (Cadbury, 1992; Cadbury, 2000). The key report, Cadbury (1992), recommended that publicly quoted firms should adopt the specified internal governance structures contained within a Code of Best Practice. Although it was voluntary, firms were expected to comply with the governance structures recommended in the Code of Best Practice. Further, the Dhaka Stock Exchange required all quoted companies to include in their annual report the extent to which they had complied with the Code of Best Practice. If the recommended structures were not in place, a clear rationale had to be given to shareholders. Board-related governance mechanisms are, therefore, prescriptive which includes minimisation of CEO duality, the inclusion of non-executive directors and appointment of board sub-committees.

Board of directors, therefore, attained maximum emphasis in relation to other governance mechanisms. The reason for this emphasis is rational. Any governance code is only a guide in general terms as to principles, structures and processes, and these structures and processes are brought to life by people. In other words, the Code is a guide to a number of key components for effective board practice. It is based on the underlying principles of all good governance: accountability, transparency, probity and focus on the sustainable success of an entity over the longer term. All Boards of Directors are responsible for the governance of their companies. The shareholders' role in governance is to appoint directors and auditors to satisfy themselves that an appropriate governance structure is in place. The responsibilities of the board include setting the company's strategic aims, providing the leadership to put them into effect, supervising the management of the business and reporting to shareholders on their stewardship. The board's actions are subject to laws, regulations and the shareholders at general meetings. Corporate governance is, therefore, about what the board of a company does and how it sets the values of the company. It is to be distinguished from the day to day operational management of the company by full-time executives.

2.8 Corporate Governance Models

It has been the contention among academics and economists whether corporate governance operates in the same way around the world but under different economic conditions. Extant literature answered the question by identifying different models for different economies (La Porta et al., 1999; Prowse, 1994; Shleifer & Vishny, 1997). Guillén (2000) argued that cross-national patterns of governance approaches are converging on either the 'Anglo-American model' or 'Multi-stakeholder model'.

The Anglo-American model is distinguished by 'transparent legal environment' and 'arm's length financing arrangement' is widely adopted by Anglo-American countries such as USA, Canada, UK, Australia and New Zealand (Prowse, 1994). In this model, the interests of shareholders are emphasised and explicit contracts ensure the protection of shareholders. It relies heavily on a single-tier board of directors which monitors management action. Non-executive directors dominate the board by numbers who hold key posts i.e. audit committee, compensation committee. Shareholders' rights are largely protected through ensuring a liquid equity market and enforcement of information disclosure regulations. Shareholding is dispersed and dominated by large investors who often react to bad corporate management/ performance by selling shares or takeovers (Denis & McConnell, 2003; Prowse, 1994). Under the Anglo-American model, the market plays a more dominant role in governance than any institutional relationships. That is why it is identified as a 'market based' system of the corporate governance model.

The multi-stakeholder model is distinguished by 'relationship-centred' and 'control-oriented financing' which has been widely adopted by Europe and East Asian countries such as Germany, Austria, the Netherlands, and Japan (Prowse, 1994). Under this model, the governance structure seeks participation from a wide range of stakeholders of the firm in order to achieve its common goal. This model features the two-tiered board constituted by the management board and the supervisory board. The management board is made up of company executives while the supervisory board is made up entirely of non-executive directors. The supervisory board represents investors and the society at large who can hire or fire the members of the executive board, determine their compensation, and review major business decisions (Kraakman & Hansmann, 2017). Countries who adopt this model typically peruse concentrated ownership with the less liquid financial market. Companies keep a close connection with its core investors who play the vital role of management

control as part of monitoring corporate actions. In most cases, the core investors are banks or a combination of banks or a non-bank financial institution, other corporations, large corporate shareholders and banks who retain their largest investors (Zhuang, Edwards, & Capulong, 2001). Even in some cases, the core investors hold the supervisory position of the corporate board which reduces the cost of information extraction and assists in reducing information asymmetry.

Adapted from Rashid, De Zoysa, and Rudkin (2007) and Prowse (1994), Table 2.6 draws a fine line between the two aforementioned models of corporate governance:

Table 2.6: Comparison between the Anglo-American model and the multi-stakeholder model

Mechanisms	Anglo-American Model	Multi-stakeholders Model
Ownership Structure	Dispersed	Concentrated
Financial Markets	Highly liquid	Less liquid
Monitoring	Largely done by country law or market mechanisms	Largely done by individual shareholder and financial institution
Shareholder's Right	Established	Not established
Creditor's Right	Strong	Weak except for large stakeholders
Independence of the board of directors	Low	High
Market control	A hostile takeover is common	Takeover is circumscribed

Source: Adapted from Rashid et al. (2007)

It is worthy to note that although the above-mentioned models are predominant around the world, there are other models implemented which are mostly a combination of these models either more shareholder-oriented (Anglo-American) or stakeholder oriented. The country's culture and regulations determine the actual model in the application (Guillén, 2000; Kraakman & Hansmann, 2017; Prowse, 1994). However, recently a new model of corporate governance is proposed from the scholarship of the University of Oxford for ultra-modern founder-run giant companies like Netflix, Facebook, and Google where the

separation of ownership and control is further narrowed down. This model integrates the capacity of founder and non-founder senior leadership to set through a governance model for such companies. Therefore, it can be concluded that a particular corporate governance model is a result of a process with a large number of factors that directly or indirectly influence governance.

2.9 Corporate Governance: Bangladesh Perspective

Before the year 2000, the official journey of corporate governance in Bangladesh has not started. The first initiative for the development of the code for corporate governance is made by the Bangladesh Enterprise Institute (BEI) in late 2003. BEI is a private consulting firm which later published two noteworthy reports namely “A Comparative Analysis of Corporate Governance in South Asia: Charting a Roadmap for Bangladesh” and “The Code of Corporate Governance for Bangladesh” in 2004 after conducting a diagnostic study. In the following year, The Institute of Chartered Accountants of Bangladesh (ICAB) proposed the draft code of corporate governance of Bangladesh which later received the attention of the Securities & Exchange Commission (SEC) of Bangladesh. SEC Bangladesh finalised these codes and issued an order to comply with for listed companies in both Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE) in January 2006. The corporate governance model of Bangladesh is a mixed model of Anglo-American and Multi-stakeholder model as discussed in previous sections. Table 2.7 describes the salient features of the corporate governance structure of Bangladesh:

Table 2.7: Salient features of corporate governance structure in Bangladesh

Corporate Governance Characteristics	Bangladesh Situation
Ownership Structures	Concentrated in the hands of banks, financial institution, other corporations or dominant shareholders
Share of control-oriented finance	High concentration of control by a small number of shareholders. These are predominately either from family investors or financial institutions.
Financial Markets	Small, not very liquid.
Monitoring by financial institutions	Supposed to be extensive, but really very little.
Monitoring by individual shareholders	Yes, if family or financial institution because in a position of power and knowledge to do so. No, for smaller investors as they are not educated to do so. No formal policing of structures – regulations.
Shares of all firms listed on the stock exchanges	Small – still a large number of state-owned enterprises not listed.
Ownership of debt and equity	Concentrated.
Investor's Orientation	Control, not portfolio – family owned.
Shareholder's Rights	Weak – lack of knowledge about their rights.
Dominant Agency Conflict	Between Controlling and Minority Shareholders.
Creditor's Rights	Strong for banks, weak for commercial.
Role of Board of Directors	Limited.
Role of Insolvency and Bankruptcy	Limited – high debt financing involvement.
Board Independence / Power Over Management	Therefore, there is an absence of any accountability structure of management to the board. In case of State-Owned Enterprises (SOEs), when the Chairperson of the Board is also a cabinet minister, there is a tendency to treat the SOE as a government department rather than a corporate entity (Rahman, 2007).
Market for corporate control	Takeovers are absent as the ownership is highly concentrated in the hands of family and lack of takeover regulations and due to non-efficient market.

Source: Rashid et al. (2007)

Table 2.7 emphasised that Bangladesh is featured with no readily available liquid financial market that restricts shareholders to rely on market mechanisms for their wealth protection. In most cases, investors had to rely on the legal framework or board of directors. Therefore, the independence of the board is inevitably important to ensure shareholders' protection in the case of Bangladesh. However, the independence of the board in

Bangladesh is often debated (Rashid, 2018). At the same time, Bangladesh enjoys control oriented finance predominantly either from family investors or financial institutions. However, shareholders' knowledge about their rights is also limited in Bangladesh. From Table 2.7 it can be concluded that many of the features are aligned with 'Multi-stakeholder Model' with some exceptions, for example, no two-tier board are applied and monitored by individual shareholders who are less executable (Rashid, 2018).

2.10 Prior Studies on Corporate Governance

2.10.1 Corporate Governance and Financial Performance

Corporate governance remains on top as one of the most popular research issues for the last three decades due to its extensive effect on firm performance (Paniagua, Rivelles, & Sapena, 2018). Prior studies on corporate governance are linked to the firm's financial performance which covers a wide range of governance topics including corporate governance policies, shareholders, board structure, ownership structure, and management remuneration (Paniagua et al., 2018; Rashid, 2018; Shaukat et al., 2016). Paniagua et al. (2018) identified two major corporate governance areas that influence economic performance: board structure and ownership structure.

2.10.1.1 Board Structure

Corporate boards are the primary and dominant internal corporate governance mechanisms. Board of directors can play a vital role in aligning the interest of managers with shareholders by monitoring management operation. Also, the Board can guide management through strategy review and ratification of management proposals and can exercise a whistle-blower function in case of major breakdown (Jonsson, 2005; Salmon, 1993). Therefore, scholars have confirmed that the board structure has relevance to the

firm's performance (Eisenberg, 2006; Fama & Jensen, 1983a; Jensen & Meckling, 1976). However, there persists a considerable debate in the literature that the board structure is effective and can influence the firm's outcome. Prior studies examined a broad array of board structure in relation to the firm's financial performance. For example, board size, composition, diversity, expertise, ownership, duality, interlock etc. (Paniagua et al., 2018; Rashid, 2018; Yasser, Mamun, & Rodriqs, 2017; Zona, Gomez-Mejia, & Withers, 2018). Table 2.8 summarised a few studies with their findings to show the trending relations of board structure with the firm's financial performance:

Table 2.8: Trending relations of board structure with firm's financial performance

Board Structure	Financial Performance	Context	Relationship	Author(s) and Year
Board Size	ROA, ROE	Malaysia	Negative	Zabri, Ahmad, and Wah (2016)
Board Size	ROA, Financial Q	Ireland	Negative	O'Connell and Cramer (2010)
Board Size	ROA	China	Positive	Chen (2015)
Board Size	ROA, Tobin's Q	Sri Lanka	Negative	Guo and Kga (2012)
Board Size	ROA, ROE	India	Positive	Jackling and Johl (2009)
Board Size	ROA, ROE	Australia	Non-significant	Bonn, Yoshikawa, and Phan (2004)
Board Size	ROA	Bangladesh	Positive	Rashid (2018)
Board Size	ROA, ROE	Japan	Negative	Bonn et al. (2004)
Board Size	ROE	International	Negative	Paniagua et al. (2018)
Board Composition	ROA	Bangladesh	Non-significant	Rashid (2018)
Board Independence	ROA	UK	Positive	Müller (2014)
Outside directors	ROA, Financial Q	Ireland	Positive	O'Connell and Cramer (2010)
Outside directors	ROA	China	Positive	Chen (2015)

Table 2.8, continued

Board Structure	Financial Performance	Context	Relationship	Author(s) and Year
Non-executive director	ROA, Tobin's Q	Sri Lanka	Negative	Guo and Kga (2012)
Outside directors	ROA, ROE	Japan	Non-significant	Bonn et al. (2004)
Board	ROA, ROE	Malaysia	Non-significant	Zabri et al. (2016)
Independence				
Outside directors	ROA, ROE	India	Positive	Jackling and Johl (2009)
Outside directors	ROA, ROE	Australia	Positive	Bonn et al. (2004)
CEO duality	ROA, ROE	India	Non-significant	Jackling and Johl (2009)
Female directors	ROA, ROE	Japan	Non-significant	Bonn et al. (2004)
Female directors	ROA, Tobin's Q	USA	Negative	Adams and Ferreira (2009)
Female directors	ROA, ROE	Australia	Positive	Bonn et al. (2004)
Foreign directors	ROA	UK	Positive	Müller (2014)
Multiple directorships	ROA, ROE	India	Negative	Jackling and Johl (2009)
Board Age	ROA, ROE	Japan	Negative	Bonn et al. (2004)
Board Age	ROA, ROE	Australia	Non-significant	Bonn et al. (2004)
Director shareholding	ROA, Tobin's Q	Sri Lanka	Negative	Guo and Kga (2012)

Source: Author Compilation

Table 2.8 shows that prior studies have established mixed evidence. For example, studies which examines the relationship between board size and financial performance extracted both positive (Chen, 2015; Jackling & Johl, 2009; Rashid, 2018) ; negative (Guo & Kga, 2012; O'Connell & Cramer, 2010; Zabri et al., 2016) , and insignificant (Bonn et al., 2004) results. In a similar manner. a mixed outcome is reported for board independence (Guo & Kga, 2012; Müller, 2014), board diversity (Adams & Ferreira, 2009; Bonn et al., 2004), board age (Bonn et al., 2004), and board shareholding (Guo & Kga, 2012). It is also important to note that, according to Table 2.8, prior studies conceptualise board structure

by board size, board independence, leadership structure, multiple directorship, diversity, tenure, and shareholding whereas financial performance is conceptualised mostly by ROA and ROE. Accordingly, results are inconclusive irrespective of measurement of the constructs and context of the study.

2.10.1.2 Ownership structure

Like the board structure, prior studies also confirmed the relevance of ownership structure of a firm to its financial performance (Berle & Means, 1932; Demsetz, 1983; Hermalin & Weisbach, 1988; Holderness, Kroszner, & Sheehan, 1999). The connection between ownership structure and firm's financial outcome has got attention from researchers of multiple fields like corporate finance, corporate governance, and organisational performance. The first evidence on the impact of ownership structure on corporate financial performance can be traced to Berle and Means (1932). Berle and Means (1932) concluded that diffused ownership negatively influences the firm's performance. Later, Demsetz (1983) challenged the view of the negative relationship and argued that managerial ownership rather positively affects the firm's value. Several authors contributed to this debate, as summarised in the table below, to enrich the understanding of the possible impact of managerial ownership on financial performance and the firm's values. Table 2.9 records some features on scholarly works that examine the relationship between the firm's ownership structure and financial performance.

Table 2.9: Summary of literature on the possible impact of managerial ownership on financial performance

Author(s) and Year	Ownership Structure	Financial Performance	Relationship	Sample examined
Morck, Shleifer, and Vishny (1988)	Managerial shareholding	Tobin's Q	Positive	371 Fortune 500 firms in 1980
McConnell and Servaes (1990)	Block holder ownership	Tobin's Q	Positive	1000 Compustat firms for 1976 & 1986
Hermalin and Weisbach (1988)	Shares held by the present and former CEOs on current board	Tobin's Q	Non-monotonic 0&-1&: Positive 1%-5%: Negative 5%-20%: Positive 20% +: Negative	5 years panel data
Loderer and Martin (1997)	Insider ownership (log of sales)	Tobin's Q	Negative	Time series data
Cho (1998)	Management shareholding	Tobin's Q	Q affects ownership but not vice-versa	Cross-sectional data
Himmelberg, Hubbard, and Palia (1999)	Shareholding of managers and directors	Tobin's Q	Negative	Time series data
Holderness et al. (1999)	Managerial shareholding	Tobin's Q	Positive	Time series data

Table 2.9, continued

Author(s) and Year	Ownership Structure	Financial Performance	Relationship	Sample examined
Demsetz and Villalonga (2001)	Multi-dimensional ownership	Tobin's Q	Non-significant	Corporate Data Exchange (CDE) and Fortune 500 directories uses pooled OLS regression analysis on panel data for the period 1996 through 1999 for a sample of 93 firms listed on the Nigerian Stock Exchange
Sanda, Mikailu, and Garba (2005)	Total number of shares owned by directors of a given firm as a percentage of the outstanding shares of the firm	ROA, ROE, Tobin's Q	Positive	Firms listed in the Nigeria stock exchange from 2004-2013
Andow and David (2016)	percentage of managers as equity shareholders	Earnings Per Share (EPS)	Negatively and strongly significant	27,852 listed firms in 123 countries
Kunst and Beugelsdijk (2018)	Agents with ownership	Tobin's Q	Positive only in Anglo-Saxon contexts	

Source: Author Compilation

Table 2.9 shows that the findings are mixed and inconclusive considering the conclusions by studies across countries and years. More recent studies also further strengthen the argument of inconclusive evidence of ownership structure and financial performance relationship. To illustrate, Kunst and Beugelsdijk (2018) found there is a positive effect of ownership on the firm's performance with an international sample of 123 countries. Also, they found there is a positive effect for Anglo-Saxon countries which is insignificant for other countries. The positive effect is further evidenced by Sanda et al. (2005) for Nigerian firms. On the contrary, Andow and David (2016) got negative and Demsetz and Villalonga (2001) found an insignificant relationship between the managerial ownership level and the firm's financial performance.

2.10.2 Corporate Governance and Risk Taking

Different aspects of corporate governance affect the risk-taking the attitude of a firm differently. For purpose of discussion, the following paragraph maintains the two abovementioned areas of corporate governance (board structure and ownership structure) and their relationship with corporate risk-taking

Although board structure and corporate performance have received the most attention in governance research, nevertheless, board influence on corporate risk-taking is not totally ignored. Many studies highlighted the issue and found the relevance of board structure with risk-taking (Akbar, Kharabsheh, Poletti-Hughes, & Shah, 2017; Hao, Cui, Liu, & Gui, 2017). According to Akbar et al. (2017) the board size, board independence, and CEO duality attributes have been extensively researched among many other board characteristics. Empirical evidence found that these board attributes are predominantly negatively associated with corporate risk-taking. For example, Huang and Wang (2015) found that the larger the board is the less they are persuaded to risk-taking. Similarly, Byrd

et al 2001 find that ratio of outside directors is negatively associated with risk-taking. Eling and Marek (2014), considering the European insurance industry, concluded that independent directors shrink the risk-taking for the industry. Similar results were recorded by Xiao-ying (2009) and Hao et al. (2017) for Chinese financial firms. In terms of duality, CEO Simpson and Gleason (1999) asserted that duality reduces the corporate crisis when considering a sample of banks. In a similar vein, for American Banks, analysing the sample of 212 firms from 1997 to 2004, Pathan (2009) found evidence that duality can reduce corporate risk-taking.

Prior studies were primarily focused on the impact of ownership structure on corporate risk-taking. Although the concentration of ownership can significantly shrink the excessive and uncontrolled risk-taking, empirical findings concentrate on ownership instead of granting a mandate for discretion in risk-taking. Fundamentally, corporate governance principle has evolved to solve the prevalent problem with trust between owners and managers after the separation of ownership and management have been apprehended. When the ownership is dispersed, small and medium-sized shareholders tend to lack willingness and authority in supervising management, which leads to "Insider Control" (Hao et al., 2017). This has become a major threat to shareholders' interest. Therefore, concentrated ownership started playing a vital role in reducing agency cost between owners and managers. However, ownership concentration raises a conflict between large-sized shareholders and minority stakeholders. Companies dominated by large-sized shareholders can take greater risk for higher returns while small and medium-sized shareholders and other interested parties may not be interested. Laeven and Levine (2009) considered 270 banks of 48 countries and found that risk-taking is very different from the larger shareholders dominant companies in relation as compared to those with small and medium shareholding. Using different samples for Chinese banking companies Xiao-ying (2009)

revealed evidence that a proportion of the shareholding is positively associated with firm risk-taking. Boyer and Tennyson (2015) analysed the impact of ownership concentration in the insurance sector and also found a similar result. They established that a larger number of block-holders (defused ownership) is responsible for lower risk-taking. Eling and Marek (2014) also discovered evidence with the same negative association for both UK and German firms.

2.11 Missing Link between Corporate Governance and Corporate Sustainability Performance

The relationship between corporate governance and corporate sustainability performance is an interesting area of research but prior studies failed to address this except in a few limited works. Although, most prior studies have examined corporate governance and corporate sustainability performance separately, this study has only considered them jointly in a particular study setting. In other words, the extant literature lacks empirical research on the link between corporate governance and corporate sustainability performance, especially when the corporate governance impact on corporate sustainability performance has not been thoroughly examined compared to corporate financial performance (Lu, 2013). It can be granted that sustainable performance is a logical consequence of good governance practice within the firm. This is because companies with strong corporate governance usually consider the trust of stakeholders, customers, and society to be of importance in ensuring mutual sustained development (Frost & Wilmshurst, 2000). Researchers, for example, Frost and Wilmshurst (2000) documented that there is a significant positive association between corporate governance and corporate social responsibility. In a similar fashion, corporate governance may influence corporate sustainability performance. More recent studies also support this argument (Crifo et al., 2018; Heald, 2018; Nadeem, Zaman, & Saleem, 2017). To illustrate, Crifo et al. (2018)

found that corporate governance can play a key role in sustainability performance if the board's relations with investors is properly managed. Again Heald (2018) found there is a strong correlation between good corporate governance with carbon performance. Furthermore, with the Australian sample, Nadeem et al. (2017) find evidence of corporate governance influence on corporate sustainability practice. Based on this argument, it is convincible that any component of corporate governance will also impact sustainability performance. Since board composition is an important component of corporate governance and, furthermore, the board plays an important role in creating a company's overall sustainability strategy through advice and counsel to managers (Hillman, Withers, & Collins, 2009) and monitoring the behaviour of top management (Jo & Harjoto, 2011), the stakeholders' demand for corporate sustainability performance is assumed to be better addressed by the board of directors. Therefore this study has objected to addressing this important research gap by looking into the board of directors' role on corporate sustainability performance.

Two perspectives that clarify the link between board characteristics and strong social and environmental success can be identified as a resource based view (RBV) and a resource dependence theory (RDT) (Shaukat et al., 2016). RBV theorist argues that companies with superior human capital and successful organizational strategies will establish competitive advantages in CSR, thereby allowing those companies to achieve superior environmental and social performance (Al-Tuwaijri, Christensen, & Hughes, 2004; Clarkson et al., 2011). Accordingly, many RDT advocates (Boyd, 1995; Hillman, Cannella, & Paetzold, 2000; Hillman & Dalziel, 2003; Pfeffer, 1973; Pfeffer & Salancik, 1978) investigate the relationship between different board attributes and corporate social performance (Jo & Harjoto, 2012; Johnson, Daily, & Ellstrand, 1996; Post, Rahman, & Rubow, 2011). These studies argue that some directors work on a board to provide efficient managerial oversight,

as well as to play an effective role in resource dependence by supplying essential resources through interconnections with its external environment (Boyd, 1995; Hillman et al., 2000; Hillman & Dalziel, 2003; Pfeffer, 1973; Pfeffer & Salancik, 1978).

Empirical analysis indicates that a more proactive and systemic CSR approach is being implemented by organizations with more CSR-oriented boards (i.e. those with more independent directors, female directors, and financially savvy directors). In turn, these businesses achieve higher environmental and social efficiency (Shaukat et al., 2016). From the RDT perspective, the board is seen as a tool for managing the external environmental dependencies and uncertainties of a company, such as those raised by the social and natural environmental challenges (Boyd, 1995; Hillman et al., 2000; Hillman & Dalziel, 2003; Pfeffer, 1973; Pfeffer & Salancik, 1978). Hillman and Dalziel (2003) outline the board's primary resource dependence responsibilities, namely to improve the credibility and public image of the organization, to provide expertise; to provide advice and counsel; liaise the company with major stakeholders or other key entities; promote access to resources; develop external relationships. Such board contributions are therefore of direct relevance to the social and environmental success of an organization. Mallin and Michelon (2011), for example, draw on RDT and suggest that, as providers of human and relational resources, outside directors and female directors can improve the social performance and prestige of a business by building valuable relationships with stakeholders of the company. These directors are also argued to give top management insightful advice on the aspirations of stakeholders. Webb (2004), who explores the disparities in board composition between socially responsible and matched non-responsible firms. Webb (2004) also found that socially responsible companies tend to have larger boards, more independent directors and more females on board. Previous studies thus tend to find a positive association between different attributes of the board and CSP.

Another challenge in sustainability studies is that extant literature mostly failed to address a holistic approach to sustainability performance in a single study. Although the board structure of directors has important implications for diverse facets of firm performance, prior studies primarily focus only on the economic performance (Berardi, Rea, & Bellante, 2016; Mahadeo, Soobaroyen, & Hanuman, 2012; Unda, 2015; Wellalage & Locke, 2013; Zahra & Pearce, 1989). Researches on the association between board attributes and sustainability performance are limited (Harjoto et al., 2015; Post et al., 2015; Zhang, Zhu, et al., 2013). Moreover, most of the studies concentrated on the individual parameter of sustainability and only a few have focused on the combined assessment (Hahn & Scheermesser, 2006; Labuschagne et al., 2005; Wagner, 2010). Although, corporate sustainability performance includes multiple dimensions such as environmental, social, and governance etc. nevertheless, most of the prior studies only consider one or two dimensions while conceptualising sustainability performance for the study. For example, few studies conceptualise corporate sustainability performance as environmental performance (Post et al., 2015), while some others as social performance (Zhang, Zhu, et al., 2013) and the rest examined a combination of two or more dimensions of sustainability performance (Hahn & Scheermesser, 2006; Labuschagne et al., 2005; Wagner, 2010). After reviewing academic studies between 1992 to 2011, Goyal et al. (2013) reported a very pressing need for research in sustainability to move from the individual measurement of social or environmental performance to the combined measurement of sustainability i.e., holistic sustainability performance.

2.12 Internal Control Mechanisms

Under the traditional legal model of the corporation, the board of directors has been held responsible for the management of the business operation. However, it is unrealistic to think

that the board will manage the day to day operations. Therefore, it is customary that the board appoints managers to do the job on their part and the board of directors oversee the function to ensure there is control over the firm. Hence, internal control mechanisms have traditionally been used as a tool for discharging, overseeing and monitoring the function of the board of directors (Eisenberg, 1997).

The concept of internal control is required to analyse and interpret concisely because the concept of 'control' is equally used in both scientific studies and in the organisation's daily operation. The first objective definition of internal control can be traced to the American Institute of Certified Accountants (AICPA) which defined internal control as 'a plan and other coordinated means and ways by the enterprise to keep safe its assets, check the correctness and reliability of data, to increase its effectiveness and to ensure the settled management politics'. However, the concept has developed over time. Nowadays, internal control is considered as a comprehensive and extensive set of concepts that enables the firm to safeguard its assets to reach its strategic and management goal. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) is the pioneer in defining and providing the framework for internal control. COSO defines internal control as having five components, namely Control Environment, Risk Assessment, Information and Communication, Control Activities, and Monitoring. In addition, the definitions provided by scholars must enrich the conceptualisation of internal control. Therefore, Table 2.10 depicts a few scholarly definitions of internal control.

Table 2.10: Definitions of Internal Control

Internal Control Definition(s)	Author(s) and Year
Internal control is a broadly set process needed to establish wise guarantees that these goals will be accomplished: <ul style="list-style-type: none">• Effectiveness and economic performance• Reliability of financial accounting, and• Obeying laws and rules	Simmons (1995)
Internal control is a control system made by enterprise authority to arrange the enterprise performance properly according to the established strategy and to ensure safety and rational use of property, particularity and accuracy in accounting data.	Lakis and Giriūnas (2012)
Internal control is a system of avoiding, identifying and correcting mistakes that might appear during information processing.	Pfister and Hartmann (2011)
Internal control is a process through which the enterprise reaches its goals, results, also plans authority performance, arrangement, monitoring in the whole enterprise or separate subdivisions.	King (2011)
Internal control is part of the enterprise management systems to protect property, to check rightness of the performance, guarantee the effectiveness of policies and performance.	Shim (2011)

Source: Author Compilation

Table 2.10 shows that most researchers mentioned the point that internal control is purposely used to safeguard the firm's resources and help it to reach its desired goal. For example, (Shim, 2011) clearly noted that internal control protects property and guarantee its performance. In like fashion, (Simmons, 1995) defined internal control as the process to guarantee three-goal accomplishments, namely the effectiveness of performance, accounting reliability, and compliance of rules. In short, internal control is a set of mechanisms that help the organisation to achieve its goal or objectives. Furthermore, it can be argued that the implementation of control mechanisms and their effective use will determine a firm's success in the short and long-run.

Prior studies were concentrated on different aspects of internal control such as the determinants of effective use of control mechanisms at the firm's level, consequences of effective control and its impact on firm performance. However, the mediating role of internal control is rarely addressed in the extant literature. The uphold study has objected

to examine the mediating effect of internal control mechanisms on the relationship between the board of directors and corporate sustainability performance. This sort of mediating position can be argued from the ground of internal control conceptualisation. It has already been explained that internal control mechanisms are designed to bring the interests of managers and shareholders into congruence. At the same time, required by law, the board of directors in a publicly held company is charged with the responsibility of developing and implementing these mechanisms (Eisenberg, 1997; Walsh & Seward, 1990). In other words, the board of directors are responsible for the functionality of the internal control mechanisms, which are managed by the company management and implemented throughout the organisation (COSO, 2013). Therefore, the board of directors can influence the internal control system which can, in turn, enhance shareholders wealth. With this in mind, this study argues that internal control mechanisms will mediate the board characteristics and sustainability performance relationship. This argument can be further supported by scholars' attention on this point of the institutional role of internal control. To illustrate, the meta-analysis by Byron and Post (2016) warranted for future studies to examine "how firms' institutional contexts enhance or mitigate the relationship" between the board of directors and corporate social performance. It can be said that within the firm's institutional contexts internal control structure most directly influences its operation towards attaining its goal (Eisenberg, 1997). For the study purpose, the focus will be given to two elements of internal control mechanisms, namely enterprise risk management (ERM) and management control system (MCS). ERM and MCS are selected assuming that part of any good internal control system should incorporate risk management and management control systems. This statement can be supported by the conclusion made by (Soin & Collier, 2013). In particular, Soin and Collier (2013, p. 82) specified that the trend to view the board's responsibilities is twofold: 'identifying, assessing, treating and

monitoring risks' and 'evaluating the effectiveness of management controls'. In other words, ensuring risk management and management control systems functionality are the major concern of the present board of directors. Therefore, consistent with this trend assuming the board's responsibility, this study conceptualises internal control mechanisms as ERM and MCS.

2.13 Enterprise Risk Management

2.13.1 Enterprise Risk Management: Conceptualization

The concept of risk management has developed as a dominant aspect of corporate governance and has increasingly been allied to the notion of internal control (Spira & Page, 2003). In recent years, however, a paradigm shift has occurred regarding the way to view risk management. Instead of looking at risk management from a silo-based perspective, the trend is to take a holistic view of risk management (Gordon, Loeb, & Tseng, 2009). This holistic approach towards managing an organisation's risk is commonly referred to as enterprise risk management (ERM). The aim of this holistic framework is the identification, assessment and monitoring of all threats and opportunities facing a firm (Meulbroeck, 2002; Pagach & Warr, 2011). As such, ERM promotes increased risk-management awareness supporting a firm-wide risk-management approach, translating into mature operational and strategic management decisions (Nocco & Stulz, 2006).

There are various guidelines for the implementation of a holistic and enterprise-wide risk management. One of the most common frameworks was introduced by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 2004, which defined ERM as (COSO, 2004, p. 2) "...a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within

its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.” Thus, ERM considers all the enterprise-wide risks within one integrated, consolidated framework to achieve a comprehensive corporate forward-looking risk-reward perspective, thereby explicitly taking into account interdependencies and opportunities, which are in contrast to the silo and downside risk perspective of traditional risk management (Hoque, 2004; Mohd Khalid, Lord, & Dixon, 2012; Nocco & Stulz, 2006). ERM frameworks further typically include the appointment of a senior executive such as a chief risk officer (CRO) or a committee of risk management experts (Liebenberg & Hoyt, 2003), and should be directed top-down by the senior management due to its high relevance for achieving a firm’s corporate strategic goals (COSO, 2004). In addition, the establishment of a strong risk culture across all enterprise levels is essential to ensure appropriate coordination and functionality of the ERM system (Gatzert & Martin, 2015).

2.13.2 Key Issues in Prior Studies on Enterprise Risk Management (ERM)

The empirical literature on ERM can generally be classified along three main lines of research such as ERM implementation, value relevance of ERM, and determinants of ERM. The following sections will elaborate on the abovementioned issues.

The first line is concerned with conceptualisation of ERM and examining the stage of the ERM implementation in a context using surveys, questionnaires or interviews (Daud, Yazid, & Hussin, 2010; Deutsch, 2005; Garcia-Torea et al., 2016; Jensen & Meckling, 1976; Kaku, 1997; Rachagan, Pascoe, & Joshi, 2002; Sharma & Henriques, 2005; Yazid, Hussin, & Daud, 2011). As discussed in previous sections, ERM is a holistic conceptualisation in contrast to traditional silo-based risk management. This holistic perspective on a firm’s risk portfolio is intended to create value for companies by optimising their risk-return trade-off and, thus generating long-term competitive

advantages as compared to firms which identify, manage and monitor risks individually (Nocco & Stulz, 2006). Granted that ERM earns benefits for firm risk management and performance, many scholars endeavoured to examine the existence of ERM and its stage of implementation in various study context. For example, Daud, Haron, and Ibrahim (2011) examined the stage of ERM implementation for the Malaysian context using a questionnaire survey. In a similar fashion, (Yazid et al., 2011) reported that empirical evidence for the level of ERM was specifically focused on government-linked companies of Malaysia. Likewise, (Kleffner, Lee, & McGannon, 2003) acquired data from a mail survey as well as telephone interviews to know ERM implementation for the Canadian firms which are listed in the Toronto Stock Exchange. On the other hand, Togok, Isa, and Zainuddin (2016) used a dual approach of content analysis followed by an online survey. In the first phase, content analysis was performed on the annual reports of 754 Malaysian public listed companies by using the common terms used in ERM. In the second phase, an online survey was conducted among 330 ERM adopters was identified from the content analysis approach. In summary, two dominant approaches are adopted by scholars to examine the level of ERM used in a firm. Firstly, relying on secondary available data i.e., published annual reports, websites etc. some scholars use content analysis to find adopters and non-adopters of ERM. Secondly, in searching for further information, some other scholars adopted survey approaches which allow them to know the ERM implementation in different stages namely early stage, partial, or full adoption etc.

A second strand of the literature focuses on the relevance of ERM activities on a firm's performance (Baxter & Vermeulen, 2013; Beasley, Pagach, & Warr, 2008; Hoyt & Liebenberg, 2008, 2011; McShane, Nair, & Rustambekov, 2011; Nations, 2015; Tahir & Razali, 2011). In particular, firms with an ERM system are assumed to be better in making proper economic decisions, thus tending to invest in more valuable net present value

projects (Myers & Read Jr, 2001). They can also avoid duplication of risk management expenditures by exploiting natural hedges (Hoyt & Liebenberg, 2011) whereas the silo risk management causes inefficiencies due to the lack of coordination between the various risk management departments (Hoyt & Liebenberg, 2011). Furthermore, a firm's total risk can be reduced, financial distress is less likely (Gordon et al., 2009; Meulbroek, 2002), and risk management may reduce or eliminate "costly lower-tail outcomes" (Stulz, 1996, 2003), which may also result in lower expected costs of regulatory scrutiny and external capital (Meulbroek, 2002). In general, efficient risk communication can reduce information asymmetries within the enterprise (for decision making) as well as with investors and stakeholders (for an evaluation regarding the firm's financial strength and risk profile) (Liebenberg & Hoyt, 2003), who can contribute to an increasing confidence in the firm by rating agencies, regulators, and, ultimately, by customers.

Moreover, the benefits of ERM are also supported by various empirical studies to a different extent. For instance, Hoyt and Liebenberg (2011) found there is a highly significant relation between ERM and the firm's value, with ERM increasing the shareholders' value for U.S. insurance companies by approximately 17% to 20%, respectively. McShane et al. (2011) adopted the five categories of the Standard & Poor's (S&P) ERM insurance rating to assess the impact of risk management activities on the firm's value for a dataset of 82 worldwide insurance companies. The results show there is a positive relationship between the increasing level of risk management and the firm's value while a change from traditional risk management to ERM does not lead to an increase in shareholder value. Based on a sample of 120 U.S. companies, Beasley et al. (2008) further established that the market reaction to a CRO announcement is firm-specific, being significant in the case of non-financial firms while a general reaction is not observed. The

cross-sectional study by Nations (2015) shows a statistically significant relation, suggesting that an increasingly matured level of ERM is associated with enhanced firm's value.

Furthermore, analysing data from Malaysian companies, Tahir and Razali (2011) observed a positive but not significant impact of ERM on shareholder's value. By analysing 165 financial service enterprises, Baxter and Vermeulen (2013) additionally found evidence that ERM quality is positively associated with operating performance and earning response coefficients. Further articles show a significant positive (at least to some extent) impact of ERM on the firm's performance or market reactions (Baxter & Vermeulen, 2013; Gordon et al., 2009; Pagach & Warr, 2010), thereby mainly focusing on the U.S. market and using various financial performance measures. Overall, despite some mixed evidence, the empirical results thus generally confirm the theoretical arguments that a holistic ERM system can add value to a firm.

The third strand of literature is focused on the determinants of ERM (Beasley, Clune, & Hermanson, 2005; Golshan, Zaleha, & Rasid, 2012; Hoyt & Liebenberg, 2008, 2011; Liebenberg & Hoyt, 2003; Nations, 2015; Pagach & Warr, 2011; Razali, Yazid, & Tahir, 2011). Given that ERM can create value, the question arises, which makes implementation more likely for firms. In this regard, most articles observed there is a (significant) positive relation between ERM and firm size (Beasley et al., 2005; Hoyt & Liebenberg, 2008, 2011; Nations, 2015; Pagach & Warr, 2011) except for Liebenberg and Hoyt (2003). Furthermore, a significant negative relation of ERM and financial leverage is observed in Hoyt and Liebenberg (2011), which is contrary to the findings of Golshan et al. (2012) and Liebenberg and Hoyt (2003). Hoyt and Liebenberg (2011) further observed a significant positive relation of ERM adoption with institutional ownership, which is similar to Pagach and Warr (2011), who additionally identified the cash flow volatility as a significant

determinant. Beasley et al. (2005) found significant effects in the presence of a Big Four auditor as well as the independence of the board of directors on ERM adoption. Moreover, focusing on Malaysian data, Razali et al. (2011) and Golshan et al. (2012) showed that international diversification, a firm's capital structure, and the sales volume are significant drivers for ERM systems.

2.14 Management Control Systems (MCS)

2.14.1 MCS Conceptualization

Organizations are social constructs that come to life through individuals and the interaction with the environment. The diverse personality and wills, as well as employees' lack of direction, unmotivated behaviour, and personal limitation, result in divergent aspirations between the overall organization and its employees (Merchant, 1985). In order to align employees' behaviour toward the overall organizational objectives, companies apply different types of control mechanisms. Typically, these mechanisms intended to monitoring management function are termed as management control systems or MCS. However, the academic roots of MCS can be traced back to the work of Anthony (1965). He defined management control as "the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives" (p. 17). Over time, this view has been extended to accommodate a more comprehensive understanding of MCS. However, many recent MCS conceptualizations are still based on the seminal work of (Anthony, 1965). For example, this command and control understanding is quite similar to MCS definitions provided by Merchant and Van der Stede (2011) and Anthony, Govindarajan, Hartmann, Kraus, and Nilsson (2014). According to Merchant and Van der Stede (2011), MCS is based on the objects of control which encompass results, actions, and personnel or culture. Merchant

and Van der Stede (2011) view MCS as the third and final step of a management process where objectives need to be elaborated at the beginning and in next step strategies are to set to define the ways firm resources will be used to attain such objectives. This is because employees need an understanding of what the organisation is trying to reach and how to make this happen before any MCS can be designed to address their behaviour towards goal achievement. Therefore, management control “includes all the devices or systems managers use to ensure that behaviours and decisions of their employees are consistent with the organization’s objectives and strategies” (Merchant & Van der Stede, 2011, p. 4). Consequently, this MCS understanding includes all formal and informal controls which directs to the congruence of goal and strategies of both organisation and employees. In a similar vein, Anthony et al. (2014) conceptualize MCS as feedback and/or feedforward control which is a characteristic of any cybernetic approach. It is noteworthy that this MCS definition “.... Focus primarily on the systematic (i.e., formal) aspects of the control function” (Anthony et al., 2014, p. 6). However, this understanding excludes all informal control mechanisms as a part of MCS and considers MCS as merely a tool for implementing the strategy.

In contrast, Simons (1995b) recognizes MCS can be used in different forms such as direct monitoring, social and cultural control etc. instead of simple command and control perspective. This understanding is much wider in comparison to Merchant and Van der Stede (2011) and Anthony et al. (2014) because Simons (1995b) integrates a feedback mechanism between goals and actions and business strategy as bottom-up perspective. This approach allows strategies to emerge out of the pattern of action and also can re-influence strategy. Therefore, this approach can be called ‘innovation and control’ perspective which is heavily influenced by the hierarchical structural process of formulating and implementing the strategy (Simons, 1995b, p. 4). However, strategy formulation is beyond

the scope of MCS and MCS do not form an explicit part of this process. In other words, MCS serves as ‘levers’ for implementing strategies and achieving business goals. Accordingly, MCS is defined as “... the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities for capturing new opportunities and innovations” (Simons, 1995b, p. 5). Notably, this understanding of MCS is distinctive in several ways. Strauß and Zecher (2013) reported three important attributes of Simons (1995b) MCS conceptualization. Firstly, the focus is on formal procedures which is consistent with Anthony et al. (2014). However, Simons (1995b) extended it to another focus of informational aspects, i.e., how information is generated, communicated, and used by organization’s top managers. Secondly, Simons (1995b) ‘maintaining or altering of patterns’ does not only refer to goal-oriented activities but also to the search for new opportunities and innovations that can stimulate emergent strategies. Finally, Simons does not limit his concentration in lower level managers rather includes top managers’ use of MCS. Strauß and Zecher (2013) also compare Simons MCS conceptualization with other conceptualizations as depicted in Figure 2.5.

Informal controls, explicitly integrated	Author(s): Merchant and Van der Stede MCS conceptualization: <i>Action controls, results controls, personnel/cultural controls</i>	Author(s): Simons MCS conceptualization: <i>Belief systems, interactive control systems, boundary systems, diagnostic control systems</i>
	Author(s): Anthony and Govindarajan MCS conceptualization: <i>Strategic planning, budgeting, responsibility centre report, actual versus plan etc.</i>	
Informal controls, not explicitly integrated	Command and control	Innovation and control

Figure 2.5: Comparison of MCS conceptualizations
(Source: Strauß and Zecher (2013))

Overall, it can be summarized that Anthony et al. (2014) have a narrower understanding of MCS than Merchant and Van der Stede (2011) but both follow the “command and control” MCS perspective. Simons (1995b), however, has a narrower MCS understanding than Merchant and Van der Stede (2011) but a wider than Anthony et al. (2014) because of the integration of cultural controls. Additionally, Simons (1995b) endeavours to leave the path chosen by the other authors and follows an “innovation and control” understanding of MCS, which results in the ability of MCS to influence strategy.

2.14.2 MCS Frameworks

A framework is a conceptual structure for categorizing and systematizing complex information. Frameworks serve the purpose of studying all individual parts or aspects that make up a single MCS. In order to complement the previous section that provided an overview of MCS conceptualization, this section reviews a few frameworks of MCS. In particular, the frameworks by Simons (1995b), Otley (1999), Ferreira and Otley (2009) as well as the extension by Broadbent and Laughlin (2009), and Malmi and Brown (2008) are presented. Moreover, commonalities and differences between these approaches are outlined in the final part of this section.

2.14.2.1 The levers of control framework by Simons

Simons MCS framework is better known as ‘lever of control (LoC)’ approach of MCS where business strategy represents the core of the analysis. Four key constructs constitute the next level of analysis which are the key indicators for successful strategy implementation: Core values, risk to be avoided, critical performance variables, and strategic uncertainties. The third and final level of LoC framework consists of four control

systems: beliefs, boundary, diagnostic, and interactive. This LoC framework is depicted in Figure 2.6.

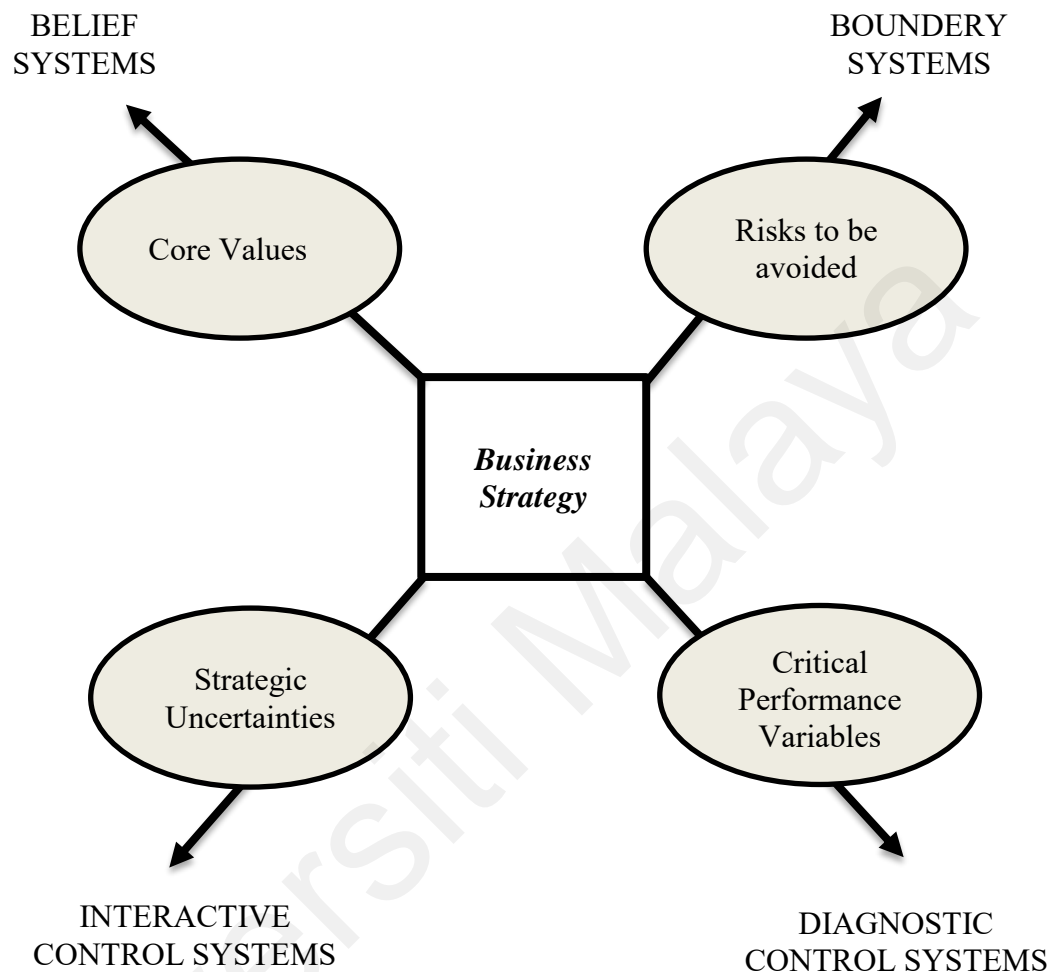


Figure 2.6: The levers of control framework by Simons

Underlying Simons framework is the idea of opposing forces that manage tensions “between freedom and constraint, between empowerment and accountability, between top-down direction and bottom-up creativity, between experimentation and efficiency” (Simons, 1995b, p. 4). These tensions are managed by what Simons calls positive and negative control systems. Of the four levers, two are defined as positive (belief systems and interactive control systems) and two are defined as negative (boundary systems and

diagnostic control systems). Thus, the need to balance opposing forces and to integrate different kinds of controls is an essential element of Simons (1995b) philosophy.

The first types of MCS that Simons (1995b) present is so-called beliefs systems which “are the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization” (Simon, 2000, p. 76). Beliefs systems are used to inspire and direct the search for new opportunities. Managers use beliefs systems to indicate to subordinates in what direction they want the organization to go. A beliefs system is communicated through credos, mission statements, and statements of purpose. However, in dynamic environments, there must be some restraint placed on employees to stop them from engaging in high-risk behaviours. This restraint is the boundary system, which acts in opposition to the beliefs system. A boundary system “delineates the acceptable domain of strategic activity for organizational participants” (Simons, 1995b, p. 39). The boundary system communicates the actions that employees should avoid. Boundary systems are communicated through rules, codes of conduct, limitations, and minimum standards. Its purpose is to allow employees’ freedom to innovate and achieve within certain pre-determined areas. The boundary and beliefs systems are similar in that they both are intended to motivate employees to search for new opportunities; however, the boundary system does so in a negative way through the constraint of behaviour while the beliefs system does so in a positive way through inspiration (Simons, 1995b).

A firm’s critical success factors are embedded in its diagnostic system and communicated to its employees. Diagnostic control systems are defined as “the formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance” (Simon, 2000, p. 209). Examples of

diagnostic control systems include budgets and project monitoring systems such as profit plans, targets, and quotas etc. Diagnostic control systems are used to motivate, monitor, and reward achievement of specified goals. Diagnostic control systems are essentially feedback systems, which are fundamental to traditional management control. Diagnostic control systems have three distinguishing features: (1) the outputs of a process can be measured, (2) the existence of predetermined standards against which actual results can be compared, and (3) any deviations from these standards can be corrected. While the diagnostic system allows managers to manage results on an exception basis, the interactive system is forward-looking and characterized by active and frequent dialogue among top managers. The interactive system is intended to help the firm search for new ways to strategically position itself in a dynamic marketplace. Top managers choose which control system (e.g., PM, brand management, budget process) they want to use in an interactive manner. It is important to note that management decides which systems should be used interactively and which should be used diagnostically. “Interactive control systems stimulate search and learning, allowing new strategies to emerge as employees throughout the organization respond to perceived opportunities and threats”. “Diagnostic control systems are the formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance”. Interactive control systems provide frameworks, or agendas, for debate, and motivate information gathering outside of routine channels.

A distinctive characteristic of Simons (1995b) types of MCS is that he assumed and highlighted the interconnectedness of these four types of MCS. A firm has to establish and balance all four types of MCS to successfully control the organization:

“The power of these levers in implementing strategy does not lie in how each is used alone, but rather in how they complement each other when used together. The interplay of positive and negative forces creates a dynamic tension between opportunistic innovation and predictable goal achievement that is necessary to stimulate and control profitable growth.” (Simon, 2000, p. 301)

In other words, Simon (2000) suggests that the four levers create tension in that two of the levers – the beliefs and interactive control system – create positive energy, while the remaining two levers create negative energy. Many scholars empirically tests this proposition and posit that managers use performance measures in both a diagnostic and interactive role and that doing so results in a desirable state of dynamic tension that will enhance organizational capabilities (Henri, 2006; Kober et al., 2007). For example, Henri (2006) finds some evidence that together the two levers of control i.e. diagnostic and interactive control result in dynamic tension that is positively associated with performance.

2.14.2.2 The performance management framework by Otley

Otley (1999) motivation to develop a new framework for MCS research lies in the emphasis of management accounting on financial performance and on the use of economic theories, such as agency theory. According to Otley, these approaches give a too narrow view of internal processes and offer little guidance for designing MCS. Consequently, he intends to “look beyond the measurement of performance to the management of performance” (Otley, 1999, p. 364) by considering the whole MCS of an organization. Performance is thereby understood as the achievement of organizational objectives as defined by key stakeholders.

The framework is presented in the form of five questions that are supposed to cover all relevant facets of management control:

1. What are the key objectives that are central to the organization's future success, and how does it go about evaluating its achievement for each of these objectives?
2. What strategies and plans have the organization adopted and what are the processes and activities that it has decided will be required for it to successfully implement these? How does it assess and measure the performance of these activities?
3. What level of performance does the organization need to achieve in each of the areas defined in the above two questions, and how does it go about setting appropriate performance targets for them?
4. What rewards will managers (and other employees) gain by achieving these performance targets (or, conversely, what penalties will they suffer by failing to achieve them)?
5. What are the information flows (feedback and feed-forward loops) that are necessary to enable the organization to learn from its experience, and to adapt its current behaviour in the light of that experience? (Otley, 1999, pp. 365-366). According to Otley (1999), these questions relate to previous experiences in conducting field research. Moreover, Otley emphasizes that organizations operate in contexts that are continually changing. In order to account for these changing environments, organizations repeatedly have to find new answers to all five questions.

2.14.2.3 The performance management systems framework by Ferreira and Otley

The performance management systems (PMS) framework has been proposed by Ferreira and Otley (2009). It integrates Simons' (1995) and Otley's (1999) framework and With Otley (1999) as a starting point, Simons' (1995) four key concepts are integrated to a question mode. In total, twelve questions form the PMS framework. Figure 5 contains a schematic overview of the twelve questions. Figure 2.7 contains a schematic overview of the twelve questions.

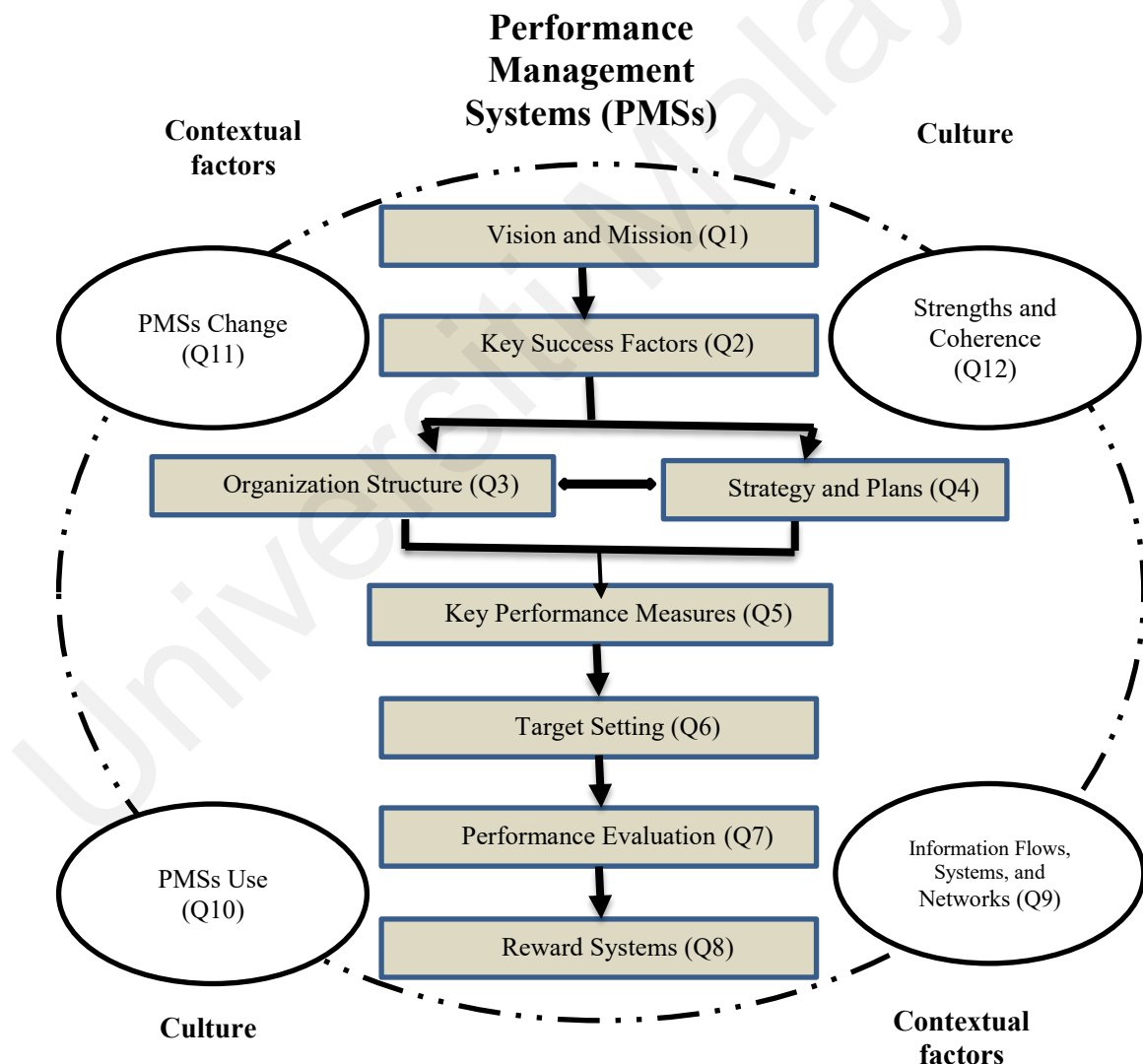


Figure 2.7: Performance Management Systems Framework by Ferreira and Otley

2.14.2.4 The performance management system by Broadbent and Laughlin

Together with the work by Ferreira and Otley (2009), an extension of the PMS framework by Broadbent and Laughlin (2009) has been published. Their conceptual model of a PMS elaborates on the last four questions of the PMS framework with an emphasis on questions 9 and 10. In particular, they address the aspects of context and different forms of rationality, i.e. specifically those aspects that were explicitly excluded by Ferreira and Otley.

2.14.2.5 The MCS package by Malmi and Brown

A conceptual typology of an MCS package is proposed by Malmi and Brown (2008) as one of the most recent frameworks in accounting and control literature. With the aim to facilitate and encourage research on MCS, a typology based on a synthesis of about forty years of literature is developed. Consistent with Otley (1999), Malmi and Brown (2008) prefer the term ‘package’ to ‘systems’, as the concept of a package indicates that individual systems are designed and implemented by different actors at different points in time. Central to the package approach is the idea that MCS direct employee behaviour. Figure 2.8 provides an overview of the elements of the MCS package.

Cultural Control						
Clans		Values			Symbols	
						Reward and Compensation
Long range planning	Action planning	Budgets	Financial Measurement Systems	Non-Financial Measurement Systems	Hybrid Measurement Systems	
Administrative Control						
Governance Structure		Organisation Structure			Policies and Procedures	

Figure 2.8: MCS package by Malmi and Brown

This framework consists of five types of controls, i.e., planning, cybernetic, reward and compensation, administrative controls, and cultural controls. Whereas administrative controls at the bottom represent the basis of the control system, cultural controls are at the top as they are the broadest set of controls. The controls in the middle of the figure are depicted in temporal order. According to them: “The strength of the typology lies in the broad scope of the controls in the MCS as a package, rather than the depth of its discussion of individual systems” (2008, p.291).

2.14.2.6 Comparison among the MCS frameworks

In comparison to the frameworks discussed above, Strauß and Zecher (2013) illustrated notable MCS frameworks, accordingly, that has been presented in Figure 2.9

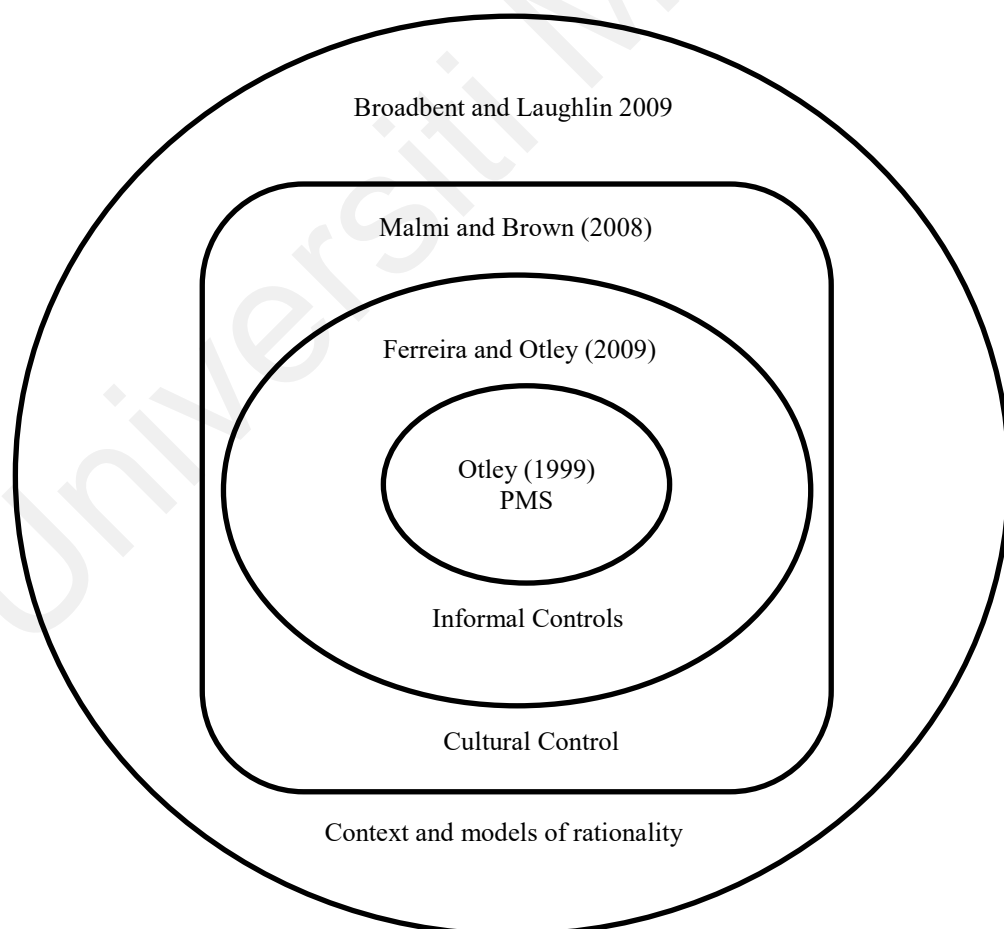


Figure 2.9: Comparison of MCS frameworks by Strauß and Zecher (2013)

Strauß and Zecher (2013) find that, although not appearing in the illustration, Simons' LoC framework is the origin for all the later frameworks developed based on at least one prime new issues. For example, Otley (1999) has introduced PMS (performance management systems) concept while Ferreira and Otley (2009) advocated for informal controls and similarly Malmi and Brown (2008) for cultural controls. However, Strauß and Zecher (2013) viewed Broadbent and Laughlin (2009) model as an extension of organizational context and models of rationale in comparison to other frameworks.

However, the study argues that Simons LoC framework should be treated as a foundation for any MCS analysis for it includes most basic control types. Apart from that no framework is without limitations in the holistic and comprehensive conceptualization of any particular MCS applied in a particular organizational setting. However, Simons framework received a great consideration from past studies and proved to be one of the most reliable understandings of MCS for academic studies. For example, Siska (2015) concludes that Malmi and Brown (2008)'s MCS as a package appears to have limited potential, which is probably caused by the additive nature of its origin. That might be why the authors of contemporary contextual frameworks of MCS like Tessier and Otley (2012) go back to Simons' notion of LoC. Tessier and Otley (2012) suggest considering belief system as a form of social controls and not as a standalone control systems. The remaining three levers of control formulated by Simons have been reorganized as well but stayed parts of the basic four control systems.

2.14.3 MCS and Sustainability

Given that corporate sustainability is a goal, MCS can be instrumental in transforming practices into sustainability as Simons mentioned MCS can be used to “maintain or alter patterns in organizational activities” (p. 5). MCS can play a significant role in ensuring that

environmental and social activities are incorporated into an organization's strategic plans and objectives (Adams & McNicholas, 2007; Gond, Grubnic, Herzig, & Moon, 2012). MCS provide information to managers for use in decision-making, irrespective to whether the company's objective in implementing a sustainability strategy is an attempt to conserve resources competitive advantage, greenwashing, industry pressure, compliance, reputation management, or legitimacy (Schaltegger & Burritt, 2010). Moreover, MCS enable managers to make decisions about relevant risks and potential opportunities (Bartolomeo et al., 2000; Schaltegger & Burritt, 2010). MCS also support managers by providing information on the use and cost of resources that enable them to identify and involve relevant stakeholders in organizational decision making (Bartolomeo et al., 2000; O'Dwyer, 2005).

Based on the above stated and other arguments that conclude that MCS can influence sustainability, scholars attempted to examine how MCS can lead to corporate sustainability. For example, Arjaliès and Mundy (2013) employ Simons levers of control framework to explore how organizations leverage MCS in different ways in order to drive strategic renewal and trigger organizational change while simultaneously supporting society's broader sustainability agenda. With French listed company sample, Arjaliès and Mundy (2013) provide evidence suggesting the use of MCS has the potential to contribute to society's broader sustainability agenda through processes that enable innovation, communication, reporting, and the identification of threats and opportunities. In similar ground, Eldridge, van Iwaarden, van der Wiele, and Williams (2013) conducted a case study in a European high technology start-up company using Simons LoC framework and illustrate that MCS can yield new useful insights for managers when dealing with uncertainty. More recently, with a larger sample of European firms, Crutzen, Zvezdov, and Schaltegger (2017) find similar evidence that MCS is required for a firm to become more

sustainable. However, Crutzen et al. (2017) used Malmi and Brown (2008) framework for conceptualizing MCS.

2.15 Common Theories Related to Corporate Governance and Sustainability

Both the fields of corporate sustainability and corporate governance lack any accepted theoretical base or commonly accepted paradigm as yet (Carver, 2000; Larcker, Richardson, & Tuna, 2007; Lozano, Carpenter, & Huisinigh, 2015). Corporate governance research lacks coherence of any form, either empirically, methodologically or theoretically, meaning that only piecemeal attempts have been made to understand and explain how the complex modern organisation is managed. As a result, a number of different theoretical frameworks, originating from a broad range of disciplines including economics, finance, management and sociology, have been used by researchers in explaining and analysing corporate governance. Using various terminologies, these frameworks view corporate governance from different perspectives. (Larcker et al., 2007) argued that the fragmentation of these various perspectives has led to a lack of consensus regarding corporate governance and the actual role of the board of directors in the organisation as the nature of board's contribution (and the expectations placed upon it) depends heavily on which theoretical perspective is used.

To understand how the board of directors can influence corporate sustainability performance, the study identified seven predominant theories that are most relevant in corporate governance research, namely agency theory, stewardship theory, resource dependence theory, legitimacy theory, stakeholders theory, institutional theory, and the common good theory. Prior literature advocates that particular theory explains a specific case while any single theory is unable to explain the general role of corporate governance (Nicholson & Kiel, 2007).

2.15.1 Agency Theory

Since the publication of the paper by (Jensen & Meckling, 1976), agency theory is being treated as the dominant theory in corporate governance research. The central focus of the theory is the principals (owners) – agents (managers) relationship in the context of separation of ownership and management in a corporate setting. In this theory, managers are assumed to be risk averse and self-interested while dealing with the maximisation of personal interest instead of shareholders wealth maximisation. A conflict of interest between them is the leading issue here and usually many actions are being proposed to congruent the goal and interest.

In the case of sustainability performance, corporations are supposed to operate not only to maximise profit but also to become socially and environmentally responsible (Jennifer Ho & Taylor, 2007; Taylor, 2007). The triple-bottom-line sustainability approach views the organisation more than a mere economic entity (Jennifer Ho & Taylor, 2007).

Research in corporate social responsibility (CSR) perused the theory in examining corporate activity. (Friedman, 1970) argued CSR as the symptom of agency problem or sign of shareholder-manager conflict of interest. He argued that managers view spending on CSR as just spending others' money to pursue their own social, political, economic and career goals and this does not improve company performance. This view of the negative impact on performance represents the “traditionalist view” where it is argued that expenditure on the reduction of air emission, pollution incurring additional costs and thus lowering performance. In several studies, this theory is tested to signify the aforementioned view by researchers like (Clarkson, Li, Richardson, & Vasvari, 2008), (Park, Park, & Lee, 2018).

2.15.2 Stewardship Theory

Unlike the agency theory, the prime postulate of stewardship theory is viewing managers as the steward of a company's asset instead of an agent of a principal (shareholders). Moreover, stewardship theory often assumes to have similar goals of both managers and shareholders. In some case, managers may act to maximise shareholders interest as a proxy to serve their own interest. As an example, (Fama, 1980) argued that managers find their personal reputation and professional reputation by maximising operational performance tied together and lose reputational penalty in case of failing the company by both managers and board of directors. According to (Davis, Schoorman, & Donaldson, 1997), unlike agency theory which is an economic approach of governance, stewardship theory is rather a sociological and psychological approach of governance. In the economic approach, subordinates are assumed as individualistic, opportunistic, and self-serving whereas socio-psychological approach (stewardship) views subordinates as collectivists, pro-organisational, and trustworthy.

2.15.3 Resource Dependence Theory

On theories exploring corporate governance mechanism, resource dependence theory focuses mainly on the role of the board of directors which is the specific focus of this study. Pfeffer and Salancik first proposed this theory in 1978 and after that eventually, it became one of the most influential theories for studying corporate governance and board of directors. (Hillman et al., 2009) claimed resource dependence theory is the most evident source of understanding the role of the board in a company although it is a less commonly used theory in comparison to agency theory. After a comprehensive review of resource dependency theory, he concluded it to be a more successful lens for understanding boards. Under the resource dependency theory, corporations are viewed as dependent on

contingencies in the external environment as a part of an open system (Pfeffer & Salancik, 1978). To minimise the dependence on the external environment, (Pfeffer & Salancik, 1978) recommended five actions. Employment of a board of directors is one of them.

However, resource dependence theory differs significantly from agency theory mainly from the managers' interest alignment part. Resource dependency theory argues that the board of directors is one of the most valuable resources of successful business operation which ultimately have an impact on the firm's performance and they can play a role in monitoring simultaneously. However, according to agency theory, the role of the board of directors is only to minimise the agency costs by monitoring top management activities (Hillman et al., 2000).

2.15.4 Resource Based View

Resource based view (RBV) was first tagged by Wernerfelt (1984) and developed during the 1980s and 1990s through decades of work by Wernerfelt (1984), Barney (1991), Prahalad and Hamel (2006), and many others. RBV is a combination of connected theories that share common assumption of resource heterogeneity and resource immobility across firms. This view describes how businesses attain competitive advantage through possession and organisation of assets, capabilities, knowledge, and related other internal resources. The proponents of this view argue that firms must find the sources of competitive advantage instead of looking at competitive environment. According to them, it is much more feasible to exploit external opportunities using existing resources in a new way rather than trying to acquire new skills for each different opportunity. Hence, resources are given the major role in serving companies to achieve higher organizational performance.

The two critical assumptions of RBV heterogeneity and immobility of resources. Although it is essential for a competitive advantage to have heterogeneous and immobile capital, it is not adequate for the company on its own to survive. Barney (1991) has identified four attributes of firm resources, namely, valuable, rare, costly to imitate and non-substitutable. Rothaermel (2016) extended the assumptions from VRIN to VRIO addressing “organisation” issues to these four attributes. Therefore RBV assumes that a firm can secure competitive advantages if and only if the firm resources are valuable, rare, costly to imitate, non-substitutable, and organized.

RBV was, however, blamed for a variety of problems. The use of resources is questioned on several points. The broad definitions of resources have been criticized as overly inclusive (Priem & Butler, 2001). Further, if every firm’s resources are unique (i.e., knowledge, reputation, or complex internal processes), then generalizations from large-sample statistical analysis are impossible (Gibbert, 2006). Finally, managers may have limited ability to control the sources of heterogeneity, given imperfect property rights and uncertainty (McGuinness & Morgan, 2000).

Several extensions are clarified to overcome these limitations. The development of the "knowledge-based view" (KBV) came, as with the RBV in general, through contributions by several authors. Because the firm's knowledge is partly implicit and typically socially dynamic, knowledge is the perfect tool that meets the VRIO criteria (Kogut & Zander, 1992). Secondly, dynamic capability literature identifies capacity building or altering resources, particularly in the context of rapid environmental change. (Grant, 1996). The RBV's third major extension shows that companies can jointly create, manage and deploy capital and expertise in cooperative relations. This "relational view" focuses on internal

operations which encourages more than one organization to share those activities (Das & Teng, 2000).

2.15.5 Legitimacy Theory

The originator of legitimacy theory is Davis who was the first to propose this theory in 1973. This theory is another influential approach to study the role of corporate governance on corporate sustainability (Deegan, 2002). Under legitimacy, perspective society is viewed as a grantor of legitimacy and power to business. In the long run, businesses which fail to utilise power in a legitimate way will lose it (Davis, 1973) and eventually organisations cannot survive without constantly ignoring the boundaries of social norms (Deegan, 2002). So, according to legitimacy theory, corporations must be legally and socially responsible to sustain in the long run. Studies on corporate sustainability and corporate governance heavily used this aforementioned theory for testing their interactions (Deegan, Rankin, & Tobin, 2002; Guthrie & Parker, 1989; Laufer, 2003; Seguí-Mas et al., 2018).

2.15.6 Stakeholder Theory

Stakeholder theory, first proposed by (Freeman, 1984), provides a discussion of the links between external stakeholders and company functions. Stakeholder theory predicts that managers conduct sustainability to fulfil their moral, ethical, and social duties for their stakeholders and strategically achieve corporate goals for their shareholders. (Freeman, 1984) defined stakeholders as “any group or individual who can affect or is affected by the achievement of the organisation’s objectives”. The main stakeholders are customers, employees, local communities, suppliers and distributors, the public, regulators, government, policymakers, and shareholders (Freeman et al., 2010).

Extending the traditional stakeholder theory, (Jensen, 2002) proposed the enlightened stakeholder theory (also called enlightened value maximisation). Enlightened stakeholder theory suggests that managers should make decisions that take into account the interests of all the stakeholders in a firm and the objective of all activities is to maximise stakeholders' value (Jensen, 2017). Stakeholders include all individuals or groups who can substantially affect, or be affected by, the welfare of the firm. The main stakeholders include not only shareholders and creditors, but also employees, customers, communities, and regulators. Stakeholder theory is now popular and has received the formal endorsement of many professional organisations, special interest groups, and governmental bodies. While corporate managers serve stakeholders, there must be a trade-off to reduce the conflicts between stakeholders and important constituencies (Hillman et al., 2009).

The major difference between the traditional stakeholder theory and enlightened stakeholder theory is that the latter accepts the long-term value maximisation as a firm's objective while the firm focuses its attention on meeting the demands of all important corporate constituencies (Jensen, 2017). Sustainability and governance researchers have been using the stakeholder theory from diverse conceptualisation of the theory mainly due to the fact that Freeman's (1984) original theory contains no conceptual specification of how to make the trade-offs between stakeholders that must be made (Jensen, 2017).

2.15.7 Institutional Theory

Institutional theory is a theory on the deeper and more resilient aspects of social structure. It considers the processes by which structures, including schemes, rules, norms, and routines, become established as authoritative guidelines for social behaviour. Different components of institutional theory explain how these elements are created, diffused, adopted, and adapted over space and time; and how they fall into decline and disuse.

Institutional theory is a widely accepted theoretical posture that has attracted a large number of researchers in the field of corporate governance and sustainability studies. Researchers who are building on this perspective emphasised that corporate behaviour is continually affected by their peer group which ultimately merged with the standard policy that emphasises on the formal and legal governance structure to attain or at least give cues on appropriate behaviour (Kraft & Furlong, 2012).

The institutional theory provides an explanation about why organisations tend to take on similar characteristics and form. ‘Organisations conform because they are rewarded for doing so through increased legitimacy, resources and survival capabilities’ (Scott, 2005, p. 498). The organisational form is inclined towards some form of homogeneity and it is assumed that ‘deviants’ will have problems gaining or maintaining legitimacy. Deegan (2013) explained two dimensions of institutional theory- isomorphism and decoupling. Isomorphism tends to form similar corporate structures and processes which is legitimate and is demanded by the stakeholders. The other dimension, described as decoupling, argues that although managers might see a need to adopt particular structures and practices, actual organisational practices can be very different from publicly pronounced processes and practices. (DiMaggio and Powell (1983)) explained three isomorphic processes, namely coercive, mimetic, and normative which would bring change more specifically to organisational structure or culture. Powell and DiMaggio (2012) defined an emerging perspective in organisation theory and sociology, which they have termed as the 'new institutionalism', as rejecting the rational-actor models of Classical economics. Instead, it seeks cognitive and cultural explanations of social and organisational phenomena by considering the properties of supra-individual units of analysis that cannot be reduced to aggregations or direct consequences of the individuals’ attributes or motives.

2.15.8 The Common Good Theory

The common good theory is a classical approach for business ethics to do good for society as the referential value for sustainability which can be found in Aristotelian literature, Medieval Scholastics, and developed philosophy (Kempshall, 1999; Maritain, 1994; Smith, 1999). This theory states that business should contribute to the common good for its livings because it is also a part of society, like other social groups or individuals. It is often claimed that companies are mediating social institution which is neither good nor harmful for the social wellbeing (Fort, 1999). However, business can still do common good in a number of ways, for example, by creating wealth, providing efficient service to fulfil the demand of social objects, ensuring dignity and fundamental rights of the groups and individuals, establishing harmony, peaceful condition of living in the present and in the future (Melé, 2002).

Although apparently, it seems that this theory of common good is quite similar to the stakeholder approach (Freeman, 1984) and sustainable development (Brundtland, 1987), however, their philosophical base is different. Of course, ‘common good’ can be understood in several ways (Sulmasy, 2001) but triple bottom line approach of doing business is much convincing which ensures social good and natural good in harmony. In another view, the common good notion has a lot in common with the Japanese concept of “Kyosei” that stands for “living and working together for the common good” (Goodpaster, 1996; Kaku, 1997; Yamaji, 1997). “Kyosei” concept also maintains that doing good should go together with the principle of human dignity. Notably, this is one of the key founding principles of “The Caux Roundtable Principles for Business” which later also influenced sustainability.

2.16 Underlying Theories of the Study

This study is set to examine both the direct and indirect relationship between the board of directors' influence on corporate sustainability performance. Hence, two theories have been used to underpin these relationships, namely, resource dependence theory and contingency theory. Resource dependence perspective has already been discussed earlier thus in the next section, address the rationale for selecting this theory instead of other relevant theories. In addition, the other sections will explain the contingency theory in detail.

2.16.1 Selection of Resource Dependence Theory

It is important to note that, every single theory has got its own limitations to explain all the general roles of the different elements of corporate governance on sustainability performance. Rather, one theory explains one specific context of the study for a particular case. In this uphold study context, some selected board characteristics have been examined with sustainability performance such as board size, board composition, board leadership, board ownership, board diversity, and board expertise. Resource dependence perspective best explains all the board's characteristics that have an influence on corporate sustainability while other theories are specific to one or two characteristics of the board of directors. For example, agency theory explains board composition and board ownership effect on the firm's performance. However, RDT differs significantly from agency theory mainly from the managers' interest alignment part (Hillman et al., 2009). Agency theory stresses the monitoring role of the board of directors and explains how the board as a monitoring device can minimise agency cost and increase the firm's efficiency. Notwithstanding the monitoring role of the board of directors, RTD views them as resources which later can greatly influence the firm's outcome. The other theories like

legitimacy, stakeholder, and institutional theories argue that the firm performance will match with the expectations of outsiders like regulatory bodies, stakeholders, and different social and institutional pressure. Although some previous studies examined the board's role on expected performance under these theories, they have conceptualised the board of directors' as part of outsiders. This happens because the board act as a bridge between the outsider and insider of any firm. Unlike these studies, the current studies conceptualise the board of directors as the apex body of corporate governance who works closely and hand in hand with company executives to achieve the company goals. Therefore, like any other resources firms who own and exploit for generating its intended outcome, this study assumes the board of directors are the greatest resources of any firm who can be used to achieve sustainability performance.

2.16.2 Contingency Theory

The term contingency means that something is true only under specified conditions. According to contingency theory, organisational performance or design is a consequence of its operating environment and their interaction (Chapman, 1997; Otley, 1980). Contingency approach integrates the decision-based theory and system theory to define an open system with "if-then" relationship between two or more defined business units (Lawrence & Lorsch, 1967). Although universally applicable systems are lacking, the contingency argues for an open system that adapts to a specific context in order to result to a designed output (Schreyögg & Steinmann, 1987; Scott & Tiessen, 1999).

Contingency-based research has been widely used in the study area of organisation performance, behaviour, planning and strategy, and design. However, contingency theory also received criticism from scholars which is overly equivocal and lacking in explicit and careful development of the underlying assumptions (Fry & Slocum Jr, 1984; Schoonhoven,

1981). Despite such criticisms, many scholars have defined the boundaries and premises of contingency theory. For example Dubin (1978) noted that contingent proposition is not simply unconditional associations among variables in the model rather it is a complex proposition which hypothesises conditional association between two or more independent variables and a dependent outcome that is subject to an empirical test. Van de Ven and Drazin (1984) simplified the central proposition of the contingency approach as an organisational structure or organisational process that must fit its context (culture, size, environment or technology etc.). They also noted that organisational performance is contingent to the best fit of organisation structure, process, and context.

Therefore, the key concept in a contingent proposition is 'fit'. According to Drazin and Van de Ven (1985) the term 'fit' can be conceptualised in three different ways namely, selection, interaction, and system. Under the selection approach, fit is assumed as premises which underpin a congruence between context and structure. From an interaction view, the fit is viewed as the interaction of pairs of context-structure factors that affect the performance. A systems view of fit stands for consistency of contingencies that affect performance characteristics. Besides the view of Drazin and Van de Ven (1985), more precise definition of fit is demanded considering its usefulness while testing whether an organisation has achieved fit or not for a particular organisational structure or process (Drazin & Van de Ven, 1985; Galbraith & Nathanson, 1979; Van de Ven & Drazin, 1984). Venkatraman (1989) advanced the fit concept further by specifying six alternative views for testing fit in an organisational setting. They are as below:

1. Fit as Moderation
2. Fit as Mediation
3. Fit as Matching

4. Fit as Gestalt
5. Fit as Deviation
6. Fit as Covariation

Of the above six fit approaches, two subdivisions are possible considering the number of variables is being simultaneously investigated namely reductionist and holistic. The reductionist group considers fit as matching, fit as moderation, and fit as mediation while the holistic group contains fit as gestalt, fit as variation, and fit as covariation (Venkatraman & Prescott, 1990).

Considering the study context, two important fit models i.e. Fit as Moderation and Fit as Mediation is further discussed to clarify their interaction. Fit as moderation is in line with the fit as interaction explained by Drazin and Van de Ven (1985). This interaction can be outlined as an independent variable's effect on a dependent variable contingent to the third factor labelled as a moderating variable (figured as below in Figure 2.10)

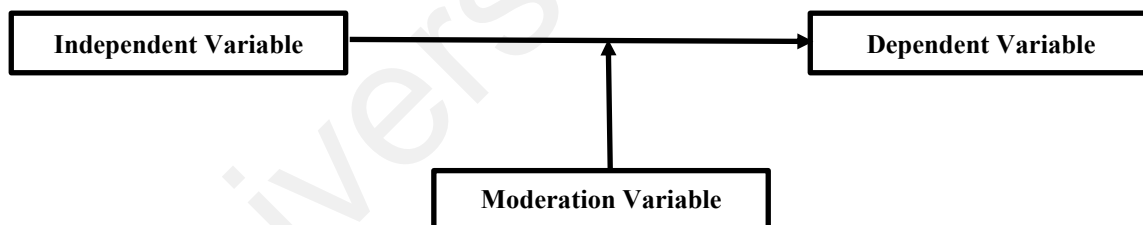


Figure 2.10: Fit as moderation

Fit as a mediation assumes that independent variable determines the third variable labelled as mediating variable which in turn determines the dependent variable (as shown below in Figure 2.11)

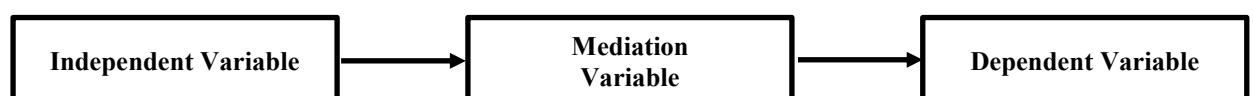


Figure 2.11: Fit as mediation

The literature of that explores the interaction of corporate governance variables and sustainability performance with control mechanisms often underpinned by contingency theory but more specifically underpinned by fit as moderation and mediation notion (Asiaei, 2014; Chenhall, 2003; Govindarajan & Fisher, 1990; Hoque, 2004; Latan, Jabbour, de Sousa Jabbour, Wamba, & Shahbaz, 2018; Otley, 2016; Siska, 2015)

2.17 Chapter Summary

This chapter was constructed on the foundation laid in Chapter one of this thesis. In particular, this chapter presents the idea of corporate sustainability and corporate governance in detail including evolution, conceptualisation, dimensions, models, and key issues in prior studies. The link between these two variables and the research gap are also presented with support from past studies. The connections of other study variables i.e. enterprise risk management and management control systems are drawn to the aforesaid link of CG-CSP. The theoretical underpinning will be discussed later. In a nutshell, this chapter offers a bigger picture and holistic understanding of corporate sustainability performance. Corporate governance is perceived as key resources and drivers of sustainability performance with regard to the interactive effect of internal control mechanisms namely enterprise risk management and management control systems. This chapter summarises and analyses the relevant literature to highlight the comprehensive conceptualisation and connections for all the foregoing variables. The review helped to position the current study and laid the foundation for proposing the study framework and develop the hypothesis accordingly.

CHAPTER 3: THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1 Chapter Preview

This chapter is designed to achieve two objectives namely proposing a research framework (Figure 3.1) and developing hypotheses (Figure 3.2). This chapter commences with highlighting the gaps of the research drawing from the literature review in the previous chapter. In this chapter, after specifying the research gap, based on support from underpinning theories research framework is presented followed by literate justifications for the developed hypothesis.

3.2 Literature Gap

As discussed in the previous chapter the conceptualization of corporate sustainability is ever challenging at least at firm level. Although several efforts are made to measure firm-level sustainability performance, they are limited and incomplete. Partial conceptualization of sustainability performance by past scholars (i.e. CSP referring to either environmental or social performance) often let CSP used interchangeably with CSR. While CSR and CSP are quite different considering historical and theoretical base, this erroneous definition promotes confusion. Question raises on how a firm can sustain by only performing environmentally and socially otherwise it secure economic sustainable performance because it is unrealistic to find corporate sustainability without financial sustainability is established (Aras & Crowther, 2008). Therefore the study attempts to fill an important research gap of holistic conceptualization of CSP. The study reviews dimensions of sustainability performance in the extant literature and formulated a second order formative measures for firm-level corporate sustainability performance. This conceptualization is in

line with the argument presented by scholars attempted to find most common indices for sustainability performance (Dočekalová & Kocmanová, 2016; Lee & Saen, 2012; Rahdari & Rostamy, 2015).

In addition to that, the study is attempted to explore corporate governance role on sustainability performance. Although both of the fields has got much attention individually and separately the link between these two fields of study is scant. However, the board of directors' role on financial performance has been rigorously examined. Hence examination of the board of directors' influence on corporate sustainability will contribute to the enriched academic discussion and also shed some light on board responsibility towards sustainability.

Another research gap identified after reviewing the literature presented in the previous chapter is mediating role of ERM and MCS use in the relationship between BDC-CSP. Although the board of directors are often held responsible for firm sustainability, the board can do little for business operation other than ensuring a viable control system in place, setting sustainability strategy and setting the tone at the top. The literature review confirms that one a handful amount of studies conducted in examining the mediating role of ERM and MCS use in BDC-CSP relationship. Therefore the study focus to shed some light in it.

3.3 Theoretical Framework

Figure 3.1 shows the proposed theoretical framework. This figure portrays that Board of directors' characteristics are linked to internal control mechanisms and internal control mechanisms are linked to corporate sustainability performance. Board of directors' characteristics are subdivided into six constructs namely board size, board composition, board leadership, board ownership, board diversity, and board expertise. Most corporate

governance guidelines include these characteristics and scholars also paid attention to them in different other contexts. In addition to that, these characteristics have got common essence of influence as ‘resource’ which is relevant to the underpinning theory (RTD) of the study. Consistent with the trend of viewing board responsibility towards internal control mechanisms, the study subdivided internal control mechanisms into enterprise risk management (ERM) and management control systems (MCS). Moreover, based on discussion in previous chapters, corporate sustainability performance are conceptualized with its four dimensions namely corporate financial sustainability, corporate environmental sustainability, corporate social sustainability, and corporate governance sustainability performance. According to the framework presented in Figure 3.1, the board of directors’ characteristics (six constructs) are exogenous constructs and internal control mechanisms (two constructs) are mediating constructs while corporate sustainability performance is placed as an endogenous construct or dependent construct.

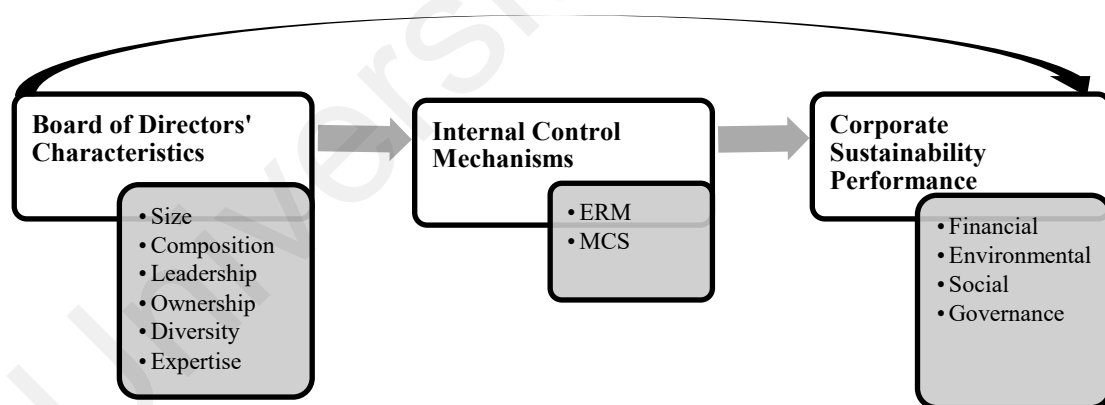


Figure 3.1: Theoretical framework of the study

The proposed framework is intended to examine the influence of board of directors’ specific characteristics on attaining the goal of holistic sustainability performance objectives of a company in two ways such as direct relationship and indirect through

mediating constructs. It is argued that apart from direct influence, the board will influence sustainability performance by establishing more sound internal control environment with the help of ERM and MCS. Therefore for two major paths (direct and indirect) this study is guided by two theories, namely Resource Dependence Theory (RDT) and fit as mediation notion of contingency theory.

Studies examining the relationship between board of directors and firm performance are often underpinned by one of two distinct theoretical perspectives, namely, agency theory and resource dependence theory (RDT). Agency theory contend that monitoring management on behalf of shareholders is the key responsibility of board that can improve firm performance by reducing agency cost. On the other hand, RDT contend that the key responsibility of a board is to provide resources (e.g., legitimacy, advice and counsel, links to other organizations, etc.) that can improve firm performance by reducing the transaction cost associated with environmental uncertainties and managing external dependencies for key resources. Although RDT is less commonly used perspective to understand board role on performance compared to agency theory, the study argue that RDT is more appropriated to use in the context of board characteristics link with corporate sustainability performance.

The resource dependence role of board is theoretically distinct from agency role although board may perform both roles simultaneously (Johnson et al., 1996). Under the RDT, corporations are viewed as dependent on contingencies in the external environment as a part of an open system. Pfeffer (1973) claims that boards enable firms to minimize uncertainties and dependence to external resources. In resource dependence role, directors serve to connect the firm with external factors and help coping with uncertainty. Effective coping with uncertainty leads to power (Pfeffer & Salancik, 1978), increased survival likelihood (Hill & Birkinshaw, 2008) and, ultimately, increased sustainability performance

(Yilmaz & Flouris, 2010). However in resource dependence role, directors go beyond reducing uncertainty. Boards bring resources to the firm, e.g. information, access to key constituents, skills, and legitimacy (Pfeffer & Salancik, 1978) which reduces environmental dependency (Daily & Dalton, 2003). Moreover, as a result of reduced uncertainties and established links with external environmental factors, RDT assumes reduction in transaction costs associated with external resources. In addition to that, empirical evidence suggests that RDT is supported more often than agency theory (Johnson et al., 1996; Johnson, Hoskisson, & Hitt, 1993; Zahra & Pearce, 1989). Hillman et al. (2009), therefore, conclude that RDT is more successful lens for understanding boards influence on firm performance.

Hence this study selected six board of directors characteristics based on resource perspective and it assumes that these characteristics would influence corporate sustainability performance in line with other resources of the firm.

In addition to the above theoretical arguments for the direct relationship between the board of directors' characteristics (BDC) and corporate sustainability performance (CSP), an indirect association can also be formulated based on the contingency approach. Prior literature that examines BDC-CSP relationship find inconclusive evidence of the relationship opens the avenue for the contingency approach of looking at it. Contingency theory argues that the influence of any business design on its performance is specific to its organizational context. The fit between organizational processes is a must for any such relationship to be established. Many studies find evidence to support the argument that the design and the use of internal control mechanisms depend on the contextual variables, such as, leadership style (Abernethy, Bouwens, & Van Lent, 2010; Nguyen et al., 2017), managerial discretion (Sakka, Barki, & Côté, 2013), business strategy (Kober et al., 2007;

Son, 2015) etc. In most cases these above mentioned factors are directly or indirectly connected to board of directors. Therefore, board of director may be termed as a critical force that can determine the effective use of internal control mechanisms. Based on this and other arguments made in earlier chapters the study identifies ERM use and MCS use as two mediating constructs in the relationship between BDC and CSP. That means the board of directors influence the use of ERM and MCS in the business process and thereafter use of ERM and MCS influence sustainability performance.

3.4 Hypothesis Development

Figure 3.2 shows the hypothesized relationships among the constructs:

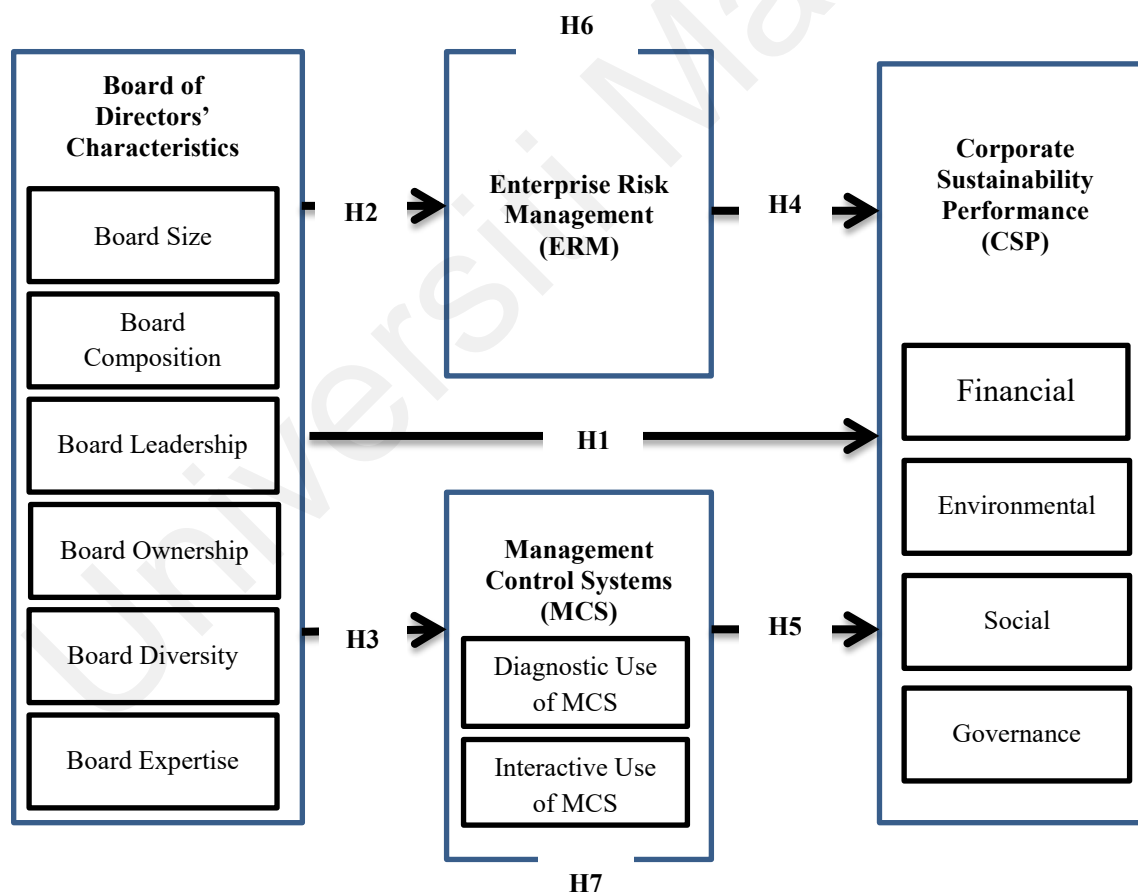


Figure 3.2: Developed hypotheses according to the theoretical framework

According to Figure 3.2, H1, H2, H3, H4, and H5 depict the direct relationships between Board of Directors' Characteristics (BDC), Enterprise Risk Management (ERM),

Management Control Systems (MCS) and Corporate Sustainability Performance (CSP), respectively. Furthermore, H6 and H7 stand for the indirect relationship between Board of Directors' Characteristics (BDC) and Corporate Sustainability Performance (CSP) mediated through the use of ERM and MCS respectively.

It is noteworthy that, H1 contains sub-hypothesis for the association between each board of directors' characteristics association and corporate sustainability performance. For instance, H1a stands for the association between board size and corporate sustainability performance. Similarly, H1b stands for association between board composition and corporate sustainability performance, H1c stands for association between board leadership and corporate sustainability performance, H1d stands for association between board ownership and corporate sustainability performance, H1e stands for association between board diversity and corporate sustainability performance, and H1f stands for association between board expertise and corporate sustainability performance. In similar fashion, H2 and H3 also contain six sub-hypothesis respectively. The mediating hypotheses (H6 and H7) also contain similar six sub-hypothesis considering six board of directors' characteristics. To sum up, the study includes seven major hypotheses with each containing six sub-hypotheses except for H4 and H5. The summary of all the hypotheses tested in this study is presented in Table 3.1.

3.5 Board of Directors' Characteristics and Corporate Sustainability Performance

The role of the board on firm performance has been widely studied. Fama and Jensen (1983a) viewed the board of directors as a monitoring device for safeguarding shareholder interest through discerning their investments. Gabrielsson and Winlund (2000) viewed the board of directors as an information system for stakeholders to perceive top management action and firm outcome to minimize agency cost. Arosa, Iturralde, and Maseda (2013) find

that apart from monitoring, advising and networking capacity, with the greater knowledge of the firm may also empower board of director subsequently positively affect strategic planning decisions. According to resource dependence theory, boards are considered as strategic resources to control inter-organizational dependencies (Pfeffer, 1973; Pfeffer & Salancik, 1978). On the other hand, resource-based view claims board of directors as firms internal resources and capabilities which is critical for securing sustainable competitive advantage (Teece, Pisano, & Shuen, 1997). According to Pfeffer and Salancik (1978), the board can aid and support the firm by playing advisory role and liaison role i.e., lending an air of legitimacy support from outside the company. Board of directors may play a vital role in firm operation and outcome. Importantly, the board plays an important role by formulating sustainability strategy and monitoring top managers' activities (Jo & Harjoto, 2011).

Board of directors' role is influenced by many factors, e.g. the qualifications and experience of board members, their gender, multiple directorships, independence, share ownership and remuneration scheme (Campbell & Mínguez-Vera, 2008). For this study, only six characteristics of the board were selected. They are size, composition, leadership, ownership, diversity, and expertise. One of the rationales for selecting these particular characteristics of the board of directors' is that they belong to the resource perspective and the study is primarily guided by the resource dependence theory. Another reason is that most national corporate governance guideline refers to these board characteristics as a part of their good board governance policy. In addition to that, these six characteristics also have been highly addressed in extant literature of corporate governance and board structure as discussed in the following sections.

3.5.1 Board Size and Corporate Sustainability Performance

Board size refers to the number of members participating in the board activity (Huang & Wang, 2015). These include any member of the board, chairman, and independent directors who have the same legal responsibilities despite performing different functions (Rachagan et al., 2002). Board size has drawn considerable attention in the corporate governance literature. Selection of sustainability strategy and other long term decision can be influenced by board size. The larger board usually brings more links to the firms; this ultimately helps companies perform sustainably. After conducting a meta-analysis Dalton, Daily, Johnson, and Ellstrand (1999) concluded that board size is positively linked with the firm outcome. In fact, the larger board is ideal in most cases. Coles et al. (2008) argued that a larger board is optimal for companies with complex contracts and external connections. The larger board is the impetus to reduce conflict in board decision (Cheng, 2008). Past literature reviews advocate that firms can seek advantage from owning a larger board in obtaining required counsel in premeditated decision- making circumstances (Hermalin & Weisbach, 1998) what is unified to sustainability performance as sustainability matters are often multifaceted and ambiguous. Board size is positively related to environmental performance (Walls et al., 2012) and corporate philanthropic activities (Brown, Helland, & Smith, 2006). Also in recent study board size showed a positive relationship with sustainability facets. Velte et al. (2016) employed CSR committee, Big Four audit firm and board size to test which result in better sustainability management and found each variable statistically significant and positive. So we can predict a positive relationship between board size and corporate sustainability performance as hypothesized below:

Hypothesis 1a: Board size is positively associated with corporate sustainability performance.

3.5.2 Board Composition and Corporate Sustainability Performance

Board composition refers to whether the members come from inside or outside of the firm. In general it denotes the ratio of the number of non-executive directors to the number of total directors on the board (Tao & Hutchinson, 2013). Non-executive directors are outsiders to the firm and independent of management and catalytic for independence of the board. The more independent a board, the more powerfully it will affect and be able to enforce its will. This is another factor affecting board power is its status of independence from management. An insider dominated board is viewed as weak because a higher proportion of insiders (i.e., less independence) is ineffective in monitoring the CEO who has the power to determine compensation packets and continued employment (Zajac & Westphal, 1994). Outside directors may help to avoid conflict in board decision making and tend to be effective in case of firms' critical decisions (Deutsch, 2005).

Outside directors are not employed by the focal firm (Westphal & Fredrickson, 2001). Therefore, they are more likely to align themselves with stakeholders, rather than with the CEO/Chairperson. Post et al. (2015) identify two reasons for what outside directors will be more responsive to stakeholder pressure of sustainability performance more specifically pursue sustainability-themed strategies. Firstly, outside directors will better serve stakeholders because they are more interested in further nomination by increasing reputation through serving stakeholder interest. Secondly, inside directors may short in knowledge and expertise required to pursue sustainability strategies and outside director can facilitate by their diverse upbringings, skills, and network ties. Using a sample of 50 largest Chinese banks during the period of 2003–2010, Liang, Xu, and Jiraporn (2013) find that board composition (the proportion of independent directors) have significantly positive impacts on both bank performance and asset quality. It is interesting to note that, Garcia-

Torea et al. (2016) get evidence that outside directors are even more open compared to inside directors to both shareholder and rest of the stakeholders of the firm. Garcia-Torea et al. (2016) used sustainability reports transparency as proxy for stakeholders' perspective. This is consistent with our assumptions for outside directors' role on sustainability performance. Therefore, a hypothesis showing a positive relationship between board composition and corporate sustainability performance is formulated as follows:

Hypothesis 1b: Board composition is positively associated with corporate sustainability performance.

3.5.3 Board Leadership and Corporate Sustainability Performance

Board leadership refers to the duality of CEO (when CEO chairs the board). Leadership is all about influencing behaviour and CEO duality increases board leadership. Pathan (2009) noted board leader's power to influence decision making considered to be originated from two sources: duality and internally-hiring. Stewardship theory advocates the duality of the CEO and chairman. Stewardship theory argues that the reallocation of corporate control from owners to professional managers may be a positive development toward managing the complexity of the modern corporation. Several empirical studies find validity of the advocates for CEO duality (Brickley, Coles, & Jarrell, 1997; Dey, Engel, & Liu, 2011; Kim, Al-Shammari, Kim, & Lee, 2009). Brickley et al. (1997), for example, find argument for large U.S. firms that the dual role of CEO and chairman in the same person reduces the information costs and costs of having inconsistent decision making, even including the potential benefits of this separation such as the reduction of agency costs. Similarly findings of Dey et al. (2011) is also consistent with the stewardship arguments. Kim et al. (2009) indicate that CEO duality is positively associated with corporate diversification into unrelated industries. CEO duality also finds support from the

sustainability literature. Jo and Harjoto (2011) find that firms with higher board leadership (CEO duality) are more likely to choose CSR engagement. Analyzing sustainability reports, Garcia-Torea et al. (2016) discover that more effective board measured by the CEO duality and other board characteristics (i.e., board size, independence, women, experience, meeting, and committee) is more active towards executing stakeholders demand. Thus, it is expected that board leadership (CEO duality) will have a positive impact on the corporate sustainability performance, hence, below hypothesis was formed.

Hypothesis 1c: Board leadership is positively related to corporate sustainability performance.

3.5.4 Board Ownership and Corporate Sustainability Performance

Many empirical studies attest that managerial ownership improves firm performance (Chung & Pruitt, 1996; Jensen & Murphy, 1990; Kunst & Beugelsdijk, 2018; McGuinness et al., 2017; Palia & Lichtenberg, 1999; Sanda et al., 2005). Brickley, Lease, and Smith (1988) argue that stock ownership by managers and board members gives them an incentive to ensure that the firm is run efficiently and to monitor managers carefully. But other studies were not so clear about the relationship between managerial ownership and firm performance. In spite of some inconclusive results, there is an overwhelming support for the notion that director ownership results in aligning the interests of both owners and the management and provides a means to monitor risk taking behaviour of managers (Chung & Pruitt, 1996; Fama & Jensen, 1983a; Jensen & Meckling, 1976). This alignment of interests can also ease free-ride problem of monitoring to increase the effectiveness of the board (Shleifer & Vishny, 1997). Consequently, alignment of interests of directors and shareholders through director ownership is expected to improve firm performance. The argument of positive association between level of director ownership and firm performance

can also be supported by empirical evidences. For example, Kunst and Beugelsdijk (2018) find positive effect of ownership on firm performance with an international sample of 123 countries. Positive effect is further evidenced by Sanda et al. (2005) for Nigerian firms. In similar ground, it can be assumed that greater board ownership will also influence corporate sustainably performance. Moreover ownership incentives motivate directors to forgo short term returns for long-term projects and strategies (Hansen & Hill, 1991). If so, then directors with higher share ownership are likely to insist on sustainability. In more recent study of McGuinness et al. (2017) found evidence of positive relationship of ownership and CSR performance in China. Similarly, for UK firms Heald (2018) also found positive association between board ownership and carbon reduction initiatives (CRI) i.e. carbon performance. These evidences lend support for the expectation of positive association of board ownership with corporate sustainability performance.

Hypothesis 1d: Board ownership is positively associated with corporate sustainability performance.

3.5.5 Board Diversity and Corporate Sustainability Performance

Board diversity is another important board characteristics received considerable attention. Diversity in corporate boardrooms of publicly traded corporations around the world has become a pressing issue. Diversity in terms of gender, tenure, and expertise can drive firms to sustainability activities (Harjoto et al., 2015). Studies of McGuinness, Lam, and Vieito (2015) reveal that the gender of senior board officers can influence the key decision of the firms. Levi, Li, and Zhang (2014) used gender-related behavioural traits to investigate whether and how personal or behavioural traits of corporate executives are related to corporate decisions. They noted that it takes a longer time for a board with female directors to deliberate on an acquisition deal, resulting in fewer deals and better deal quality

(a lower bid premium) while bidder male CEOs' and directors' overconfidence result in too many acquisitions or in paying too much. However they also noted that female directors are less likely to have attendance problems at board meetings, and are more likely to serve on monitoring-related committees than are male directors. Byron and Post (2016) conducted meta-analysis of 87 independent samples representing a range of over 20 countries to show how female members in the board can influence firm's social and environmental performance. Their findings confirm that firms with more women board directors engage in more corporate social responsibility and enjoy more favorable social reputations. Previous studies also consistent with their findings. Adams and Funk (2012) concluded that female directors, care less about power and more about universalism than male directors and as result, so it is possible that the more gender diverse the boards are, stakeholder interests are embraced to a greater extent. So, it is argued that board with more female members will be more stakeholders oriented and engage in sustainability performance. Therefore, the following hypothesis was developed:

Hypothesis 1e: Board diversity will positively affect corporate sustainability performance.

3.5.6 Board Expertise and Corporate Sustainability Performance

Board expertise is vital corporate governance requirement to ensure effective internal governance (Akwaa-Sekyi & Moreno Gené, 2016). Board expertise can be from different perspective like financial or business knowledge or educational level. Minton, Taillard, and Williamson (2014) noted that financial experts among a board's independent directors arguably have lower costs in acquiring information about the complexity and associated risks of certain financial transactions and hence are better able to efficiently monitor senior management. Prior studies also reported positive results for board financial knowledge

(Agrawal & Chadha, 2005; Burak Güner, Malmendier, & Tate, 2008; DeFond, Hann, & Hu, 2005). For example, Agrawal and Chadha (2005) find that having directors with a CPA, CFA, or similar degree on audit committees translates into fewer earnings restatements, and DeFond et al. (2005) document a positive stock market reaction to the appointment of directors with accounting knowledge to the audit committee (though not to the appointment of other financial experts). On the other hand, Board expertise can also lead to sustainable performance. Barnard (1938) contends the need for directors to have superior intellectual capacities. Higher education has been associated with superior cognitive and information processing ability (Bantel & Jackson, 1989) and greater ability to create strategic change within an organization (Wiersema & Bantel, 1992). Another study by (Kim, 2005), using a sample of 199 large, publicly traded Korean companies from 1990 through 1999, found that board external social capital is positively associated to performance. Notably, Walls et al. (2012) stated clearly that “human resources are an important capability for the development of environmental strategies because dealing with environmental issues requires expert knowledge” (p. 10). Thus, board expertise can be crucial for sustainability. Therefore, the foregoing discussion suggests that there should be a positive relationship between the board expertise and sustainability performance as proposed by the following hypothesis:

Hypothesis 1e: Board expertise is positively related to corporate sustainability performance.

3.6 Board of Directors’ Characteristics and ERM Use

Prior research on ERM has mainly focused on relationship between firm-specific characteristics and ERM adoption (Beasley et al., 2005; Pagach & Warr, 2011). Little is known about how board specific characteristics can influence ERM adoption. However, an

increasing number of researchers argue that it is the responsibility of board of directors to contribute to mitigation of risk (Lenssen et al., 2014; Meulbroek, 2002). Therefore, it can be reasonably argued that board of directors should have significant influence on effective use of ERM in a firm context. This argument can be further supported by extant literature. For example, COSO (2004) note that, effectiveness of ERM system depends on active participation of board of directors. Furthermore, Beasley et al. (2005) show that the presence of a chief risk officer, board independence, managerial involvement, firm size and auditor type is associated with a greater stage of ERM adoption. The decision to implement ERM is made by the board of directors rather than by the CEO (Lam, 2001). Rachagan et al. (2002) provide evidence that encouragement from the board is one of the most important driving forces in adopting ERM. Likewise, Kleffner et al. (2003) acquired data from a mail survey as well as telephone interviews to know ERM implementation for Canadian firms listed in Toronto Stock Exchange and found that 51% respondents identified board of directors as the most influential element for ERM adoption. Recent studies also support the board of directors' relevance to ERM use from developing country context. For example, Daud et al. (2011) examined the stage of ERM implementation for Malaysian context using a questionnaire survey and recorded positive correlation between the quality of board of directors' and the level of ERM adoption for all seven industries studied. Yazid et al. (2011) further evident that the quality of board of directors play a significant role in respect of ERM implementation for Government-Linked Companies (GLCs). Therefore, it can be reasonably argued that, all the characteristics of board of directors in this study will have positive impacts on ERM use in Bangladeshi publicly listed firms. At the same time, extant literature also support this argument that specific board characteristics like independence (Beasley et al., 2005; Desender, 2011), CEO duality (Desender, 2011), and board responsibility towards corporate governance (Sobel & Reding, 2004) are significantly

associated with the use of ERM program. The above discussion, thus, leads to the following set of hypotheses:

H2: Board characteristics (size, composition, leadership, ownership, diversity, and expertise) are positively associated with ERM use.

H2a: Board size is positively associated with ERM use.

H2b: Board composition is positively associated with ERM use.

H2c: Board leadership is positively associated with ERM use.

H2d: Board ownership is positively associated with ERM use.

H2e: Board diversity is positively associated with ERM use.

H2f: Board expertise is positively associated with ERM use.

3.7 Board of Directors Characteristics and MCS Use

Boards of directors of corporations provide a governance safeguard to both equity capital and managerial employment contracts. Thus, the board is a potentially important instrument of internal control (Hahn, 2011). Board of directors does not manage corporate activities because they are institutionally unable to do so. Boards typically meet only six to twelve times a year. The complex business of a publicly held corporation cannot be managed with such a limited investment of time. Therefore, they appoint full time managers for the task of managing. Although the board cannot manage the corporation's business, it does have a significant role. Those who manage must be monitored to ensure that they are the right persons for their jobs and they are managing in the shareholders' interest. Because of the diffusion of shareholdings, the shareholders as a body are neither motivated nor able

to engage in such monitoring. For this reason board of directors are treated as principle monitoring mechanisms in corporate governance model who later adopt diverse monitoring mechanisms specifically MCS to facilitate their task of overseeing(Eisenberg, 1997). However, literature on board of directors' association with the use of MCS is limited. Duréndez et al. (2016) argue that proper design of MCS will be influenced by factors which can guide organizational system. Duréndez et al. (2016) provide evidence on how the use of MCS can vary across different types of firms, between family and non-family firms particularly. This can lend support for board of directors' influence on level of MCS use by a particular firm because both link to leadership of the organization and board of directors typically guide organizational system. For effectiveness of MCS, the organization requires capacity to provide leadership and integrity (Abdel-Kader & Luther, 2008). Boards of directors are the leaders and establish the tone of integrity from the top. Therefore, it is rather arguable that board of directors will ensure maximum use of MCS and will set tone of integrity. MCS can thereby be a great tool for board of directors for establishment of such tone. Furthermore, COSO (2013) vested the responsibility to board of directors to 'establish the tone at the top' through monitoring and oversee management functions to enable control in effect. From the above discussion it can be hypothesized that; board of directors can positively affect the use of MCS.

H3: Board characteristics (size, composition, leadership, ownership, diversity, and expertise) are positively associated with MCS use.

H3a: Board size is positively associated with MCS use.

H3b: Board composition is positively associated with MCS use.

H3c: Board leadership is positively associated with MCS use.

H3d: Board ownership is positively associated with MCS use.

H3e: Board diversity is positively associated with MCS use.

H3f: Board expertise is positively associated with MCS use.

3.8 ERM and Corporate Sustainability Performance

From the point of going concern, good financial management is a part of sustainability (Aras & Crowther, 2008) and ERM is relevant ensuring good governance of financial assets. ERM program improves firms risk profile which may signal their commitment to risk management (Meulbroek, 2002). Furthermore, applying ERM may increase risk awareness in a firm and subsequently enhances decision making ability leading to firm value maximization (Razali et al., 2011). After reviewing the academic and practitioner literatures on risk and ERM, Bromiley, McShane, Nair, and Rustambekov (2015) concluded that, there remains small scholarly work on ERM adoption and effectiveness. However, they found this area growing with an increased attention of researchers (Beasley et al., 2005; Liebenberg & Hoyt, 2003; Pagach & Warr, 2010; Subramaniam, Collier, Phang, & Burke, 2011). For example, studying US insurance industry, Hoyt and Liebenberg (2011), find a positive relation between ERM adoption and firm value (measured by Tobin's Q). In Asian context, Lai and Samad (2010) explained how ERM implementation impact organizational performance. The impact of ERM on organization performance other than financial is yet to get much attention from academic scholars. To date, only Soomro and Lai (2017) has explored ERM and sustainability. They proposed a framework of ERM which embed sustainability management and argued that it will lead to CSP. Therefore, it is reasonable to conclude that implementation of ERM will positively impact the firm to achieve sustainability performance.

H4: ERM implementation is positively associated with CSP.

3.9 MCS and Corporate Sustainability Performance

Use of MCS can influence firm performance (Cosenz & Noto, 2015; Davila & Foster, 2005; Duhan, 2007). There are a number of reasons why MCS might be beneficial for improving firm performance. Firstly, MCS enhances mutual commitment and coordinated action toward desired outcomes, fosters the definition of goals and their communication, decreases the uncertainty and leads to higher performance (Adler & Chen, 2011). Secondly, MCS increases the efficiency of locating solutions to task related problems (McGrath, 2001) and put into practice evaluation to improve performance (Cheng & Van de Ven, 1996).

Similarly, it is also getting consensus among researchers that MCS could be a key tool for sustainability. For example, Gond et al. (2012) argued that, as MCS formulates actors' practices (Ahrens & Chapman, 2007; Hopwood, 1976), and aids strategy (Kober et al., 2007; Langfield-Smith, 1997). Therefore if used appropriately, MSC can push organizations in the direction of sustainability. Accordingly, scholars attempted to examine how MCS can lead to corporate sustainability. For example Arjaliès and Mundy (2013) employs Simons' (1995) levers of control framework to explore how organizations leverage MCS in different ways in order to drive strategic renewal and trigger organizational change while simultaneously supporting society's broader sustainability agenda. With French listed company sample Arjaliès and Mundy (2013) provides evidence suggesting the use of MCS has the potential to contribute to society's broader sustainability agenda through processes that enable innovation, communication, reporting, and the identification of threats and opportunities. In similar ground Eldridge et al. (2013) conducted a case study in a European high technology start-up company using Simons LoC

framework and illustrate that MCS can yield new useful insights for managers when dealing with uncertainty. More recently, with larger sample of European firms Crutzen et al. (2017) find similar evidence that MCS is required for a firm to become more sustainable. So, it is reasonable to conclude that MCS use will positively influence firm's sustainability performance and the hypothesis is as follows:

H5: MCS use is positively associated with CSP.

3.10 Mediation Role of ERM and MCS on BDC-CSP Relationship

In explaining the relationship between board of directors' characteristics and sustainability performance, one significant limitation of this relationship is that it is conceptually incomplete in the sense that it does not clearly identify how board actions/decisions contribute to superior sustainability performance. It is impractical to assume that board members will monitor day to day activities and operate business to attain its strategic goal. Boards of directors, therefore, hire managers to perform these duties (Walsh & Seward, 1990) while they oversee and monitor management action and ensure that a sound control environment is in place (Wang & Hsu, 2013). This business process suggests us to consider management in between the board members and organizational performance.

There is no global consensus as to which conditions a particular board characteristics will positively impact firm financial (Ujunwa, 2012; Wellalage & Locke, 2013) social, environmental and governance performance (Velte et al., 2016; Walls et al., 2012; Zhang, Zhu, et al., 2013). Numerous studies observe board size, composition, diversity, expertise etc. influence firm outcome positively. As illustrated, Shaukat et al. (2016) observed that the greater the CSR orientation of the board (as measured by the board's independence,

gender diversity, and financial expertise on audit committee) the higher its environmental and social performance. However, some have revealed the negative impact or non-association between board characteristics and business performance. For example Ujunwa (2012) find negative relationship between board size, CEO duality, and gender diversity on firm outcome.

In light of these mixed results, it can be reasonable concluded that board attributes may indirectly affect firm sustainability performance through the emphasis placed on other factors, such as effective use of internal control mechanisms. This conclusion support the argument that board characteristics rarely influence sustainability performance directly but that they can do so indirectly through chain of cause-and-effect relationships. Hence, this study is motivated to substantiate these claims by examining the mediating role of internal control mechanisms (ERM and MCS) in the relationship between board characteristics and sustainability performance.

A number of related studies lend support to the mediating role of ERM and MCS (Aliyu, Jamil, & Mohamed, 2014; Kallunki et al., 2011; Nguyen et al., 2017; Parker & Ameen, 2017; Soltanizadeh et al., 2016). ERM is found mediates the relationship between executives' role and firm performance. In the context of Malaysia, Soltanizadeh et al. (2016) show how ERM mediates the relationship between business strategy and its performance. Similar to ERM, 'proactive risk management' is also used as a mediator for South African context by Parker and Ameen (2017).

Furthermore, Aliyu et al. (2014) proposes the mediating influence of management control systems in the relationship between corporate governance and performance of Nigerian banks where they used board characteristics as proxy for corporate governance and includes both financial and non-financial performance measurements for bank

performance. Meanwhile, Kallunki et al. (2011) and Duréndez et al. (2016) both find positive outcome for a mediation effect of MCS in the context of Finnish business units and Spanish SMEs. Kallunki et al. (2011) investigate the role of formal and informal management control systems as mechanisms which mediate the effect of enterprise resource planning systems adoption on firm performance and find that formal types of management control systems act as intervening variables mediating the positive lagged effect between enterprise systems adoption and non-financial performance. In the context of SMEs, Duréndez et al. (2016) find that family businesses use less management control systems than non-family firms and that the use of MCS has a positive influence on business performance. With more recent studies MCS is found indirectly effecting the relationship between transformational leadership style and managerial performance (Nguyen et al., 2017). Therefore, the foregoing discussion leads to the following hypotheses:

H6 The relationship between Board characteristics (size, composition, leadership, ownership, diversity, and expertise) and corporate sustainability performance is mediated by ERM use

H6a ERM use mediates the relationship between board size and corporate sustainability performance.

H6b ERM use mediates the relationship between board composition and corporate sustainability performance.

H6c ERM use mediates the relationship between board leadership and corporate sustainability performance.

H6d ERM use mediates the relationship between board ownership and corporate sustainability performance.

H6e ERM use mediates the relationship between board diversity and corporate sustainability performance.

H6f ERM use mediates the relationship between board expertise and corporate sustainability performance.

H7 The relationship between Board characteristics (size, composition, leadership, ownership, diversity, and expertise) and corporate sustainability performance is mediated by MCS use.

H7a MCS use mediates the relationship between board size and corporate sustainability performance.

H7b MCS use mediates the relationship between board composition and corporate sustainability performance.

H7c MCS use mediates the relationship between board leadership and corporate sustainability performance.

H7d MCS use mediates the relationship between board ownership and corporate sustainability performance.

H7e MCS use mediates the relationship between board diversity and corporate sustainability performance.

H7f MCS use mediates the relationship between board expertise and corporate sustainability performance.

3.11 Chapter Summary

Drawing from literature review in chapter two, this chapter started with addressing and specifying research gaps of the study. The chapter then presented the research framework. This theoretical framework is heavily dependent upon two theories namely resource dependency theory and contingency theory. This chapter also presented arguments and literature support for hypothesis development based on relationship among board of directors' characteristics (independent variable), enterprise risk management and management control systems (mediating variable), and corporate sustainability performance (dependent variable). Hypothesis development includes five major hypothesis relating to direct relationship and other two major hypothesis for indirect relationship of board of directors' characteristics and corporate sustainability performance.

Table 3.1 summarises all the hypotheses discussed above along with their labels and number.

Table 3.1: Hypothesis development

No	H	Hypothesis
1	H1a	Board size is positively associated with corporate sustainability performance
2	H1b	Board composition is positively associated with corporate sustainability performance
3	H1c	Board leadership is positively associated with corporate sustainability performance
4	H1d	Board ownership is positively associated with corporate sustainability performance
5	H1e	Board diversity is positively associated with corporate sustainability performance
6	H1f	Board expertise is positively associated with corporate sustainability performance
7	H2a	Board size is positively associated with ERM use
8	H2b	Board composition is positively associated with ERM use
9	H2c	Board leadership is positively associated with ERM use
10	H2d	Board ownership is positively associated with ERM use

Table 3.1, continued

No	H	Hypothesis
11	H2e	Board diversity is positively associated with ERM use
12	H2f	Board expertise is positively associated with ERM use
13	H3a	Board size is positively associated with MCS use
14	H3b	Board composition is positively associated with MCS use
15	H3c	Board leadership is positively associated with MCS use
16	H3d	Board ownership is positively associated with MCS use
17	H3e	Board diversity is positively associated with MCS use
18	H3f	Board expertise is positively associated with MCS use
19	H4	ERM use is positively associated with corporate sustainability performance
20	H5	MCS use is positively associated with corporate sustainability performance
21	H6a	ERM use mediates the relationship between board size and corporate sustainability performance
22	H6b	ERM use mediates the relationship between board composition and corporate sustainability performance
23	H6c	ERM use mediates the relationship between board leadership and corporate sustainability performance
24	H6d	ERM use mediates the relationship between board ownership and corporate sustainability performance
No	H	Hypothesis
25	H6e	ERM use mediates the relationship between board diversity and corporate sustainability performance
26	H6f	ERM use mediates the relationship between board expertise and corporate sustainability performance
27	H7a	MCS use mediates the relationship between board size and corporate sustainability performance
28	H7b	MCS use mediates the relationship between board composition and corporate sustainability performance
29	H7c	MCS use mediates the relationship between board leadership and corporate sustainability performance
30	H7d	MCS use mediates the relationship between board ownership and corporate sustainability performance
31	H7e	MCS use mediates the relationship between board diversity and corporate sustainability performance
32	H7f	MCS use mediates the relationship between board expertise and corporate sustainability performance

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Chapter Preview

The central objective of this chapter is to present methodology the study adopted to test the hypotheses generated from research framework exhibited in the previous chapter. For this, research design is explained which includes research paradigm and approach, measurement of variables, procedures of data collection and sampling, and questionnaire design. The objective of this chapter is to lay foundation for data analysis and discussion of results. The chapter commences with research plan followed by survey design. The chapter then details data collection procedures and examines validity of the study.

4.2 Research Design

Research design includes planning a research and choosing a suitable underpinned assumption i.e. research paradigm, selecting research methodology, and methods of collecting and analysing data.

4.2.1 Research Plan

The research plan is shown in Figure 4.1 which includes a five step process each of them covers multiple tasks. According to Figure 4.1, at the very outset the study reviewed relevant literature to grasp the broader ideas on relevant issues regarding research interest to identify the specific research gap. In next step the study conceptualizes the study by formulating the theoretical framework and developing hypothesis accordingly. Then the study operationalize the study variable identified in the previous step and design the research followed by data collection. The collected data is then analysed using statistical

software in next step. The final stage includes the interpretation to understand the key findings and reporting accordingly.

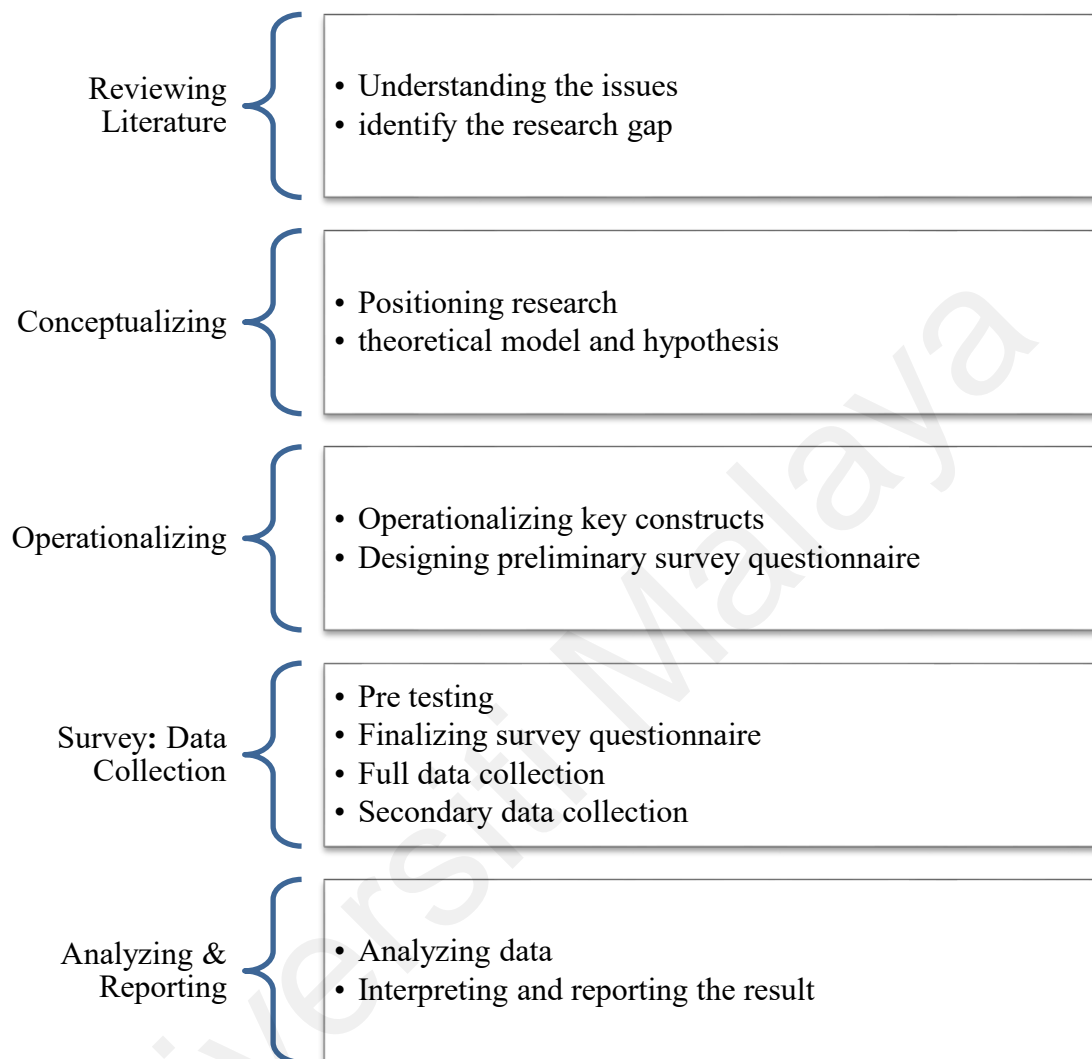


Figure 4.1: Research plan deployed for the study

4.2.2 Research Paradigm: Epistemological and Ontological Assumption

All research is based on some underlying philosophical assumptions about what constitutes 'valid' research and which research method(s) is/are appropriate for the development of knowledge in a given study. This “set of common beliefs and agreements shared between scientists about how problems should be understood and addressed” is often termed as research paradigm (Kuhn, 1962). Paradigms are, at their best, useful for

any scientific community. It provides focus, orchestrate effort and assist the research community to accumulate knowledge about the issues of interest (Malmi, 2010).

According to Iivari, Hirschheim, and Klein (1998) a paradigmatic model encompasses four main paradigmatic assumptions:

- a. Ontology: refers to the structure and properties of truth.
- b. Epistemology: represents the essence about how knowledge could be gained.
- c. Methodology: refers to the procedures or methods employed for gaining knowledge.
- d. Ethics: embodies responsibilities of a researcher to operation and outcomes.

In accounting research Chua's (1986) *Radical Development in Accounting Thought* has become a classic in the elucidation of diverse philosophical assumptions held by researchers. Chua (1986) classified accounting research into two main approaches: mainstream accounting (more commonly refers to positivistic approach) and alternative worldviews (also called interpretivist and critical approach). Mainstream accounting emphasizes on the positivistic stance in which statistical evidence are often used to deduce conclusion (Johnson & Duberley, 2000). The use of large-scale and representative sample to draw conclusions against a theory is typically associated with this approach where reasoning commences with a general theory and concludes with particular observations (Bryman & Bell, 2015). This approach tends to generalize the findings based on objective or numerical data which could be charted, graphed, tabulated, and analysed applying statistical techniques. Quantitative research methods, for example, survey questionnaire, secondary data analysis, content analysis and experiments are most commonly used in this approach.

However the alternative worldview embodies the interpretive and critical accounting approach which emphasizes on qualitative research methods. It places a high priority on the researcher's subjectivity in describing the observed phenomena and theory building (Chua, 1986; Johnson & Duberley, 2000). In other words, it concerns on understanding a particular phenomenon in-depth based on the perspective of the research participants (McRoy, 1995). Inductive reasoning drives the researcher to establish new model relying upon observable evidence rather than affected by previous theories. Generalization of findings is not the ultimate aim of this approach. Unlike the quantitative approach where the researchers remain objectively isolated from the subject matter, in this approach, the researcher are immersed in the research to enable them to induce conclusions (Bryman & Bell, 2015; Johnson & Duberley, 2000). Qualitative research methods, for example, ethnography, case study, interview, focus group discussion are most commonly used in this approach (Johnson & Duberley, 2000).

This study intends to examine universal laws in relation to social phenomena, i.e. linking Board of Directors' characteristics and Internal Control Mechanisms to Corporate Sustainability Performance. Hence, this research is classified under the positivist paradigm. Such stance enables the researcher to postulate the underlying assumptions to provide an answer to the research questions. According to Chua (1986) positivistic approach evidenced by formal propositions, objective measures of variables, hypothesis testing, and the drawing of inference from observed sample. The current study relied heavily on its data (primary and secondary) to attain its research goal. The quantitative research methods such as secondary data collection and survey questionnaire are usually used to gain knowledge for the research that mainly situated in the positivist paradigm (Johnson & Duberley, 2000). Hence the study typically applies quantitative measurement and statistical analysis. Qualitative methodology was not followed for this study. First and foremost, particularly

in the early stages of study (exploratory research) and in developing theory, conceptual analysis is best suited. In this regard, the current study is a confirmatory work focused in which certain similar hypotheses have already been identified and researcher aims to analyse the existing theory. Secondly, the purpose of this study is not primarily to analyse what has been experienced, documented or published in written words, but rather to measure correlations between variables of interest with the goal of developing and testing theoretical hypotheses developed for large-scale multivariate analyses which rather fit quantitative domain.

Considering the objectives of this study it can be called correlational research as it aims to examine association (whether two constructs or variables move simultaneously) between different variables of interest. Business research should be done in a regular setting where study usually takes place in a non-contrived climate (Cavana, Delahaye, & Sekaran, 2001). Accordingly, the current study is performed in the uncontrived settings of registered public companies in Bangladesh. Moreover if the required data are collected only on one occasion (may be during few months, several weeks or days) the researches are labelled as cross-sectional or one-shot research (Cavana et al., 2001). Considering this current study is also classified under the cross-sectional research since the data has been collected around four month period from July to October 2017.

4.3 Measurement of Research Variables

As discussed in previous section, the study uses quantitative approach because there is a large body of literature, established variables, and existing theories to underpin the research work. Therefore, the study is heavily depended on these aforementioned body of literature while conceptualizing and measuring study variables. Table 4.1 provides details of the sources of such measurement. It is noteworthy that, this study gathered both primary

and secondary data. The primary data were obtained through a questionnaire survey, while the secondary data were gathered from a web survey. Questionnaire survey captures the data for the latent constructs (mediating and dependent variables) such as ERM use, MCS use, and CSP. Web survey captures the data for the independent variable i.e. board of directors characteristics. All the independent variables, namely, board size, board composition, board leadership, board ownership, board diversity, and board expertise are directly observed constructs and data are available in the company websites and annual reports. Moreover, the study used two control variables, namely firm size and industry, in the research model. Likewise, control variable measurement and data collection follows the approach used for independent variable. However, for the rest of the variables such as two mediating variables and dependent variable, the study uses questionnaire because these variables are latent in nature or not directly observable like independent and control variables. Measurement of these variables require establishment of a set of observable indicators that are related to how the latent variables behave. The relationship between the latent variables and their indicators, known as epistemic relationship, can be formative or reflective (Diamantopoulos & Siguaw, 2006). A formative relationship is causal, whereby changes in the latent variable are determined by changes in its so-called formative indicators. A reflective relationship is consequential, whereby changes in the latent variable are reflected in changes in its indicators, the so-called reflective indicators. Based on this distinction, the study established measurement model presented in Table 4.1. This table shows that, apart from independent and control variables, this study adopted a total of 57 measurement items which are well-defined and validated by researchers from existing literature for developing scales. Regarding mediating constructs such as ERM use and MCS use, ERM use is conceptualised as first order reflective constructs using eight items while MCS use is conceptualised as higher order formative construct based on two dimensions

of MCS namely diagnostic and interactive using fifteen and twelve items respectively. Dependent construct namely corporate sustainability performance (CSP) is also conceptualized as higher order formative constructs based on four dimensions of sustainability namely financial, environmental, social, and governance sustainability performance. CSP adapted total 22 items from which its four dimensions such as financial, environmental, social, and governance performance adapted four, seven, six, and five items respectively. The details of the measurement items along with references are discussed in the following sections.

Table 4.1: Measurement of Research Variables

Constructs	Position in the research model	Observed or Latent	Data collection method	No. of Items	References
Board Size	Independent variable	Observed construct	Web survey		Wang and Hsu (2013), Huang and Wang (2015)
Board Composition	Independent variable	Observed construct	Web survey		Yatim (2010), Tao and Hutchinson (2013)
Board Leadership	Independent variable	Observed construct	Web survey		Berrone and Gomez-Mejia (2009), Frijns, Dodd, and Cimerova (2016)
Board Ownership	Independent variable	Observed construct	Web survey		Bathula (2008), Kim et al. (2009), Horváth and Spirollari (2012)
Board Diversity	Independent variable	Observed construct	Web survey		De Cabo, Gimeno, and Nieto (2012), Sila, Gonzalez, and Hagendorff (2016)

Table 4.1, continued

Constructs	Position in the research model	Observed or Latent	Data collection method	No. of Items	References
Board Expertise	Independent variable	Observed construct	Web survey		Agrawal and Chadha (2005), Minton et al. (2014)
Enterprise Risk Management (ERM) use	Mediating variable	First order reflective latent construct	Questionnaire	8	Moeller (2007); COSO (2004)
Management Control Systems (MCS) use	Mediating variable	Higher order formative latent construct			
Diagnostic use of MCS		First order reflective latent construct	Questionnaire	15	Kober et al. (2007)
Interactive use of MCS		First order reflective latent construct	Questionnaire	12	Kober et al. (2007)
Corporate Sustainability Performance (CSP)	Dependent variable	Higher order formative latent construct			
Financial performance		First order reflective latent construct	Questionnaire	4	Torugsa et al. (2012), Vinodh, Jayakrishna, and Joy (2011)
Environmental performance		First order reflective latent construct	Questionnaire	7	Torugsa et al. (2012), Rahdari and Rostamy (2015), A. Adams et al. (2014)
Social performance		First order reflective latent construct	Questionnaire	6	Torugsa et al. (2012), Rahdari and Rostamy (2015), A. Adams et al. (2014)
Governance performance		First order reflective latent construct	Questionnaire	5	Torugsa et al. (2012), Rahdari and Rostamy (2015)
Firm Size	Control variable	Observed construct	Web survey		Artiach et al. (2010); Chih et al. (2010)
Industry	Control variable	Observed construct	Web survey		Artiach et al. (2010);

4.3.1 Corporate Sustainability Performance (CSP): Dependent Variable

It is mentioned in previous section that, this study conceptualizes CSP as higher order formative construct which includes four dimensions of sustainability i.e. financial, economic, social, and governance. Chapter 2 explains that these four dimensions are integral part of sustainability and they determine sustainability, overlooking any one dimension will result diminutively defined corporate sustainability performance in respect to the conceptualization by this study. However these individual dimensions are measured through reflective indicators constituting first order reflective construct.

For CSP construct, this study used a Likert like scale questionnaire instrument, which was developed by previous researchers. The Likert scale was designed to force the subject to agree or not agree with a statement (Sekaran, 2006). This research favours these self-rated and subjective indicators for financial performance as contrasted to objective measures, primarily because key informants (e.g. CFOs) typically fail to provide numerically validated performance data demanded in the instrument. In addition, the implementation of the subjective performance indicators would be more acceptable if encountered difficulties in properly obtaining related objective data. This approach of perceptual measurement of performance is well established in extant literature arguing that perceived measures could be a plausible choice for objective indicators of performance (Dess & Robinson, 1984). In a similar vein, Hansen and Wernerfelt (1989) and Homburg, Krohmer, and Workman Jr (1999) find a high correlation and concurrent validity of objective and subjective data on performance. Therefore, consistent with the literature, The report asks CFOs to determine the success of their organization on the basis of specific factors, using a 7-point Likert scale of answers varying from ‘significantly below average’

to ‘significantly above average’. The descriptions of the elements of the instrument are given in Table 4.2.

Table 4.2: Measurement of Corporate Sustainability Performance

Dimension	Scale items	Sources
Corporate Financial Sustainability Performance	<ol style="list-style-type: none"> 1. Return on assets (earnings generated from invested assets) 2. Net profits to sales 3. Market share performance 4. Contribution to gross domestic product (GDP) 	<p>Torugsa et al. (2012), Vinodh et al. (2011)</p>
Corporate Environmental Sustainability Performance	<ol style="list-style-type: none"> 1. Periodic natural environment audit 2. Purchasing criteria including ecological requirement 3. Environmental training for employees 4. Program for water recycling 5. Program of waste recycling/reuse 6. Controlling the use of natural resource and emission levels 7. Environmental Risk Assessment 	<p>Torugsa et al. (2012), Rahdari and Rostamy (2015), A. Adams et al. (2014)</p>
Corporate Social Sustainability Performance	<ol style="list-style-type: none"> 1. Engage in philanthropic activities, e.g. charitable donation 2. Sponsorship of local community initiatives 3. Consider interests of stakeholders in investment decisions by creating a formal social dialogue 4. Socially Responsible Investing 5. Promotional program for reduced child labour and forced labour 6. Stakeholder involvement in community and social issues 	<p>Torugsa et al. (2012), Rahdari and Rostamy (2015), A. Adams et al. (2014)</p>
Corporate Governance Sustainability Performance	<ol style="list-style-type: none"> 1. Employee participation in decision-making process 2. Creation of good work-life balance and family friendly employment 3. Equal opportunities in workplace, e.g. employing disabled people, and/or promoting women to senior management positions 4. Clear performance evaluation criteria 5. Business Ethics and Codes 	<p>Torugsa et al. (2012), Rahdari and Rostamy (2015)</p>

Table 4.2 summarizes the items in the questionnaire used to measure the main construct. There are 22 items, each with a seven-point Likert-type scale. Four dimensions of CSP were used to represent CSP, i.e., financial, environmental, social, and governance performance.

Financial sustainability, as shown in Table 4.2, comprised of four items. Three of the items were adapted from Vinodh et al. (2011) who formulated a sustainability index based on fuzzy determination. The other item is taken from Torugsa et al. (2012). The assessment of financial sustainability requires CFO of a particular firm indicate his/her perception about firm last three years' financial performance in regard to ROA, net profit to sales, market share value, and contribution to national income relative to key competitors' in the industry. The seven-point Likert-type scale used ranged from 1 (significantly below average) to 7 (significantly above average). A higher mean score indicates better financial sustainability performance of the company.

In similar fashion, the other sustainability dimensions also captured perceptions about the sustainability performance of firm. Under environmental sustainability performance dimensions total seven items were used (see Table 4.2). Five of the items were drawn from Torugsa et al. (2012) and from remaining items Rahdari and Rostamy (2015) and A. Adams et al. (2014) each contributed one item. Corporate environmental sustainability performance indicates firm involvement in environmental audit, environmental risk assessment, controlling waste and preservation of water, and environmental training of employees etc. in comparison to other competitive firms in the industry.

Corporate social sustainability performance refers to six social sustainability indicators. Torugsa et al. (2012) contributed to generate three items and Rahdari and Rostamy (2015) contributed two items of these six indicators of social sustainability performance. The other item is drawn from A. Adams et al. (2014). Similar to the other sustainability dimensions, social sustainability is also based on CFO perception about how observed firm is performing regarding items selected compared to its core competitors. Therefore higher

mean score indicates more involvement of social sustainability indicators by a firm relative to other firms in the industry.

The fourth dimensions of sustainability performance namely corporate governance performance consists of five items. This dimension is mostly adapted from Rahdari and Rostamy (2015) with one item drawn from Torugsa et al. (2012). Rahdari and Rostamy (2015) carefully designed governance sustainability performance as a part of CSP derived in the name of most common indicators of ESG aspects of business. Therefore, higher mean score of governance sustainability indicates good governance of firm in respect of sustainable performance. Higher score also indicates better employed corporate culture existence in observed firm.

4.3.2 Internal Control Mechanisms

As stated previously, two separate mechanisms of internal control systems i.e. Enterprise Risk Management (ERM) and Management Control Systems (MCS) are examined individually as two mediating variables between the relationship of board of directors' characteristics and corporate sustainability performance. ERM is commonly used as a tool for holistic management of risk exposure of a firm and MCS is used as a tool to aid management for steering an organization toward its strategic objectives and competitive advantage.

4.2.2.1 Enterprise Risk Management (ERM)

The study conceptualizes ERM as the device designed to manage risks and opportunities within its risk appetite applied across the enterprise at every level and unit, which is able to provide reasonable assurance to an entity's management and board of directors. Thereby,

the definition provided by Enterprise Risk Management —Integrated Framework (2004) be adopted as below

“Enterprise risk management is a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.”

According to the COSO (2004), ERM consists of eight interrelated components, which are derived from the management process required to run and integrate the tool. ERM is not strictly a serial process, where one component affects only the next. It is a multidirectional, iterative process in which almost any component can and does influence another. The study aims at assessing the effective use of ERM in a particular organization setting. For this, these eight components can be used as proxy to assume whether an entity is using ERM effectively or not to manage its risk holistically. This argument is supported by the COSO (2004) proceedings

“...Determining whether an entity’s enterprise risk management is “effective” is a judgment resulting from an assessment of whether the eight components are present and functioning effectively. Thus, the components are also criteria for effective enterprise risk management.” (COSO, 2004 p-5).

Therefore, the questionnaire were designed accordingly to know about the frequency of use of total eight components of ERM framework. Adopting COSO (2004) ERM framework, eight statements on components use is presented in the instrument and consequently the informants were asked to rate the degree of their agreement about these

statements employing a 7-point Likert-type scale ranging from 1 (strongly disagree), 4 (neither disagree nor agree), to 7 (strongly agree). The breakdown of components of ERM and their related measures and sources of references are included in Table 4.3. This form of understanding of ERM use through statements regarding ERM components are consistent to Moeller (2007).

Table 4.3: Details of items used for Enterprise Risk Management (ERM)

Variable & Question	Items	Source
Enterprise Risk Management (ERM) use	1. We have a conducive internal environment including risk management philosophy and risk appetite, integrity and ethical values for holistic risk management.	Moeller (2007) COSO (2004)
	2. Our company has in place a process to set objectives and that the chosen objectives support and align with the entity's mission and are consistent with its risk appetite.	
	3. We identify, distinguish between risks and opportunities of Internal and external events affecting achievement of an entity's objectives.	
	4. We assess risks and analyse them considering likelihood and impact, as a basis for determining how they should be managed.	
	5. We select risk responses – avoiding, accepting, reducing, or sharing risk – developing a set of actions to align risks with the entity's risk tolerances and risk appetite.	
	6. We have established and implemented policies and procedures to help ensure the risk responses.	
	7. In our company, relevant information is identified, captured, and communicated in a form and timeframe that enable people to carry out their responsibilities	
	8. We monitor the entirety of enterprise risk management through ongoing management activities or in a separate evaluation and modifications made as necessary.	

4.2.2.2 Management control systems

Simons (1995a) distinguished between interactive and diagnostic controls. MCS mechanism is considered diagnostic or interactive depends upon how the organization uses

the mechanism. Diagnostic control mechanisms were defined by Simons (1994) p. 170-171 as

“....formal feedback used to monitor organisational outcomes”, while interactive control mechanisms are formal systems used by managers “to regularly and personally involve themselves in the decision activities of subordinates”

Both types of controls are necessary within an organization as they are used for different purposes (Kober et al., 2007). Diagnostic controls serve to measure and monitor outputs, and correct deviations from pre-set measures of performance (Simons, 1995a). While diagnostic control systems assisted organizations to pursue intended strategies, such systems did not encourage organizations to consider new opportunities. Interactive controls, on the other hand, focus attention on strategic uncertainties. Simons (1995a) observed that these systems encouraged continual dialogue and debate, thus creating competitive pressure within the organization to innovate and adapt.

Therefore, as per discussion above this study conceptualized Management Control Systems use as second order formative construct determined by two types of MCS, namely diagnostic (DMCS) use and interactive (IMCS) use of MCS. These types of MCS further measured through first order reflective indicators. For this, the study incorporated 27 items on various control system characteristics used in an organization. These items were originally derived from the instruments used by Miller and Friesen (1982) and Simons (1987). Both instruments focused primarily on formal accounting controls. Kober et al. (2007), therefore, included additional items regarding non-accounting and informal control to broaden the range of controls examined. Their management control systems measurement items were comprised of 27 items. Of this 27 items, 15 items sought respondents' opinions on the extent of diagnostic use of different MCS mechanisms. The

rest 12 items are presented as statements that sought respondents' opinion regarding the extent of agreement in terms of interactive use of the MCS. This study adopts the measurement scale of Kober et al. (2007) which is presented in Table 4.4.

Consistent to other measurement, the adopted items for diagnostic use of MCS were therefore measured on a seven-point scale ranging from 1 (not at all used) to 7 (to a very great extent). For interactive use of MCS, the study used the statement agreement approach measured on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). So, higher mean score in diagnostic and interactive use of MCS greater use of MCS in a company. However, this use is again means the perception to the key informant who is supposed to know the operation and effectiveness of such MCS.

Table 4.4: Details of items used for measurement of MCS use

Dimensions	Items	Source
Diagnostic Use of MCS (DMCS)	1. Informal communications (e.g., meetings, interpersonal contacts) in passing information up and down the hierarchy.	Kober et al. (2007)
	2. Formal reports (e.g., management reports, monthly performance reports).	
	3. Cost centres for cost control	
	4. Budget variance analysis	
	5. Procedure manuals	
	6. Formal appraisal of personnel	
	7. Internal audit groups for checking financial information systems and reports	
	8. Internal audit groups for checking <i>accreditation standards</i> (i.e., quality standards) for operations	
	9. External audits for checking <i>accreditation standards</i> (i.e., quality standards) for operations	
	10. Interdisciplinary meetings (i.e., meetings between people from different disciplines to exchange information)	
	11. Interdisciplinary workgroups/teams (e.g., people from different divisions working together on a project/task)	
	12. Management control reports relating outputs with inputs consumed (e.g., costs per test, output per labor hour)	
	13. Evaluation of performance in any period by comparing with those of competitors in the similar sector	
	14. Written explanations in budget reports for changes between current year results and the results of previous years	
	15. Resource sharing (i.e., different divisions sharing the same equipment /reagents/ personnel)	

Table 4.4, continued

Diagnostic Use of MCS (DMCS)	1. There is a strong emphasis on adherence to rules, policies, or plans.
	2. Management control systems are used to monitor virtually all tasks in your sub-unit.
	3. You have a high degree of discretion and autonomy in making decisions and responding to new unanticipated opportunities or challenges.
	4. Lab personnel/ IT people are awarded a high degree of autonomy in exercising judgment in carrying out tasks (i.e., self-regulation, low levels of monitoring).
	5. There is a strong sense of shared values, beliefs, and norms within the organization.
	6. Employees are committed to company's objectives and values.
	7. Information is well communicated from top management to lower levels.
	8. Information is well communicated across divisions.
	9. Information included in control reports is always accurate.
	10. The trend between last period's actual results and the results of the current period is monitored closely by senior managers.
	11. You are faced with tight budget goals.
	12. Management control systems are tailored to suit differing individual and divisional/ sectional needs.

4.3.3 Board of Directors' Characteristics

To measure different characteristics of board of directors', the study depends on secondary sources. Primarily, it relies on company's official websites to get the data. If the data are not available, latest available companies' annual reports were checked. However, there are other web sources used for few cases like share market analyst (e.g., Lanka Bangla Financial Portal www.lankabd.com, Centre for financial analysts www.stockbangladesh.com etc.). Table 4.5 shows the measurement of different board of directors' characteristics in details.

Table 4.5: Details of items used for Board of Directors' Characteristics

Variable	Measurement	Reference(s)
Board Size	Total number of directors in the board	Wang and Hsu (2013), Huang and Wang (2015)
Board Composition	Ratio of external directors in the board	Yatim (2010), Tao and Hutchinson (2013)
Board Leadership	Set equal to 1 if the CEO is also the chairman, 0 otherwise	Berrone and Gomez-Mejia (2009), Frijns et al. (2016)
Board Ownership	Percentage (%) of shareholding by directors of the company	Bathula (2008), Kim et al. (2009), Horváth and Spirollari (2012)
Board Diversity	Number of female members in the board	De Cabo et al. (2012), Sila et al. (2016)
Board Expertise	Number of professional business degree holders (CMA, CA, CFA etc.) in the board	Agrawal and Chadha (2005), Minton et al. (2014)

4.3.4 Control Variables

According to Bhattacharjee (2012) control variable refers to other extraneous variables that are not pertinent to explaining a given dependent variable, but may have some impact on the dependent variable. These variables must be controlled for in a scientific study. Therefore, control variables are not the variables of study interest but may influence the study variable of interest, i.e. dependent variable. In this study, corporate sustainability performance is denoted as a dependent variable. Like any other studies where organizational performance is used as a dependent variable, specification of other variables as exogenous to it is always a challenging task. The challenges arise from the fact that one single study focuses on one or few variables only and deliberately keep aside other variables from analysis due to practical reasons (March & Sutton, 1997). However, inclusion of control variables alleviates the problems in a great deal (Bhattacharjee, 2012). So, to be consistent with other organizational studies, this study treated Firm Size and Industry type as control variables. Prior studies find support for such treatment (Artiach et

al., 2010; Chih et al., 2010; Lourenço & Branco, 2013). Table 4.6 shows the control variables measurement and references.

Larger companies, probably because of visibility issues, are subject to greater public scrutiny than smaller companies, thus being under greater pressure to behave in more sustainable manner (Chih et al., 2010). Large companies, on average, are more diversified across geographical and product markets which means that they have larger and more diverse stakeholder groups (Brammer & Pavelin, 2004). A larger market presence translates into more transactions, which lead to a higher probability of negative events (Artiach et al., 2010; Schreck & Raithel, 2018). The consequence is that larger firms should be more willing to engage in socially and environmentally responsible activities to cover this increased risk than smaller firms. In addition, size may be considered as an indicator for the capacity of a firm to engage in environmental and social activities, which lead to fixed costs that are less important for larger companies (Ziegler & Schröder, 2010). Therefore it is arguable that larger firms will perform better in terms of sustainability also.

Another important variable that can influence sustainability performance of a firm is the industry it belongs to. Companies from different sector may vary in sustainability conceptualization and subsequently affect performance differently (Van Marrewijk, 2003). Therefore, the potential effect of industry is controlled. For analysis purpose, from the sample, the study identified environmentally sensitive industries such as textile, tannery, pharmaceuticals and chemicals etc. and grouped them together as 'Sensitive Industries' and the rest as 'Non-sensitive'. The reason behind such grouping is the relative pressure for sustainability incorporation varies within the environmental sensitivity of the business operation. Usually, highly sensitive firms are required to incorporate sustainability more often than their counterparts for legitimacy and social acceptance (Frost & Wilmshurst,

2000; Mohd Khalid et al., 2012; Sharma & Henriques, 2005). Table 4.6 summarizes the control variables and their measurement with references.

Table 4.6: Control variables measurement

Variable	Measurement	Reference(s)
Firm Size	Total Asset of the Firm	Artiach et al. (2010); Chih et al. (2010)
Industry	Set equal to 1 if the firm belongs to environmentally sensitive industry, 0 otherwise	Artiach et al. (2010); Frost and Wilmshurst (2000)

4.4 Population and Sampling Frame

As of 2nd May 2017, 298 companies were listed on Dhaka Stock Exchange (DSE). Due to the constraint of population numbers and also taking full advantage of a multi-industry survey as stated above, no sampling was used to provide a more accurate, consistent and detailed analysis and therefore the entire population was used as a test sample.

4.5 Unit of Analysis and Key Informants

This study identified all the publicly DSE listed firms as the unit of analysis. These organisations, for every sector in Bangladesh, are regarded as the most influential and powerful entity of business organizations.

Chief Financial Officers (CFO) were given the questionnaires. Such selected respondents have been named due to their high level of subject matter expertise as well as their hands-on experience. These are further known to be the most competent and directly involved in the company's administrative process and procedures. In most cases they are responsible for operations like internal control systems and risk management.

4.6 Research Instrument

There are different ways in which definitions and statements can be operationalised. However, researchers are required to consider the most appropriate and effective means of collecting the greatest amount of knowledge about legitimacy and reliability as best fit the study design (Easterby-Smith, Thorpe, & Jackson, 2012). Using large scale data from secondary source like websites and annual reports along with data from primary source through questionnaire are the most two common procedure used by researcher in this paradigm. This study used both primary and secondary source for collecting data. Primary (questionnaire) source is used for mediating and dependent variable while secondary (websites and annual report primarily) source data is used for independent variables (board of directors' characteristics).

4.6.1 Questionnaire Design

For this study, the structured questionnaire was posted to CFOs of Bangladeshi publicly listed companies in order to collect the relevant primary data. This is consistent with Aaker, Kumar, and Day (2008) who asserted that the participants were more convinced in reflecting honest answer via a questionnaire. Since questionnaire survey is more cost effective method and allows researcher to survey a large random sample of a population at a rather low cost (Sekaran, 2006). Furthermore mail survey exerts less pressure on an immediate response and gives the feeling of anonymity to the respondents (Gosselin, 1997). Therefore it was deemed appropriate to administer questionnaire for receiving sincere feedback in a straightforward manner and CFOs were appointed to play the role as representatives on behalf of their firms.

The questionnaire consisted of four sections in which each section headlined by a particular headings. The questionnaire used for survey is presented at the end of the thesis at Appendix A. All the headings supplemented by explicit instructions to suit the convenience of the respondents. As suggested by Zikmund, Babin, Carr, and Griffin (2013), the sensitive questions are supposed to be in the final section, the demographic profile/general information was positioned at the end of the questionnaire. Section A measures Corporate Sustainability Performance with a total of 22 questions regarding all four dimensions of sustainability, namely, financial (4), environmental (7), social (6), and governance (5). Mediating variables of Internal Control Mechanisms were positioned in Section B and C. Section B asks about Enterprise Risk Management and Section C covers measurement of both Diagnostic and Interactive use of Management Control Systems. A total of 8 and 27 questions were asked in Section B and Section C respectively. Finally, seven questions were provided in relation to general information about the companies and demographic profile of the participant in section D.

4.6.2 Pre-testing

Pre-testing is a contributing factor in amendment and improvement the questionnaires and data gathering tools to make certain that proper questions are being asked, the accurate information would be obtained, and the data gathering procedures would be carried out well (Saunders, 2011). Therefore pretesting is undertaken for mainly to extract feedback in relation to understanding, phrasing and the design of the questionnaire. Three most famous pre-test techniques are face validity, content validity, and a pilot study. The following section will describe these pre-test procedures that this uphold study conducted.

According to Burns (1997), face validity is aimed at determining whether the respondents consider the wording of the questions comprehensive and not vague or

distracting in terms of meaning. In this context, the study tried to involve as many senior PhD students as possible to take part in this process. The primary objective of such participation was to gauge their reaction and get their comment regarding understanding, wording and general structure of the questionnaire. The study appoints the senior PhD students from the Faculty of Business & Accountancy, Faculty of Economics and Administration, and Faculty of Social Science as the participants. The questionnaire was eventually amended and adjusted according to the suggestions and feedback.

In the second phase of the pre-test, the study attempted to ensure content validity. Although the content validity was already established largely due to fact that most of the items used in the uphold study are adopted from validated instruments that are developed and applied by highly prestigious scholars. Furthermore, to solidify the validity matter, the study utilised the expert panel that was chosen mainly from the faculty members of University Malaya with relevant field expertise. The panel consists of six members which includes four academicians from Faculty of Business and Accountancy who are expert in the area of management accounting and corporate governance and two professional of Institute of Chartered Accountants of Bangladesh (ICAB) and one Fellow Cost and Management Accountant (FCMA) affiliated with CFOs regarding consultation. In this phase the questionnaire was sent to them for their valuable comments and feedback on the overall layout format, phrasing, and arrangement of the contents. More importantly they were asked to review and judge whether each item does measure the theoretical construct nominated. To get their structured comments an assessment form was attached to the questionnaire (see Table 4.7). The remarks and feedback received from the expert panel were subsequently gathered and constructively reviewed prior to the adjustments were made. Eventually, the initial instrument was further amended accordingly by adding,

removal or rephrasing of items as necessary based on useful feedback and comments received.

Table 4.7: Survey evaluation form

Corporate Sustainability Performance and Internal control Mechanisms			
Thank you for assisting by completing the questionnaire. We also want to be sure that the cover letter and questionnaire survey are clear and easy to respond to before initiating our research study. Please assist us by answering the following questions. Revisions will be made based on your suggestions.			
<i>Cover letter</i>	<i>YES</i>	<i>NO</i>	<i>Recommendations for Improvement</i>
Did the cover letter clearly indicate the purpose of the research?			
<i>Section A to Section D</i>	<i>YES</i>	<i>NO</i>	<i>Recommendations for Improvement</i>
Were the instructions for completing the sections clear?			
Were the statements written clearly?			
Were there any statements you would exclude from survey?			
If yes, please specify			
Were there any statements that would include in these sections?			
If yes, please specify			
Were the response categories understandable?			
<i>Layout of Survey</i>	<i>YES</i>	<i>NO</i>	<i>Recommendations for Improvement</i>
Did the layout of survey satisfactory?			
Did the number of pages in the survey is too many?			
How long did it take you to complete the survey? minutes			
Thank you for your time and patience.			

In the third and final phase of the pre-test, the final draft of the questionnaire was subsequently tested in a pilot study through a sample of 32 CFOs within the DSE listed companies of Bangladesh. This plays crucial role in ensuring that the questions asked were not vague and respondents fully comprehend the meaning and objectives of the survey. The respondents took 20 minutes approximately to fill in the whole questionnaire. The response gained from the pre-test is then analysed to check reliability and validity of constructs. It is

important to note that, participants who were involved in the pre-test procedure were deliberately excluded from the main survey.

4.6.3 Testing Reliability and Validity of the Measures of Pilot Study

All the independent variable constructs i.e. Board Size, Board Composition, Board Leadership, Board Ownership, Board Diversity, and Board Expertise are single item reflective measures (i.e. directly observable) using secondary data. Other than these constructs, all the others constructs used multi item reflective or formative measures using questionnaire data. The following section will show the reliability and validity of test report for all the multi-item reflective and formative constructs respectively.

4.6.3.1 Reliability measure for reflective constructs

The study uses seven multi-item reflective constructs namely Enterprise Risk Management use (ERM), Diagnostic use of MCS (DMCS), Interactive use of MCS (IMCS), Corporate Financial Sustainability Performance (CFSP), Corporate Environmental Sustainability Performance (CESP), Corporate Social Sustainability Performance (CSSP), and Corporate Governance Sustainability Performance (CGSP).

Reliability measures comes with two approaches, namely, internal consistency reliability and indicator reliability. Cronbach Alpha (CA) coefficient and Composite reliability (CR) scores are used to assess internal consistency reliability of the constructs and their specific dimensions. In effect, alpha coefficient and CR over 0.60 are accepted for the purpose of pre-test/pilot test results. In general, the cut-off point for the alpha and CR score for all the main variable is recommended at 0.70 (Nunnally, 2010). The study observes all the alpha scores and CR value exceeded the prescribed cut-off point with

minimum value (at the variable CFSP) of 0.888 and 0.923 respectively as presented in Table 4.8.

Table 4.8: Reliability and Validity Score for Pilot Study

	AVE	CR	CA	DMCS	ERM	CESP	CFSP	CGSP	IMCS	CSSP
DMCS	0.679	0.969	0.965	0.824						
ERM	0.753	0.961	0.953	0.715	0.868					
CESP	0.704	0.943	0.932	0.521	0.731	0.839				
CFSP	0.750	0.923	0.888	0.687	0.752	0.445	0.866			
CGSP	0.907	0.980	0.974	0.627	0.806	0.641	0.563	0.952		
IMCS	0.668	0.960	0.955	-0.384	-0.332	-0.431	-0.240	-0.154	0.817	
CSSP	0.704	0.934	0.918	0.541	0.554	0.577	0.613	0.479	-0.339	0.840

AVE: Average Variance Extracted, CR: Composite Reliability, CA: Cronbach's Alpha
Scores in diagonal axis refer to the square root of respective AVE score

For indicators reliability, indicators factor loading were examined. That is, if item loading value is lower than 0.7, the corresponding item would not correlate very well with the scale overall and, consequently, it may be dropped. In this study, loading scores for all the items exceeded the recommended cut-off score of 0.7 as presented except for item md8 (0.580), mi8 (0.605), and mi9 (0.598) as shown in Figure 4.2. However, the items were adopted from a well-established measurement (Kober et al., 2007), and thus, can be retained. According to Hahn et al. (2018) indicators with loadings between 0.40 and 0.70 should only be considered for removal from the scale if deleting this indicator leads to an increase in composite reliability (CR) or AVE score above the suggested threshold value otherwise should not be deleted to ensure their contribution to content validity. Hence, these three items (md8, mi8, and mi9) are retained as both CR and AVE score already achieved their threshold value.

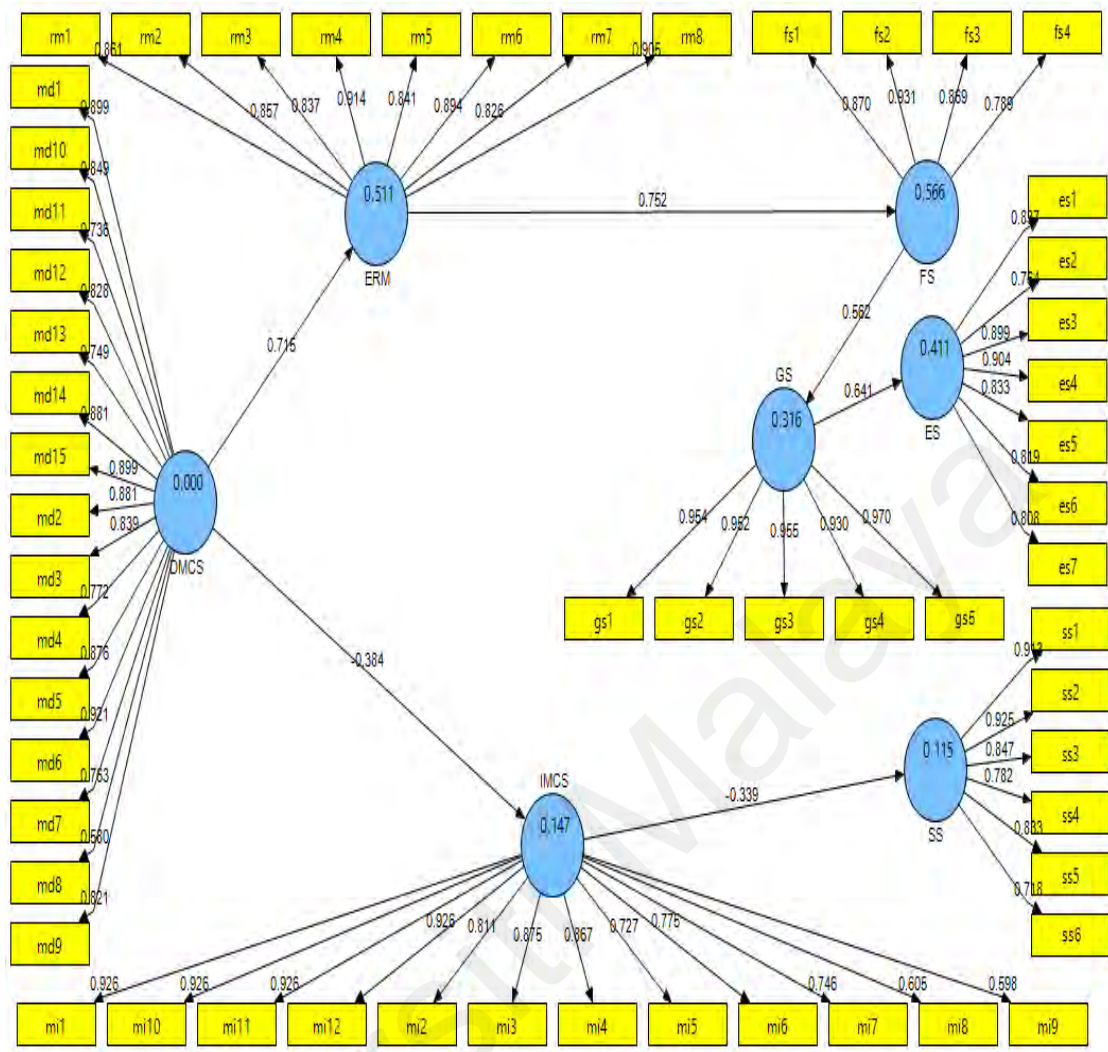


Figure 4.2: Factor loading values for pre-test

4.6.3.2 Validity measures

Construct validity is the extent to which a set of measured items actually reflect the theoretical latent construct they are designed to measure. Construct validity is made up of two important components: convergent validity (mainly measured through Average Variance Extracted/AVE) and discriminant validity (mainly measured through cross loading). The AVE score should exceed 0.5 to suggest adequate convergent validity (Bagozzi & Yi, 1988; Fornell & Larcker, 1981). This study (see Table 4.8) shows every latent constructs exceeding the cut-off score suggesting that the items are well convergent to their construct.

Discriminant validity requires items to be more correlated to its own construct rather than other constructs measured. The pre-test result confirms that the cross loading values belong to its own domain i.e. correlational values are highest in its respective constructs which indicates strong a discriminant validity for the constructs (see Table 4.9). For additional screening the Fornell & Larcker criterion for discriminant validity is also checked and found all the constructs are valid as presented in Table 4.9.

Table 4.9: Cross loading of constructs for pre-test sample

Items	ES	FS	GS	DMCS	IMCS	ERM	SS
es1	0.8372	0.2925	0.5135	0.3402	-0.2995	0.5088	0.4822
es2	0.7639	0.0622	0.3035	0.2998	-0.3861	0.3325	0.2188
es3	0.8993	0.2197	0.4928	0.413	-0.3402	0.4734	0.5237
es4	0.9041	0.2007	0.4126	0.4221	-0.4683	0.4894	0.4893
es5	0.8333	0.4291	0.4656	0.5202	-0.337	0.7374	0.4947
es6	0.8193	0.7233	0.7517	0.5736	-0.3326	0.8702	0.6261
es7	0.8081	0.3619	0.5851	0.3784	-0.4032	0.6254	0.3942
fs1	0.3117	0.87	0.5315	0.5841	-0.0501	0.6669	0.3464
fs2	0.413	0.9306	0.5035	0.6949	-0.261	0.6562	0.571
fs3	0.4219	0.8687	0.5324	0.6307	-0.2463	0.6648	0.6674
fs4	0.4014	0.7892	0.3642	0.4529	-0.2906	0.6162	0.5458
gs1	0.6291	0.5958	0.9544	0.6711	-0.1203	0.7656	0.5389
gs2	0.6681	0.4958	0.9519	0.5641	-0.2305	0.7266	0.5237
gs3	0.5844	0.5071	0.9549	0.5596	-0.084	0.7765	0.3281
gs4	0.5618	0.5647	0.9296	0.5858	-0.1301	0.8415	0.3904
gs5	0.6017	0.5096	0.9695	0.5963	-0.1674	0.727	0.4842
md1	0.3555	0.7192	0.5473	0.8991	-0.274	0.6406	0.4129
md10	0.2244	0.6792	0.5798	0.8494	-0.1789	0.6289	0.4278
md11	0.5199	0.5532	0.5299	0.7357	-0.3212	0.6058	0.5498
md12	0.1356	0.5434	0.4033	0.8284	-0.2253	0.4878	0.2431
md13	0.5191	0.6278	0.6607	0.7495	-0.4013	0.592	0.7335
md14	0.4335	0.4222	0.3685	0.8807	-0.3875	0.4965	0.2641
md15	0.3555	0.7192	0.5473	0.8991	-0.274	0.6406	0.4129
md2	0.4335	0.4222	0.3685	0.8807	-0.3875	0.4965	0.2641
md3	0.3066	0.6139	0.4576	0.8388	-0.3341	0.6306	0.4274
md4	0.5719	0.6182	0.6277	0.7717	-0.217	0.7633	0.463
md5	0.5515	0.4454	0.4641	0.8758	-0.4378	0.518	0.4427
md6	0.3607	0.5142	0.4205	0.9211	-0.3373	0.5139	0.4137

Table 4.9, continued

Items	ES	FS	GS	DMCS	IMCS	ERM	SS
md7	0.4167	0.5759	0.5	0.7631	-0.2574	0.5714	0.4452
md8	0.5642	0.256	0.5551	0.5801	-0.3314	0.3529	0.3943
md9	0.595	0.6141	0.6194	0.8207	-0.3631	0.7153	0.6423
mi1	-0.3259	-0.1622	-0.09	-0.3379	0.9261	-0.2685	-0.2486
mi10	-0.3259	-0.1622	-0.09	-0.3379	0.9261	-0.2685	-0.2486
mi11	-0.3259	-0.1622	-0.09	-0.3379	0.9261	-0.2685	-0.2486
mi12	-0.3259	-0.1622	-0.09	-0.3379	0.9261	-0.2685	-0.2486
mi2	-0.4444	-0.1986	-0.1586	-0.2838	0.8113	-0.2737	-0.2404
mi3	-0.5139	-0.2908	-0.2592	-0.488	0.8755	-0.4265	-0.359
mi4	-0.3913	-0.0119	-0.0867	-0.1749	0.8675	-0.1524	-0.1435
mi5	-0.2971	-0.2913	-0.0766	-0.2788	0.7274	-0.2332	-0.4225
mi6	-0.4012	-0.2719	-0.1042	-0.1963	0.775	-0.2647	-0.3478
mi7	-0.244	-0.207	-0.1855	-0.3049	0.746	-0.2606	-0.1958
mi8	-0.157	0.1436	0.2108	0.0893	0.6051	0.0347	0.0587
mi9	-0.2656	0.0167	0.0076	-0.1421	0.5979	-0.1329	-0.1727
rm1	0.5497	0.7197	0.6705	0.6894	-0.3033	0.8612	0.4267
rm2	0.5525	0.7638	0.7318	0.7212	-0.2641	0.8572	0.4307
rm3	0.5666	0.5849	0.5791	0.5783	-0.3127	0.8374	0.5879
rm4	0.6388	0.7234	0.7436	0.6964	-0.2544	0.914	0.5103
rm5	0.7002	0.5619	0.7141	0.5726	-0.4148	0.841	0.5094
rm6	0.6666	0.6412	0.7319	0.6075	-0.1734	0.894	0.3812
rm7	0.846	0.5687	0.635	0.4846	-0.3415	0.8256	0.6337
rm8	0.6187	0.5912	0.7723	0.5432	-0.2727	0.9054	0.4068
ss1	0.6699	0.6548	0.5228	0.5551	-0.3536	0.615	0.9134
ss2	0.6034	0.5579	0.4738	0.4447	-0.3695	0.5476	0.9254
ss3	0.384	0.4934	0.325	0.3911	-0.261	0.4056	0.8472
ss4	0.3336	0.4835	0.4156	0.5754	-0.145	0.457	0.7818
ss5	0.4275	0.4132	0.3624	0.4237	-0.2744	0.3594	0.833
ss6	0.327	0.4547	0.2576	0.4006	-0.1938	0.3433	0.7176

4.5.3.3 Validity measures for formative constructs

The study uses two formative constructs namely Corporate Sustainability Performance (CSP) and Management Control Systems (MCS). Both are higher order constructs determined by first order reflective constructs. CSP is determined by CFSP, CESP, CSSP, and CGSP. MCS is determined by DMCS and IMCS. Although validity of formative construct usually confirmed through ensuring items are selected based on a valid logical argument, hence supported by relevant literature, statistical check can be done to find

enough weight for the items and they are free from multicollinearity. As the study uses higher order formative construct the researcher first examined their first order reflective construct. The previous section finds all the first order constructs reliable and valid. Table 4.10 shows the weight and relevant significance for formative construct of CSP and MCS respectively. The results show that all the constructs has got weights which are significant at 95% confidence interval.

Table 4.10: Path coefficient (weight) and significance of formative constructs

	Weight	Standard Error	T Statistics	Significance
DMCS -> MCS	0.789	0.0451	17.5161	Significant
IMCS -> MCS	-0.394	0.0475	8.296	Significant
ES -> CSP	0.431	0.0259	16.6398	Significant
FS -> CSP	0.179	0.013	13.7934	Significant
GS -> CSP	0.304	0.0134	22.7175	Significant
SS -> CSP	0.308	0.0232	13.2682	Significant

The other important thing is to examine multicollinearity of constructs used for CSP and MCS. Table 4.11 shows that the mean score of all the items used for DMCS, IMCS, CFSP, CESP, CSSP, and CGSP are free from multicollinearity issue (VIF score is less than 3).

Table 4.11: Multicollinearity Statistics for pre-test analysis

	Collinearity Statistics	
	Tolerance	VIF
Diagnostic Use of MCS (DMCS)	0.384	2.607
Interactive Use of MCS (IMCS)	0.466	2.147
Corporate Financial Sustainability Performance (CFSP)	0.405	2.468
Corporate Environmental Sustainability Performance (CESP)	0.433	2.308
Corporate Social Sustainability Performance (CSSP)	0.712	1.405
Corporate Governance Sustainability Performance (CGSP)	0.512	1.955

4.7 Data Collection

4.7.1 Data Collection Procedure

The study carried out data collection in two stages, namely, questionnaire survey and web survey. Questionnaire survey was conducted to collect primary data on ERM use, MCS use, and CSP followed by a web survey intended to collect secondary available data on board of directors' characteristics and control variables.

At the first stage, survey questionnaires (in English, see Appendix A for detail) supplemented by a cover letter were posted to the Chief Financial Officers (CFO) of the 266 companies within Dhaka Stock Exchange (DSE) in Bangladesh. Prior to the mailing of the survey, the companies were contacted first to inquire whether they would like to participate in the research. Moreover, CFOs were called or emailed in advance to get their sincere attention to the questionnaire they are going to receive shortly. The CFOs particulars are listed in the CFO directory which was obtained from Bangladesh CFO forum (CFO BD Forum). A self-addressed reply-paid envelope with sufficient postage was also enclosed with the questionnaires. Proper labelling was made to ensure that replied questionnaire can be identified with company name which is used later for matching web survey data. This data collection scheme was started in the mid-July 2017. The respondents were encouraged and requested to answer and return the questionnaire within 2-3 weeks after its delivery. After a period of one month, an ensuing telephone call was made and a follow-up reminder letter was sent to all who had not returned the questionnaires. In order to increase the response rate, non-respondent subjects were stimulated by one additional follow-up notification letter following questionnaire beginning at mid-August. Consistent with the first stage of data collection, an appeal was made to the respondents to answer and return the questionnaire within 2 to 3 weeks.

For the secondary data which were collected through a web survey, a proper matching was done to ensure that the companies were the same. In doing this, once a completed survey questionnaire was returned from a particular company, it is duly checked for acceptability (whether over 25 percent questions were answered or not). If it is acceptable, the web survey on the annual report was performed to obtain the secondary data on this same company.

4.7.2 Response Rate

The overall data collection process started in mid-July 2017 and concluded in mid-October 2017 for three months. Hence, in mid-July, the first stage of data collection started by circulating the questionnaires to 266 firms. It is intentionally left unaddressed from all the 298 companies listed in the DSE 32 companies which participated in the pre-test phase. By mid-August 2017 roughly 23 percent (69 respondents) of the 266 questionnaires were returned. Afterwards the second stage of data collection was conducted in the face of relatively low response rate. In this respect, in mid-August 2017 197 questionnaires along with a letter of reminders were again posted to the non-responding firms. Consequently a further 115 answers were collected, eventually reaching a total of 184 questionnaires. Nonetheless, eighteen questionnaires were entirely scrapped, as they were virtually unusable due to the inadequate answers and flaws in labelling the sample types. Therefore, a total of 166 replies with a response rate of 62.4 per cent were deemed available. Such 166 answers were then used by the end of October 2017 for data analysis. Table 4.12 shows the details of the data collection.

Table 4.12: Response Rate analysis for the study

Description	Number	%
Total target respondents	266	100
First Phase:		
Total questionnaire distributed in July 2017	266	100
Total responses received by August 2017	69	25.94
Less: Unusable responses	5	
Total usable responses by August 2017	64	24.06
Second Phase:		
Total questionnaire distributed (for non-responding firm) in August 2017	197	100
Total responses received by October 2017	115	58.38
Less: Unusable responses	13	
Total usable responses by October 2017	102	51.78
Total	166	62.41

4.8 Chapter Summary

This chapter discusses the research process for the study by designing the appropriate methodology which includes careful preparation of research design, measurement of constructs, and designing questionnaire for data collection. In nutshell this chapter elaborates the detailed procedures of conceptualizing constructs and developing their measurement scales, survey design while ensuring reliability and validity of constructs through pre-testing and pilot survey. The chapter concludes by presenting data collection steps and response rate followed by summary of the chapter.

CHAPTER 5: DATA ANALYSIS AND RESULTS

5.1 Chapter Preview

Following the previous chapter which elaborates methodology of data collection and survey design, this chapter aims at presenting detailed procedures of data analysis techniques used to test the hypotheses of this study. This chapter explains the steps taken for data analysis which include biasness analysis, assessing assumptions of multivariate analysis, and assessment of model. Assessment of model includes assessment of measurement model and structural model. The chapter then assesses mediation effect followed by control effect analysis.

5.2 Data Analysis Techniques Used

Apart from Microsoft Excel, two other statistical software programs were employed to analyse the data collected in this study. Microsoft Office Excel was used for the initial input. SPSS V21 was used for data cleaning such as dealing with missing values and outliers, descriptive statistics, initial reliability and validity measures. The partial least square (PLS) Structural Equation Modelling (SEM) analysis software SMART PLS V2.0 M3 was employed for confirmatory factor analysis, hypotheses testing and other additional analysis.

The PLS-SEM is preferred over other statistical program because it is especially designed for prediction in a complex structural equation models with a large number of constructs without demanding large sample size (Urbach & Ahlemann, 2010). However, before explaining the other reasons for using PLS-SEM, it is necessary to explain the general SEM concept and PLS path modelling.

The SEM is considered as the second generation multivariate data analysis method that gains popularity among social scientist because of its ability in testing theoretically supported and additive causal models (Chin, 1998; Haenlein & Kaplan, 2004). There is a significant difference in the techniques used to analyze the model in the first and second generation analyses. First generation statistical tools (regression models) analyze only one level of linkage between independent and dependent variables at a time and separate unrelated analyses are required (Anderson & Gerbing, 1988; Gerbing & Anderson, 1988). However, second generation statistical tools (SEM) enables researchers to answer a set of interrelated research questions in a single, systematic and comprehensive analysis by modelling the relationships among multiple independent and dependent constructs simultaneously and present a more complete picture of the entire model (Blalock Jr & Costner, 1969; Hanushek & Jackson, 1977). The ability to test multiple regression models or equations simultaneously made SEM extremely popular in social sciences disciplines such as accounting, marketing, strategic management, and management information systems (Gefen, Straub, & Boudreau, 2000). To sum up, the study preferred SEM techniques for the following reasons:

- a. Compared to first generation techniques it takes a confirmatory rather than exploratory analysis
- b. Traditional methods incapable of either assessing or correcting for measurement errors
- c. Traditional methods use observed variables while SEM can use both unobserved (latent) and observed variables
- d. SEM can test one complete and complex model simultaneously

There are two different variations of SEM analysis, namely, Covariance-based SEM (CB-SEM) and Partial Least Square SEM (PLS-SEM). Each technique serves different

purposes of analysis. Covariance-based SEM (CB-SEM) is objected to reproduce the theoretical covariance matrix without focusing on the explained variance (Hair Jr, Hult, Ringle, & Sarstedt, 2017). CB-SEM focuses on minimizing the difference between the theoretical matrix (framework/model) and empirical covariance matrix (data). The goodness-of-fit between theoretical matrix and empirical covariance matrix is the primary concern. On the other hand, the objective of PLS-SEM is to maximize the explained variance of the endogenous latent constructs (dependent variables) (Hair et al 2014). The estimation procedure for PLS-SEM is an ordinary least square (OLS) regression-based method whereas the estimation procedure for CB-SEM is the maximum likelihood (ML). In light of this, the main objective for PLS-SEM analysis is to estimate coefficient (path coefficient) that maximizes the R^2 values of the target endogenous constructs. PLS-SEM and CB-SEM can be contrasted in different perspectives and rules of thumb for selecting between them are shown in Table 5.1 (Hair, Ringle, & Sarstedt, 2011).

Table 5.1: PLS-SEM vs CB-SEM: which one is appropriate? (Adapted from Hair et al. (2011))

Criteria	PLS-SEM	CB-SEM
Research goals	If the goal is predicting key target construct or identifying key driver	If the goal is to test theory or to compare a theory with an alternative theory
Measurement model specification	If formative measured constructs are a part of the structural model	If error terms require additional specification, such as co-variation
Structural model	If the structural model is complex (many constructs and many indicators)	If the model is non-recursive

Table 5.1, continued

Criteria	PLS-SEM	CB-SEM
Data characteristics and algorithm	<ul style="list-style-type: none"> • If CB-SEM cannot be met (i.e. model specification, non-convergence, data distributional assumptions) • If the sample size is relatively low • If data to some extent non-normal 	If data meet the CB-SEM assumption exactly
Model evaluation	If latent variable scores are required in subsequent analysis	<ul style="list-style-type: none"> • If a global goodness-of-fit criterion is required • If a test for measurement model invariance is required

Many scholars argue that decision between these approaches is simply whether to use SEM for theory testing and development (use CB-SEM) or for predictive applications (use PLS-SEM). In situations where prior theory is strong and further testing and development are the goal, CB-SEM is more appropriate. In contrast, when phenomenon under research is relatively new or changing, or when the theoretical model or measure is not well formed, a PLS approach is often more suitable (Anderson & Gerbing, 1988; Chin, 1998). In addition, (Chin, 2010) states ‘there are other instances beyond initial exploratory stages that PLS is well suited’ (p. 660). Some unique features of PLS-SEM made it an inevitable choice for this study. The justifications for using PLS in this study can be summed up as follows:

- a. PLS can be applied to complex structural equation model with a large number of latent variables (LV) and indicator variables. This study model is considered complex with a seven latent variables (LVs), six observed variables and 57 indicator variables for seven LVs.

- b. Relationships between the indicators and LVs are modelled in different modes
i.e. both formative and reflective models have been applied. PLS is able to handle both reflective and formative constructs
- c. The study sample size is relatively small (166 cases) and the data are not normally distributed to some extent, thus, violating the CB-SEM assumptions. PLS, on the other hand, does not demand either large sample size or normally distributed input data.

5.3 Data Preparation for Data Analysis

5.3.1 Data Coding

The data is input into an excel sheet initially once it is obtained through the questionnaires. In this regard, a categorization scheme was set up and the data was coded afterwards (see Table 5.2). Subsequently, the missing values were handled followed by keying the data into the software program. It is noteworthy, only the data obtained through questionnaire are coded due to the fact that these data are in most cases qualitative in nature i.e., not directly observable and require codification (putting numbers for each particular answer) for transferring into any statistical program. On the other hand, data collected from secondary sources i.e., board of directors and firm characteristics, are directly observable and quantitative in nature which requires no additional effort for transformation.

Table 5.2: Data Coding and Categorization Scheme applied in the Study

Variable/Item Name	Category	Code
Part One: Corporate Sustainability Performance		
Corporate Financial Sustainability Performance	Significantly below average	1
	Quite below average	2
	Slightly below average	3
	Average	4
	Slightly above average	5
	Quite above average	6
	Significantly above average	7
Corporate Environmental Sustainability Performance	Significantly below average	1
	Quite below average	2
	Slightly below average	3
	Average	4
	Slightly above average	5
	Quite above average	6
	Significantly above average	7
Corporate Social Sustainability Performance	Significantly below average	1
	Quite below average	2
	Slightly below average	3
	Average	4
	Slightly above average	5
	Quite above average	6
	Significantly above average	7
Corporate Governance Sustainability Performance	Significantly below average	1
	Quite below average	2
	Slightly below average	3
	Average	4
	Slightly above average	5
	Quite above average	6
	Significantly above average	7
Part Two: Enterprise Risk Management (ERM) Use		
ERM use	Strongly disagree	1
	Quite disagree	2
	Slightly disagree	3
	Neither disagree nor agree	4
	Slightly agree	5
	Quite agree	6
	Strongly agree	7

Table 5.2, continued

Variable/Item Name	Category	Code
Part Three: Management Control Systems (MCS) Use		
Diagnostic Use of MCS	Not at all	1
	To a Very Small Extent	2
	To a Small Extent	3
	To a moderate extent	4
	To a fairly great extent	5
	To a great extent	6
	To a very great extent	7
Interactive Use of MCS	Strongly disagree	1
	Quite disagree	2
	Slightly disagree	3
	Neither disagree nor agree	4
	Slightly agree	5
	Quite agree	6
	Strongly agree	7
Part Four: Respondent Profile		
Gender	Male	1
	Female	2
Education Level	Diploma	1
	Bachelors	2
	Masters	3
	PhD	4
Professional Certification	No degree	1
	Accounting degree	2
	Other business degree	3
Age	Below 40	1
	40 – 49 years	2
	50 – 59 years	3
	60 and above	4
Work Experience	Less than 3 years	1
	3 – 5 years	2
	More than 5 years	3

5.3.2 Data Matching

As we already discussed earlier, this study uses data from two different sources. Data on ERM use, MCS use, and CSP are collected from primary source while data on board of directors characteristics and firm characteristics (firm size, industry etc.) are collected from secondary sources. Therefore there remains a potential risk of data miss-match. To enable

analysing data from different sources, obtained data must match their time frame and unit of analysis. To ensure data match the study carefully collected the primary data and input them into excel sheet first and take note of the respondent (specific code number is used to trace the respondent). The study proceeds with valid primary data through primary checking of usability. While these data were already input on excel sheet, the secondarily available data were obtained and input matching the respondent. Web based data were input into same sheet immediately after input of questionnaire data to avoid any mismatch and confusion. Thus the study ensures matching of unit of analysis. Questionnaire represents for a particular point of time data while secondary data may vary within a period of time. So the study applies secondary data (board characteristics) within the data collection period (July 2017 – October 2017) to best match the data sources in respect of time frame.

5.3.3 Data Screening and Checking

Prior to analysing the data, it is essential to check data set for errors or any outliers; the data must be free from errors otherwise it affects the results later on (Pallant, 2016). The technique used is ‘winsorising’ for data cleaning process. ‘Winsorising’ is named after the engineer-turned-biostatistician Charles P. Winsor (1895-1951) whose proposed technique got immense popularity in transforming statistics by reducing effect of possibly spurious outliers. In this case the effect is the same as clipping in signal processing. For normal samples, winsorised means are more stable than trimmed means (Dixon, 1960).

The distribution of many statistics can be heavily influenced by outliers. To deal with outliers there are two popular methods i.e. trimming and winsorising. Trimming is often criticized for its approach of deleting cases as it often reduce the number of cases while with similar effect winsorised estimators are usually more robust to its outliers (Dixon, 1960; Hastings Jr, Mosteller, Tukey, & Winsor, 1947). In winsorisation it sets all outliers

to a specified percentile of the data, for example for 90% winsorisation will set data below the 5th percentile to the 5th percentile, and data above the 95th percentile to the 95th percentile (Brillinger, 2002; Westfall & Henning, 2013). The study chooses this approach over trimming as to maintain the number of response without deleting any case.

5.4 Response Bias Analysis

There was an overwhelming need to examine the response and non-response prejudice due to the fact that many questionnaires stayed unanswered and only 166 out of 266 questionnaires were returned within the stipulated time frame (62.4 per cent response rate). According to Armstrong and Overton (1977), examining the presence of discrepancies between early and late responses that identify possible bias in answer that treats late responses as proxies for non-respondents. Since this study's data collection protocol was carried out in two early and late phases, an unbiased sample t-test was used to verify the sample's representativeness. Tagged as category one (early response) were the community of 64 respondents who engaged in the first step of data collection. On the other side, category two were those respondents who took part in the second data collection process and were called 'late response'. In determining non-response prejudice, late respondents are perceived to be a surrogate for non-respondents according to the "continuum of resistance model" (Lahaut et al., 2003). For this cause, category two of 102 respondents (latest responses) is viewed as substitutes of those who did not participate in the first step of data collection. In carrying out the t-test, this analysis viewed all main variables as test variables. Table 5.3 summarizes the results of the t-test while details are presented in Appendix B.

Table 5.3: Response Rate Bias Analysis for the Study

Variables	Mean			t-value	Significance
	Early	Late	Difference		
Enterprise Risk Management	4.783	5.023	-0.240	-1.323	0.188
Diagnostic Use of MCS	4.900	5.079	-0.179	-0.998	0.320
Interactive Use of MCS	4.329	4.757	-0.428	-1.939	0.054
Corporate Financial Sustainability Performance	4.734	4.876	-0.141	-0.682	0.497
Corporate Environmental Sustainability Performance	4.531	4.564	-0.033	-0.167	0.868
Corporate Social Sustainability Performance	4.675	4.716	-0.041	-0.217	0.829
Corporate Governance Sustainability Performance	4.676	4.917	-0.241	-1.315	0.190
The mean difference is significant at $P < 0.05$					

The result indicated that the mean of all the variables for the two groups of respondents were relatively close and the difference is minimal. In this case, using t statistics, we can conclude that there was not any significant difference between early and late respondents in terms of the main variables.

5.5 Profiles of Responding Companies and Respondents

Based on frequency distributions and mean values, Table 5.4 and Table 5.5 show profile of responding companies based on type of industry, number of employees, asset, and market capitalization. Table 5.6 covers demographic profile based on the individual

respondent which includes gender, age, education level, professional degree, and employment with the company (years of working experience).

Table 5.4: Responding companies by sector

SL	Name of the sector	Total	%
1	Bank	21	12.65
2	Cement	3	1.81
3	Ceramics Sector	2	1.20
4	Engineering	21	12.65
5	Financial Institutions	15	9.04
6	Food & Allied	10	6.02
7	Fuel & Power	10	6.02
8	Insurance	27	16.27
9	IT Sector	4	2.41
10	Jute	1	0.60
11	Paper & Printing	1	0.60
12	Pharmaceuticals & Chemicals	19	11.45
13	Services & Real Estate	2	1.20
14	Tannery Industries	3	1.81
15	Telecommunication	1	0.60
16	Textile	25	15.06
17	Travel & Leisure	1	0.60
	Total	166	100.0

Table 5.5: Responding companies by size

	N	Minimum	Maximum	Mean	Std. Deviation
Asset*	166	92.98	797926.56	43923.1269	99140.47823
Employee	166	40	9000	791.00	1501.582
Market Capitalization*	166	120.91	562940.08	15462.9084	49166.44522

*Values are in Million BDT

Table 5.6: Respondent's demographic profile

Profile	Category	Frequency	Percent
Gender	Male	153	92.2
	Female	13	7.8
	Total	166	100.0
Education	Diploma	1	.6
	Degree	6	3.6
	Masters	158	95.2
	PhD	1	.6
	Total	166	100.0
Professional Qualification	No Degree	1	.6
	CA/CMA	154	92.8
	Other (CS, CFA etc.)	11	6.6
	Total	166	100.0
Age	Below 40	9	5.4
	40-49	68	41.0
	50-59	86	51.8
	60 and above	3	1.8
	Total	166	100.0
Experience	Less than 3 years	60	36.1
	3 - 5 years	73	44.0
	Over 5 years	33	19.9
	Total	166	100.0

Table 5.4 shows that the majority of the companies were from financial sector (including bank, non-bank financial institution, and insurance) which accounts approximately 40 percent and followed by textile sector (over 15 percent). Notably, pharmaceuticals & chemicals sector also holds significant stake with approximately 11 percent of respondent companies. Regarding the number of employees, with an average employment of 791, the respondents firm varies from 40 to 9000 full time employees. Moreover, average asset is approximately 44,000 million taka and average market capitalization is slightly over 15,000 million taka (see Table 5.5)

As demonstrated in Table 5.6, the respondents were more male (92.2%) compared to female (7.8%). This percentage of male and females is representative of the current number

of managers in Bangladeshi companies where most of them were males. With respect to education level, most (95.8%) of the respondents held postgraduate degrees, while 3.6% of respondents held undergraduate degrees. Moreover, 99.4% respondents have at least an accounting or other business professional qualification. This indicates that the respondents were highly educated which is reflective of the positions held by them. For age-wise, more than half (51.8%) of the respondents were between 50-59 years old. The age group of 40-49 years old was next most in terms of proportion with 41 percent of the total respondents while the age group 60 and above years old was the least with 1.8%. An examination of the respondents' years of employment with their present company indicated that almost half (44%) of respondents having 3-5 years of experience in their companies. A large proportion (64.9%) of respondents has over three years of experience. These figures demonstrate that the respondents are familiar with the company's processes and business environment. Hence, they have the relevant knowledge to answer the questionnaire which results later in a more reliable analysis.

5.6 Testing the Assumptions of Multivariate Analysis

As explained earlier, the PLS approach is quite resilient against the skew distributions of manifest variables, multicollinearity between blocks of manifest variables and between latent variables, and the structural model misspecification. In other terms, PLS is able to model linear relations without the limitations of the other structural equation models and under conditions of non-normality and low to medium sample sizes (Chin, Marcolin, & Newsted, 2003). However, in general multivariate analysis has got few assumptions which may affect generalizability of result. Therefore, the test of assumptions should be done to avoid detrimental effect of using of multivariate statistical methods (Hair Jr et al., 2017). Hair Jr et al. (2017) suggested that test of several assumptions regarding the utilisation of

multivariate statistical tools, namely normality, homoscedasticity, linearity, and multicollinearity should be performed before applying any multivariate analysis.

5.6.1 Test of Normality

Hair Jr et al. (2017) noted that normality relates to the shape of the data distribution for an individual metric variable and its relationship to the normal distribution. Assessment of the variables' levels of skewness and kurtosis is one of the methods that will determine Normality. In fact, Skewness provides an indication of the symmetry of the distribution. Kurtosis turns to the peakedness or flatness of the distribution relative to the normal distribution (Hair Jr et al., 2017). This analysis checks for the symmetric existence and peakedness / flatness of the data set using the form descriptors, skewness and kurtosis, respectively, in this context. The acceptable level of skewness (the symmetry of a distribution) and kurtosis (the clustering of scores towards the middle of a distribution) for a given variable can be contained in a variety of opinions. (Adams & Lawrence, 2018). The skew value for the measuring item varies from -0.081 to -0.876, is well within the recommended range from -1 to + 1 (Adams & Lawrence, 2018; Hair Jr et al., 2017). The kurtosis value for the spectrum of measuring items from -0,273 to + 1,672 is well within the recommended range from -2 to + 2 (Adams & Lawrence, 2018). As such, the study suggests that this finding has normal distribution data exposed. Appendix C demonstrates the examination of skewness and kurtosis of all items of the constructs i.e. DMCS, CFSP, CESP, CSSP, and CGSP.

Histogram is another method to use for comparing the observed data values with a distribution approximating the normal distribution. It is argued that the histogram of the research variables supports the expectation for the normal shape distribution of data. Appendix C shows all histograms generated for study variables.

5.6.2 Test of Homoscedasticity

Homoscedasticity relates to the assumptions that dependent variable explaining equal levels of variance across the range of independent variables. Test of homoscedasticity is required because the variance of the dependent variable being explained in the dependence relationship could not be focus in simply a limited range of the independent values. Consistent with Adams and Lawrence (2018) and Hair Jr et al. (2017), this study tested the homoscedasticity for metric variables using scatterplot. Scatter plots of standardised residual was conducted for all the variables and the outcomes from the data were shown in Appendix C. In effect, the scatterplot showed that the pattern of data points does not contain any exact patterns and thus had not violated the assumptions (e.g., no discernible patterns of residuals were indicated).

5.6.3 Test of Linearity

This study performed series of simple linear regression analysis and the residuals using Normal Probability P-P Plot to examine linearity. The results for linearity assumptions are shown in Appendix C. It was indicated that the points to be approximately a straight line surrounding the diagonal axis so as not to infringe the assumptions on the randomness of the residuals.

5.6.4 Test of Multicollinearity

Multicollinearity occurs when two or more of the independent variables are highly correlated that certain mathematical operations are impossible (Adams & Lawrence, 2018; Hair Jr et al., 2017). In other words, multicollinearity is a state of very high inter-correlations or inter-associations among the independent variables. It is therefore a type of disturbance in the data, and if present in the data the statistical inferences made about the data may not be

reliable. However, multicollinearity can be detected with the help of tolerance and its reciprocal, called variance inflation factor (VIF). If the value of tolerance is less than 0.1 and, simultaneously, the value of VIF 10 and above, then the multicollinearity is problematic (Adams & Lawrence, 2018). The data is free from multicollinearity as the tolerance values and VIF of this study is acceptable as seen in Table 5.7.

Table 5.7: Multicollinearity Analysis for the Study

Variables	Tolerance	VIF
Enterprise Risk Management	0.338	2.961
Diagnostic Use of MCS	0.290	3.446
Interactive Use of MCS	0.824	1.214
Corporate Financial Sustainability Performance	0.459	2.179
Corporate Environmental Sustainability Performance	0.486	2.057
Corporate Social Sustainability Performance	0.365	2.737
Corporate Governance Sustainability Performance	0.363	2.756

5.7 Assessment of Measurement Model

Similar to other structural equation modelling techniques, a two-step process is typically utilized in PLS (Chin, 1998, 2010; Chin et al., 2003; Hair, Sarstedt, Ringle, & Mena, 2012; Hair Jr et al., 2017). At the beginning the measurement model is tested along the same lines as factor analysis and unidimensionality measures. The next step is an evaluation of the structural model with the goal of presenting path coefficients that illustrate each variable's associations. The measurement model estimate includes factor loadings and reliability metrics from items to latent constructs whereas the structural model evaluation shows the direction coefficients for significant effects on the construct relationships. Unlike covariance-based SEM, the value of Path Coefficients in PLS-SEM can only be calculated using a Bootstrapping process or Jack-knifing options. This study used the Bootstrapping technique for the data analysis.

5.7.1 Assessing Independent variables

The study conceptualizes its independent variables (board of directors' characteristics) as directly observed exogenous constructs in the SEM model. While for using them in SMART PLS model they are used as single item reflective constructs because of the program's constraint in using directly observed variables. The six exogenous constructs descriptive statistics are tabulated in Table 5.8.

Table 5.8: Descriptive Statistics for Independent Variables

Construct(s)	Measurement(s)	N	Minimum	Maximum	Mean	Standard Deviation
Board Ownership	Percentage of share held by Board Members	166	0.00	0.92	0.38	0.190
Board Size	Total number of members in the board	166	4	22	10.08	4.620
Board Composition	Ratio of outside directors to total directors	166	0.05	0.88	0.23	0.150
Board Diversity	Number of female board members	166	0	12	1.72	1.919
Board Expertise	Number of board members holding professional degree	166	0	6	0.93	1.243
Board Leadership	CEO duality: Chairman of the board is also the CEO	166	0	1	0.05	0.215

Table 5.8 shows that all mean scores are normal and matches the expectation. Most standard deviation scores are less than 2. However board size shows relatively high standard deviation (4.62). This may be due to the fact that the minimum number for the board is too low (4) while the maximum number is also large (24) which yield a high range (20). It is also noteworthy that all the constructs of independent variable are observed constructs. For the analysis purpose in PLS-SEM they are depicted as single item latent

constructs. Therefore, reliability and validity statistics i.e. Cronbach's alpha, CR statistics are irrelevant to produce or assess (Hair Jr et al., 2017).

5.7.2 Assessing Mediating Variables

The study uses two mediating variables, namely, Enterprise Risk Management (ERM) use and Management Control Systems (MCS) use. While ERM use is conceptualized as first order reflective construct, MCS use is a higher order formative construct. Table 5.9 summarizes the descriptive statistics and reliability statistics for ERM use.

Table 5.9: Descriptive statistics and reliability statistics for 'ERM use'

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach's Alpha	Composite Reliability
rm1	4.91	1.357	0.853	0.806	0.9486	0.9571
rm2	4.98	1.326	0.894	0.855		
rm3	4.87	1.305	0.889	0.850		
rm4	4.93	1.342	0.877	0.835		
rm5	4.90	1.345	0.844	0.791		
rm6	5.01	1.277	0.853	0.806		
rm7	4.84	1.403	0.801	0.740		
rm8	5.02	1.291	0.851	0.802		

The study adopted all the items of ERM construct from the COSO ERM framework and expected high reliability score. The above table evident the match of expectation. The minimum factor loading is 0.801 for item **rm7** and for the same item the item-total correlation score is 0.740. However, acceptable score for factor loading and item-total correlation score is 0.7 and 0.5 respectively (Chin et al., 2003; Hair Jr et al., 2017). Moreover, Cronbach's alpha and CR statistics are over 0.9 which confirms the reliability of the construct 'ERM use'.

In similar fashion, the assessment of the other mediating construct 'MCS use' also found reliable. As it was discussed in the previous chapter that 'MCS use' is a second order formative construct and it is formed with two first order reflective constructs 'Diagnostic

use of MCS’ and ‘Interactive use of MCS’. Before assessing the reliability of the construct ‘MCS use’ it is important to assess the reliability statistics for its two first order constructs. The Table 5.10 and Table 5.11 summarize the descriptive and reliability statistics for the constructs ‘Diagnostic use of MCS’ and ‘Interactive use of MCS’ respectively.

Table 5.10: Descriptive statistics and reliability statistics for ‘Diagnostic use of MCS’

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach’s Alpha	Composite Reliability
md1	5.05	1.424	0.837	0.811	0.964	0.968
md2	4.98	1.421	0.904	0.885		
md3	5.10	1.376	0.850	0.823		
md4	5.20	1.272	0.787	0.754		
md5	5.17	1.342	0.843	0.816		
md6	5.04	1.339	0.803	0.772		
md7	4.96	1.366	0.805	0.772		
md8	4.89	1.355	0.729	0.692		
md9	4.90	1.294	0.801	0.769		
md10	5.07	1.349	0.784	0.749		
md11	5.03	1.373	0.808	0.776		
md12	4.80	1.421	0.765	0.729		
md13	4.84	1.428	0.776	0.743		
md14	5.02	1.465	0.894	0.872		
md15	5.10	1.471	0.834	0.806		

Table 5.11: Descriptive statistics and Reliability statistics for ‘Interactive use of MCS’

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach’s Alpha	Composite Reliability
mi1	4.52	1.621	0.929	0.912	0.963	0.967
mi2	4.61	1.726	0.846	0.814		
mi3	4.57	1.766	0.862	0.834		
mi4	4.67	1.681	0.814	0.780		
mi5	4.64	1.652	0.791	0.753		
mi6	4.54	1.665	0.803	0.764		
mi7	4.60	1.702	0.801	0.763		
mi8	4.66	1.602	0.805	0.761		
mi9	4.81	1.549	0.717	0.665		
mi10	4.49	1.639	0.916	0.896		
mi11	4.50	1.628	0.921	0.901		
mi12	4.49	1.610	0.919	0.900		

Table 5.10 and Table 5.11 clearly show that all the scores of reliability statistics overpass the minimum cut-off values. For example, Table 5.10 reveals that minimum factor loading score for the first order construct ‘Diagnostic use of MCS’ is 0.729 for the item **md8** with respective item-total correlation value of 0.692. In addition to that Cronbach’s alpha and CR statistics are 0.964 and 0.968 respectively. Table 5.11 shows that minimum factor loading score for the first order construct ‘Interactive use of MCS’ is 0.717 for the item **mi9** with respective item-total correlation value of 0.665. In addition to that Cronbach’s alpha and CR statistics are also over 0.9. These examination confirms reliability of first order constructs of ‘MCS use’. Now in next step weight and significance of those first order constructs to ‘MCS use’ is examined. In consequence the multicollinearity statistics are also checked to ensure that any significant relationship found is not due to inter-correlation or inter-associations among the first order constructs. Table 5.12 and Table 5.13 summarizes the results for the aforementioned statistical steps.

Table 5.12: Assessing path weight and significance for the formative construct ‘MCS use’

Path	Path Coefficient/ Weight	Standard Error	T Statistics	Comment
DMCS -> MCS	0.766	0.058	13.250	Significant
IMCS -> MCS	0.417	0.054	7.745	Significant

Table 5.13: Multicollinearity statistics for the formative construct ‘MCS use’

Items/Variables	Collinearity Statistics	
	Tolerance	VIF
Diagnostic use of MCS (DMCS)	0.860	1.162
Interactive use of MCS (IMCS)	0.860	1.162

Table 5.12 confirms that both the weight and t-statistics are well above the acceptable score at 95% confidence interval. In addition to that, according to Hair Jr et al. (2017) it detects no multi-collinearity among the constructs ‘Diagnostic use of MCS’ and

‘Interactive use of MCS’. Therefore the reliability and validity of mediating construct ‘MCS use’ is statistically acceptable.

5.7.3 Assessing Dependent Variable

The CSP is also a second order formative construct which considers four first order reflective constructs as its indicators. The study follows the same steps which is applied for assessing reliability and validity of the mediating construct ‘MCS use’. The four first order reflective constructs are assessed first to ensure their factor loading, item-total correlation, Cronbach’s alpha, and composite reliability scores are above the cut-off point. Table 5.14, Table 5.15, Table 5.16, and Table 5.17 summarize the statistics for ‘Corporate Financial Sustainability Performance’, ‘Corporate Environmental Sustainability Performance’, ‘Corporate Social Sustainability Performance’, and ‘Corporate Governance Sustainability Performance’ respectively.

Table 5.14: Descriptive statistics and Reliability statistics for ‘Corporate Financial Sustainability Performance’

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach’s Alpha	Composite Reliability
fs1	4.74	1.505	0.898	0.788	0.901	0.938
fs2	4.83	1.421	0.928	0.833		
fs3	4.89	1.339	0.914	0.789		

Table 5.15: Descriptive statistics and Reliability statistics for ‘Corporate Environmental Sustainability Performance’

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach’s Alpha	Composite Reliability
es1	4.17	1.579	0.856	0.801	0.915	0.932
es2	4.52	1.679	0.800	0.738		
es3	4.47	1.508	0.838	0.771		
es4	4.69	1.590	0.803	0.727		
es5	4.63	1.390	0.864	0.795		
es6	4.81	1.451	0.792	0.713		
es7	4.57	1.495	0.744	0.637		

Table 5.16: Descriptive statistics and Reliability statistics for ‘Corporate Social Sustainability Performance’

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach's Alpha	Composite Reliability
ss1	4.90	1.381	0.806	0.690	0.903	0.929
ss2	4.78	1.427	0.898	0.827		
ss3	4.57	1.368	0.782	0.668		
ss5	4.64	1.380	0.893	0.824		
ss6	4.60	1.353	0.865	0.787		

Table 5.17: Descriptive statistics and Reliability statistics for ‘Corporate Governance Sustainability Performance’

Items	Mean	Std. Dev	Factor Loading	Item-total Correlation	Cronbach's Alpha	Composite Reliability
gs1	4.93	1.234	0.904	0.818	0.909	0.936
gs2	4.77	1.310	0.859	0.733		
gs4	4.81	1.344	0.879	0.794		
gs5	4.79	1.306	0.904	0.834		

Table 5.14 shows that minimum factor loading score for the first order construct ‘Corporate Financial Sustainability Performance’ is 0.898 for the item **fs1** with respective item-total correlation value of 0.788. In addition to that Cronbach’s alpha and CR statistics are 0.901 and 0.938 respectively. Table 5.15 reveals that minimum factor loading score for the first order construct ‘Corporate Environmental Sustainability Performance’ is 0.744 for the item **es7** with respective item-total correlation value of 0.637. In addition to that Cronbach’s alpha and CR statistics are 0.915 and 0.932 respectively. Table 5.16 reveals that minimum factor loading score for the first order construct ‘Corporate Social Sustainability Performance’ is 0.781 for the item **ss3** with respective item-total correlation value of 0.668. In addition to that Cronbach’s alpha and CR statistics are 0.903 and 0.928 respectively. Table 5.17 reveals that minimum factor loading score for the first order construct ‘Corporate Governance Sustainability Performance’ is 0.859 for the item **gs2** with respective item-total correlation value of 0.733. In addition to that Cronbach’s alpha and

CR statistics are 0.909 and 0.936 respectively. In summary all the first order constructs is well above the cut off values.

In next step, the weight and significance of the four first order constructs to corporate sustainability performance is assessed. The results are shown in Table 5.18 which shows that all the first order constructs are significantly associated to their higher order construct.

Table 5.18: Assessing path weight and significance for the formative construct ‘Corporate Sustainability Performance (CSP)’

Path	Path Coefficient/ Weight	Standard Error	T Statistics	Comment
CESP -> CSP	0.463	0.019	24.619	Significant
CFSP -> CSP	0.237	0.017	13.632	Significant
CGSP -> CSP	0.203	0.016	12.998	Significant
CSSP -> CSP	0.273	0.017	15.820	Significant

In next step, multicollinearity statistics are assessed to confirm that the significance recorded in above table is not due to any inter-correlation or inter-association among the four first order constructs. Table 5.19 confirms that no multi-collinearity exists in such relationship (Hair Jr et al., 2017). Therefore, the reliability and validity of ‘Corporate Sustainability Performance’ is assured.

Table 5.19: Multicollinearity statistics for the formative construct ‘Corporate Sustainability Performance (CSP)’

Items/Variables	Collinearity Statistics	
	Tolerance	VIF
Corporate Financial Sustainability Performance (CFSP)	0.477	2.098
Corporate Environmental Sustainability Performance (CESP)	0.568	1.761
Corporate Social Sustainability Performance (CSSP)	0.397	2.517
Corporate Governance Sustainability Performance (CGSP)	0.517	1.934

5.7.4 Other Assessments for the Measurement Model

5.6.4.1 Assessing validity of first order constructs

Assessment of validity refers to check whether every construct that is conceptualized reliably is unique and does not overlap other constructs. Two important validity which researchers are required to ensure are convergent validity and discriminant validity. Convergent validity involves the degree to which items converges to its own construct in comparison to other constructs (Urbach & Ahlemann, 2010). For bootstrapping data analysis technique, it is referred as average variance extracted (AVE) (Hair Jr et al., 2017). It is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error. The cut-off value for AVE is 0.5 (Hair Jr et al., 2017). The other validity measures of discriminant validity refers to degree to which items differ from other constructs by examining correlations amongst them. The most popular test criteria for assessing discriminant validity is Fornell Larker Criteria which is presented in Table 5.20. It is noteworthy that, except observed constructs, study uses only three latent variable constructs at path assessment. However two of them are higher order constructs i.e. 'MCS use' and 'CSP' which are conceptualized by two and four first order constructs. So that makes seven first order latent constructs used in this study. Assessment of validity at first order level is recommended and so is done in this study thereafter (Hair et al., 2012; Hair Jr et al., 2017; Wijethilake, 2017).

Table 5.20: Assessment of AVE and Fornell Larker Criteria for reflective constructs

	AVE	DMCS	ERM	CESP	CFSP	CGSP	IMCS	CSSP
DMCS	0.666	0.816						
ERM	0.736	0.742	0.858					
CESP	0.664	0.572	0.653	0.815				
CFSP	0.835	0.649	0.529	0.509	0.914			
CGSP	0.786	0.756	0.710	0.567	0.610	0.887		
IMCS	0.716	0.374	0.368	0.230	0.271	0.310	0.846	
CSSP	0.723	0.689	0.601	0.629	0.691	0.630	0.351	0.850

*Off diagonal values represents the square root of AVE score of respective construct

Table 5.20 shows that AVE score for all the constructs exceeds the cut-off point of 0.5. Moreover the off diagonal values which represent the square root of AVE score of respective construct is also higher in comparison to other correlational values of the constructs. These confirms discriminant validity of constructs used in the study. The assessment of discriminant validity is further validates using cross loading approach (see Table 5.21). Table 5.21 also reveals that items loading in their own construct is higher in comparison to any other constructs.

Table 5.21: Assessment of Cross Loading for reflective constructs

	ERM	DMCS	IMCS	CFSP	CESP	CSSP	CGSP
rm1	0.853	0.628	0.280	0.423	0.524	0.517	0.593
rm2	0.894	0.677	0.302	0.510	0.550	0.524	0.649
rm3	0.889	0.631	0.351	0.468	0.577	0.592	0.608
rm4	0.877	0.658	0.247	0.493	0.561	0.475	0.637
rm5	0.843	0.606	0.328	0.448	0.597	0.578	0.595
rm6	0.853	0.678	0.339	0.495	0.522	0.434	0.608
rm7	0.802	0.532	0.334	0.278	0.646	0.515	0.536
rm8	0.851	0.681	0.339	0.510	0.499	0.473	0.641
md1	0.589	0.837	0.330	0.450	0.444	0.547	0.497
md10	0.565	0.784	0.314	0.555	0.425	0.526	0.671

Table 5.21, continued

	ERM	DMCS	IMCS	CFSP	CESP	CSSP	CGSP
md11	0.572	0.808	0.317	0.668	0.488	0.678	0.703
md12	0.543	0.765	0.349	0.463	0.401	0.564	0.592
md13	0.636	0.776	0.369	0.457	0.585	0.657	0.591
md14	0.662	0.894	0.308	0.576	0.522	0.564	0.660
md15	0.589	0.834	0.345	0.440	0.441	0.549	0.494
md2	0.672	0.904	0.302	0.588	0.539	0.574	0.675
md3	0.675	0.850	0.276	0.552	0.493	0.520	0.614
md4	0.554	0.787	0.228	0.544	0.388	0.422	0.609
md5	0.687	0.843	0.327	0.505	0.475	0.599	0.629
md6	0.561	0.803	0.262	0.499	0.425	0.592	0.600
md7	0.592	0.805	0.288	0.615	0.440	0.594	0.670
md8	0.551	0.729	0.255	0.416	0.438	0.448	0.540
md9	0.606	0.801	0.288	0.602	0.471	0.575	0.707
mi1	0.293	0.294	0.929	0.225	0.167	0.279	0.271
mi10	0.275	0.277	0.916	0.228	0.155	0.274	0.261
mi11	0.270	0.275	0.921	0.240	0.159	0.280	0.255
mi12	0.267	0.269	0.919	0.245	0.159	0.279	0.248
mi2	0.333	0.366	0.846	0.228	0.173	0.310	0.289
mi3	0.320	0.275	0.862	0.247	0.189	0.318	0.264
mi4	0.318	0.287	0.814	0.181	0.206	0.284	0.210
mi5	0.265	0.319	0.791	0.220	0.142	0.250	0.231
mi6	0.354	0.338	0.803	0.217	0.269	0.312	0.252
mi7	0.287	0.312	0.801	0.218	0.257	0.330	0.262
mi8	0.374	0.409	0.805	0.314	0.198	0.331	0.316
mi9	0.361	0.348	0.717	0.159	0.253	0.296	0.264
fs1	0.406	0.534	0.242	0.898	0.415	0.577	0.502
fs2	0.486	0.592	0.226	0.928	0.462	0.647	0.539
fs3	0.547	0.643	0.271	0.914	0.511	0.665	0.622
es1	0.472	0.400	0.137	0.445	0.856	0.532	0.422
es2	0.491	0.401	0.154	0.251	0.800	0.386	0.340
es3	0.566	0.475	0.200	0.320	0.838	0.560	0.462
es4	0.569	0.554	0.228	0.344	0.803	0.512	0.484
es5	0.625	0.587	0.241	0.502	0.864	0.535	0.559
es6	0.591	0.421	0.212	0.449	0.792	0.520	0.472
es7	0.398	0.403	0.126	0.558	0.744	0.518	0.466
ss1	0.617	0.619	0.285	0.519	0.589	0.806	0.542
ss2	0.600	0.600	0.306	0.604	0.566	0.898	0.594
ss3	0.347	0.563	0.221	0.625	0.474	0.782	0.483
ss5	0.492	0.577	0.345	0.642	0.536	0.893	0.539

Table 5.21, continued

	ERM	DMCS	IMCS	CFSP	CESP	CSSP	CGSP
ss6	0.477	0.562	0.327	0.544	0.497	0.865	0.507
gs1	0.734	0.740	0.316	0.552	0.523	0.596	0.904
gs2	0.620	0.659	0.278	0.540	0.586	0.559	0.859
gs4	0.589	0.623	0.210	0.561	0.403	0.516	0.879
gs5	0.562	0.650	0.286	0.508	0.481	0.554	0.904

5.6.4.2 Common method bias

In self-report studies, one of the major issues regarding measurement validity is common method bias. Typically when all the constructs of a study is measured through the key informant approach common method bias test is recommended. However in this uphold study only mediating and dependent constructs are measured through self-reporting while all the constructs of independent variable are measured through data collected from secondary source. Therefore the study assumed no threat for common method bias exists. Moreover for the constructs using key informant approach several efforts are made to reduce any bias during instrument development stage, such as replacing and modifying item wordings to more procedural and avoiding social desire. However considering potential common method variance may not be completely eliminated, the study carried out suitable technique, i.e., single-factor test for all the constructs measured through self-reporting.

The goal of single-factor testing is to verify if common method bias is a serious problem or not. According to Podsakoff, MacKenzie, Lee, and Podsakoff (2003), Harman's one-factor or so-called single-factor test (Harman, 1976) is one of the most commonly utilized methods that helps researcher to tackle the popular process bias issue. Exploratory factor analysis (EFA) was carried out in this regard for all the factors of interest in the study (Harman, 1976; Podsakoff et al., 2003). The findings of this analysis on all the constructs

showed one factor with eigenvalues greater than 1 and no single factor appeared from the unrotated factor solution and accounted for most variation among variables. The first derived element accounted for only 43.807 per cent of the 76.567 per cent overall variation that is appropriate (see Appendix D for detailed analysis).

5.8 Assessment of Structural Model (Direct Effect)

In modelling the PLS direction the structural component is evaluated by calculating the coefficients of the path along with the magnitude of R^2 . Thus path coefficients demonstrate the power of the correlations between the predictor and criterion constructs, the R^2 value is a measure of a model's predictive sensitivity for the (dependent) criterion constructs. (Chin, 1998, 2010; Chin et al., 2003). The significance of path coefficients in the model lends support for hypothesized associations (Bentler & Mooijaart, 1989). SMARTPLS V2.0 M3 (Ringle, Wende, & Will, 2005), was chosen to use a bootstrap resampling method (5000 resamples) to determine the significance of the paths within the structural model. Table 5.22 demonstrate results of the SEM assessment which consists of standardized path coefficients β in addition to their corresponding t-statistics extracted from PLS estimation. The bootstrap resampling technique with 5000 resamples was conducted for estimating the standard errors. The assessment also includes assessment of R^2 values (see Table 5.23) and assessment of effect sizes (f^2) (see Table 5.24). The overall analysis shows that the model explains a substantial amount of variance in the dependent variables and the effect size is also substantial. Table 5.22 summarizes hypotheses (direct effects) and their test results.

Table 5.22: Summary of hypothesis and their test statistics for direct effects

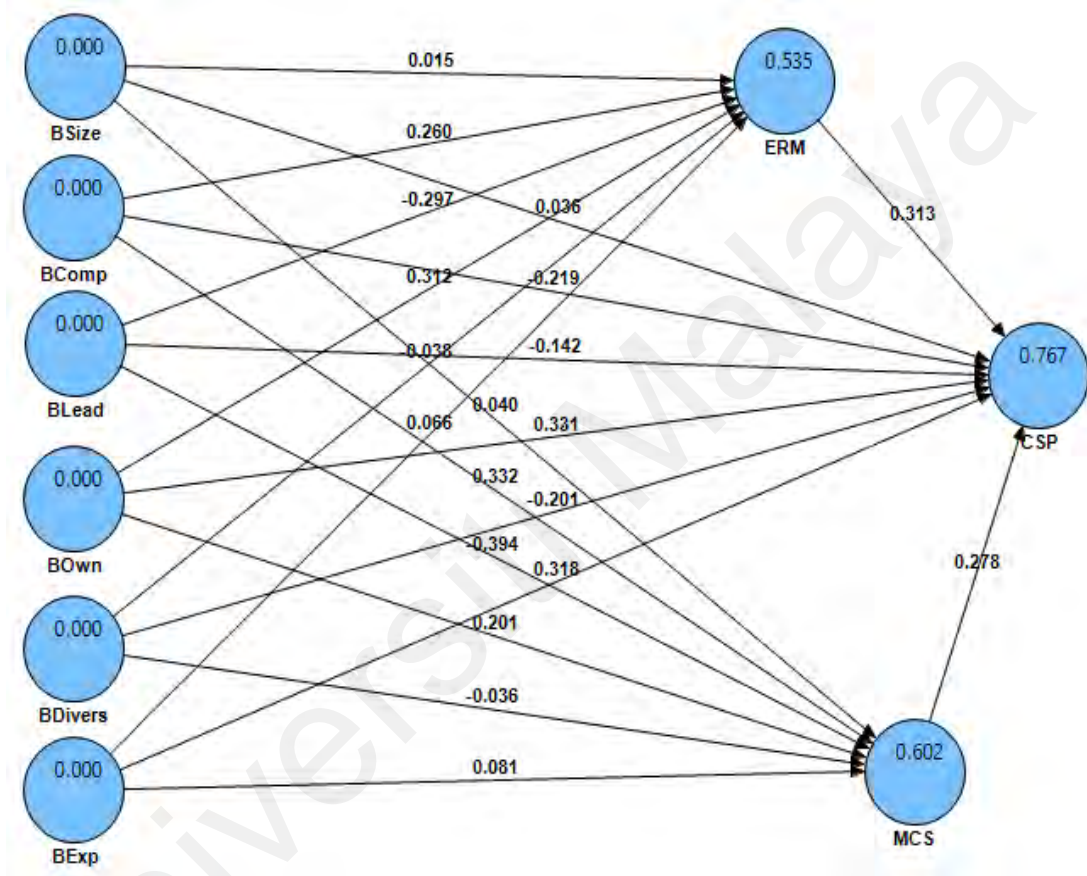
No	Hypothesis	Path	Parameter Estimate(β)	Sample Mean	Std. Error	T Statistics
1	H1a	BSize -> CSP	0.0356	0.0349	0.0393	0.9055
2	H1b	BComp -> CSP	-0.217	-0.2988	0.1755	1.2362
3	H1c	BLead -> CSP	-0.1418	-0.1423	0.0509	2.7866***
4	H1d	BOwn -> CSP	0.331	0.3423	0.1089	3.0403***
5	H1e	BDivers -> CSP	-0.2024	-0.151	0.1777	1.1389
6	H1f	BExp -> CSP	0.3183	0.3364	0.0804	3.9612***
7	H2a	BSize -> ERM	0.0158	0.015	0.0458	0.3452
8	H2b	BComp -> ERM	0.2559	0.2592	0.1408	1.8181**
9	H2c	BLead -> ERM	-0.2985	-0.2992	0.068	4.3889***
10	H2d	BOwn -> ERM	0.3151	0.2961	0.1416	2.2257***
11	H2e	BDivers -> ERM	-0.0351	-0.0223	0.1287	0.2731
12	H2f	BExp -> ERM	0.065	0.0714	0.1371	0.4743
13	H3a	BSize -> MCS	0.0404	0.0385	0.0421	0.9588
14	H3b	BComp -> MCS	0.3324	0.3641	0.1505	2.2078***
15	H3c	BLead -> MCS	-0.3935	-0.391	0.0641	6.1359***
16	H3d	BOwn -> MCS	0.2012	0.1768	0.1336	1.5057*
17	H3e	BDivers -> MCS	-0.0357	-0.05	0.1428	0.2503
18	H3f	BExp -> MCS	0.0811	0.0912	0.1391	0.5827
19	H4	ERM -> CSP	0.3078	0.3161	0.0647	4.7587***
20	H5	MCS -> CSP	0.2807	0.2773	0.0754	3.7205***

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; BSize=Board Size, BComp=Board Composition, Blead=Board Leadership, BOwn=Board Ownership, BDivers=Board Diversity, BExp=Board Expertise, ERM= Enterprise Risk Management, MCS= Management Control Systems, CSP=Corporate Sustainability Management

Table 5.23 shows the variance explanation (R^2) for the endogenous variables namely Corporate Sustainability Performance (CSP), Enterprise Risk Management (ERM) use, and Management Control Systems (MCS) use. According to Hair Jr et al. (2017), R^2 values equal to or over 0.25 but less than 0.50 refers to weak model, R^2 values equal to or over 0.50 but less than 0.75 refers to moderate model, and R^2 values equal to or over 0.75 refers to a substantial model. From this point of view, both ERM and MCS use is moderately explained by the exogenous variables, i.e., board of directors' characteristics. Moreover, the overall model represented by CSP as final dependent variable is substantially explained by the other variables. In other words, BDC, ERM, and MCS explain 76.7 percent variance in CSP which indicates a substantial model.

Table 5.23: Assessment of R² values

Endogenous Constructs	R Square	Adjusted R Square
Corporate Sustainability Performance (CSP)	0.767	0.754
Enterprise Risk Management (ERM)	0.535	0.518
Management Control Systems (MCS)	0.602	0.586

**Figure 5.1:** Assessment of structural model (direct only)

In next step, the effect sizes (f^2) are assessed and summarized in Table 5.24. According to Sullivan and Feinn (2012) p-value only informs the reader whether an effect exists or not, but it fails to inform the reader about the size of the effect. Sullivan and Feinn (2012) contended that to provide a meaningful and useful analysis researcher need to report substantive significance (effect size) in addition to reporting statistical significance (p-value). It is a great complement to P-value. Effect sizes are independent to sample size and test practical significance in terms of magnitudes. Moreover, it allows direct comparison of

different quantities because it is dimension free and standardized (Selya, Rose, Dierker, Hedeker, & Mermelstein, 2012). The statistical community and scientific journals have been increasingly encouraging researchers to report effect sizes along with p-values (Fidler et al., 2005; Nakagawa & Cuthill, 2007). Hair Jr et al. (2017) also posit that the changes in the R^2 values are important to analyse and report in any PLS-SEM analysis. To measure the effect size, Cohen (1988) approach is used in this process. In this method, changes in R^2 values are examined by omitting exogenous constructs and looking at its impact on the endogenous constructs. In other words, the importance of exogenous constructs in explaining endogenous constructs is assessed by re-calculating R^2 by omitting one particular exogenous constructs at a time. The values of 0.02, 0.15, and 0.35 refer to small, medium, and large effects respectively (Cohen, 1988).

Table 5.24: Assessment of Effect Size (f^2 Values)

	CSP	ERM	MCS
Board Size	0.006	0.000	0.004
Board Composition	0.045	0.034	0.066
Board Leadership	0.041	0.113	0.232
Board Ownership	0.054	0.027	0.013
Board Diversity	0.041	0.001	0.001
Board Expertise	0.072	0.002	0.003
ERM	0.170	N/A	N/A
MCS	0.115	N/A	N/A

Table 5.24 reveals that ERM (0.170) has medium effect on CSP. MCS (0.115) effect on CSP is slightly below medium. From board of directors' characteristics Board Expertise (0.072) and Board Size (0.006) have highest and lowest effect in producing R^2 for CSP respectively. However, from statistical point, all the effect sizes of BDC constructs are small for CSP. In case of both ERM and MCS, Board Leadership has got close to medium

(0.113) or medium (0.232) effect size. Furthermore, Table 5.24 reveals that, Board Composition and Board Ownership have small effect in producing R^2 for ERM and MCS. However, Board Size, Board Diversity, and Board Expertise have negligible effect on ERM and MCS. In summary, although significant relationship is found in many cases, the effect size is low for most studied variables.

5.8.1 Summary Table for Hypothesis (Direct Effect Only)

Table 5.25 summarizes the hypothesis results for direct effect only. The table is further supplemented by Figure 5.1. It shows that only eight out of twenty hypothesis have been supported. It warrants to look deep into the indirect effect of board of directors' characteristics on corporate sustainability performance. The next section dig deep into this aforementioned relationship.

Table 5.25: Summary of hypothesis and results for direct effects

No	Hypothesis	Result
1	H1a Board size is positively associated with corporate sustainability performance	Not Supported
2	H1b Board composition is positively associated with corporate sustainability performance	Not Supported
3	H1c Board leadership is positively associated with corporate sustainability performance	Not Supported
4	H1d Board ownership is positively associated with corporate sustainability performance	Supported
5	H1e Board diversity is positively associated with corporate sustainability performance	Not Supported
6	H1f Board expertise is positively associated with corporate sustainability performance	Supported
7	H2a Board size is positively associated with ERM use	Not Supported
8	H2b Board composition is positively associated with ERM use	Supported
9	H2c Board leadership is positively associated with ERM use	Not Supported
10	H2d Board ownership is positively associated with ERM use	Supported

Table 5.25, continued

No	Hypothesis	Result
11	H2e Board diversity is positively associated with ERM use	Not Supported
12	H2f Board expertise is positively associated with ERM use	Not Supported
13	H3a Board size is positively associated with MCS use	Not Supported
14	H3b Board composition is positively associated with MCS use	Supported
15	H3c Board leadership is positively associated with MCS use	Not Supported
16	H3d Board ownership is positively associated with MCS use	Supported
17	H3e Board diversity is positively associated with MCS use	Not Supported
18	H3f Board expertise is positively associated with MCS use	Not Supported
19	H4 ERM use is positively associated with corporate sustainability performance	Supported
20	H5 MCS use is positively associated with corporate sustainability performance	Supported

5.9 Assessment of Mediation (Indirect) Effect

According to Venkatraman (1989), mediation is the ‘...existence of a significant intervening mechanism between antecedent and consequent variables’ (p. 428). In other words, a mediator specifies how, or the mechanism by which, a given effect occurs. Mediation is also known as special case of ‘indirect effect’ (Hair Jr et al., 2017; Hayes, 2017).

In this study, H6 and H7 relate to mediation effect of ERM and MCS on the relationship between board characteristics and corporate sustainability performance. Based on more recent literature of mediation methods (Hair Jr et al., 2017; Hayes, 2017; Zhao, Lynch, & Chen, 2010), the study tests mediation of ERM and MCS using ‘bootstrap process’ (Preacher & Hayes, 2004, 2008) instead of using famous and frequently used ‘causal procedure’ of Baron and Kenny (1986). Besides, Barron and Kenny’s method, the other

widely used technique for testing significance of indirect effect is ‘Sobel test’ which is also suffering for several shortcomings. To justify the use of ‘bootstrap process’, the study presents few limitations of Barron and Kenny’s method and Sobel test.

Based on the original guidelines provided by Judd and Kenny (1981), Baron and Kenny (1986) proposed ‘causal procedure method’ which eventually got immense popularity and has been the highly employed procedure for testing of mediation effect in social science research. The four-step procedure introduced in Baron and Kenny’s classic publication (Baron & Kenny, 1986) argued that mediation occurs in the following conditions:

- a. A regression of the mediator on the independent variable shows a significant effect
- b. A regression of the mediator on the independent variable and the dependent variable shows a significant effect, and
- c. A regression of both independent variable and mediator have a significant effect on the dependent variable.

Scholars have discussed that the popularity of Baron and Kenny approach is no doubt due to the fact that it is quite simple to understand, easy to describe and it can be summarized in a few sentences in a scientific report. Moreover, no specialised software required and it can be implemented without taking a strong background in statistics or data analysis. However, despite its popularity, recent developments in quantitative research methods suggest several limitations in Baron and Kenny’s causal procedure approach. For example, under this method, all steps must be significant before mediation can be accepted. It means the analysis has to stop if any of the above steps becomes insignificant, and ‘no mediation’ will be the conclusion. This method has been criticized as having very low power, and the multiple steps increase the probability of type I error, i.e.; a false conclusion that there is mediation when, in fact, there is no mediation effect (Rungtusanatham et al.,

2014). Several scholars recommend that direct effect does not have to be significant while analysing mediation and notwithstanding a single inferential test of the indirect effect is all that is needed (Shrout & Bolger, 2002; Zhao et al., 2010). This is because a significant direct relationship may not be identified because of a small sample size or other extraneous factors (e.g., moderation), or there may not be enough power to predict the effect that actually exists (Hayes & Rockwood, 2017).

In a similar ground, Sobel test method has been criticized although it has been used widely in the twentieth century. In the Sobel test, the p-value is derived by assuming normality of the sampling distribution of the indirect effect. Although this assumption is fairly sensible in large samples, it is not in smaller ones. This assumption, which typically will not hold, yields a test that is lower in power than alternatives especially if researchers use small sample sizes or when they require unstandardized path coefficients to calculate the result of Sobel test. As this test is prone to lead wrong conclusion, Sobel test is not suitable for studies in mediation analysis, though it remains popular (Preacher & Hayes, 2004, 2008). Therefore, to correct this situation, experts like Hair Jr et al. (2017) and (Hayes, 2009, 2017) highly recommend using ‘bootstrap process’ to overcome the limitations of Sobel test.

Bootstrapping, a nonparametric resampling procedure, has been recognized as one of the more rigorous and powerful methods for testing the mediating effect (Hair Jr et al., 2017; Hayes, 2009, 2017; Shrout & Bolger, 2002; Zhao et al., 2010). Although there are several types of bootstrapping, namely, Percentile Bootstrap, Standardized Bootstrap, Bias-Corrected and Accelerated (BCa) Bootstrap etc., Hayes and Rockwood (2017) show that the BCa bootstrap confidence interval is the best approach for detecting mediation effects when mediation is present. In addition to that, the application of bootstrapping for

mediation analysis has recently been advocated by Hair Jr et al. (2017), who have noted that, ‘...when testing mediating effects, researchers should rather follow (Preacher & Hayes, 2004, 2008), and bootstrap the sampling distribution of the indirect effect, which works for simple and multiple mediator models’ (p. 223). Furthermore, this method is said to be perfectly suited for PLS-SEM and the study context because it makes no assumption about the shape of the variables’ distribution and therefore, can be applied to small sample sizes (Hair Jr et al., 2017; Hayes & Rockwood, 2017; Preacher & Hayes, 2004, 2008).

In connection to bootstrapping process of mediation analysis recent PLS-SEM literature suggests the extraction of more information of mediation effect via looking into the types of mediation would be useful for any studies. Similarly, Zhao et al. (2010) and Hair Jr et al. (2017) highlighted that the types of mediation effects (Full mediation and Partial Mediation of Complementary and Competitive) have the potential to deliver theoretically interesting findings. Therefore, the study employs the decision tree and a step-by-step procedure for testing mediation from Zhao et al. (2010) in order to examine the indirect effects of ERM and MCS. Unlike Baron and Kenny (1986), Zhao et al. (2010) mediation analysis commences with the determination of significance of the indirect effect followed by determination of the significance of the direct effect to define the type of effect of mediation namely no effect, full effect, partial effect etc. The detailed process is figured in Figure 5.2.

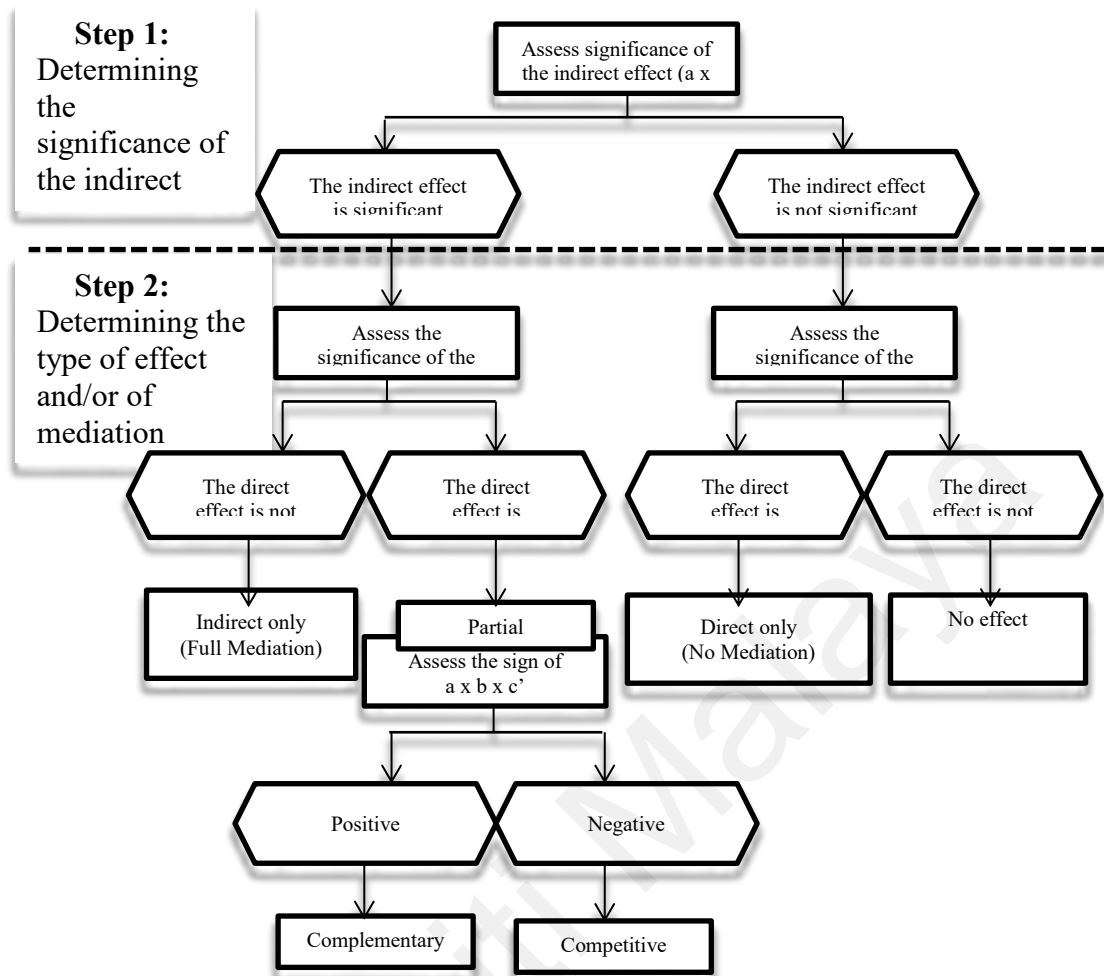


Figure 5.2: Decision Tree for Mediation Analysis (Zhao et al., 2010)

The analysis of indirect effect for this study was carried out in two steps. Initially, the mediating variable (ERM use) is checked through bootstrapping the model using 5000 resampling in a 95% confidence interval on indirect effect of all the board characteristics variables on corporate sustainability performance which is followed by the mediating variable MCS use in next step in similar fashion. The result of the analysis is summarized in Table 5.26.

Table 5.26: Summary of hypothesis and their test statistics for indirect effect

No	Indirect effect- Hypothesis	Std. Beta	Std. Error	t-value	Confidence Interval (BC)		Type of mediation
					LL	UL	
1	DirSize -> ERM -> CSP (H6a)	0.006	0.011	0.577	-0.015	0.028	No effect (No Mediation)
2	DirOut -> ERM -> CSP (H6b)	2.724	0.581	4.689***	1.766	4.012	Indirect only (Full Mediation)
3	DirDual -> ERM -> CSP (H6c)	-1.47	0.219	6.720***	-1.913	-1.044	Partial Mediation (Complementary)
4	DirOwn -> ERM -> CSP (H6d)	1.595	0.319	4.992***	1.004	2.234	Partial Mediation (Complementary)
5	DirWom -> ERM -> CSP (H6e)	0.195	0.047	4.112***	0.125	0.312	Indirect only (Full Mediation)
6	DirPD -> ERM -> CSP (H6f)	0.257	0.054	4.745***	0.162	0.379	Partial Mediation (Complementary)
7	DirSize -> MCS -> CSP (H7a)	0.012	0.011	1.082	-0.008	0.035	No effect (No Mediation)
8	DirOut -> MCS -> CSP (H7b)	2.836	0.587	4.835***	1.903	4.170	Indirect only (Full Mediation)
9	DirDual -> MCS -> CSP (H7c)	-1.688	0.190	8.867***	-2.066	-1.325	Partial Mediation (Complementary)
10	DirOwn -> MCS -> CSP (H7d)	1.555	0.296	5.253***	0.968	2.136	Partial Mediation (Complementary)
11	DirWom -> MCS -> CSP (H7e)	0.197	0.046	4.253***	0.127	0.309	Indirect only (Full Mediation)
12	DirPD -> MCS -> CSP (H7f)	0.248	0.048	5.213***	0.160	0.347	Partial Mediation (Complementary)

Note: *p<0.10, **p<0.05, ***p<0.01; BC=Bias Corrected; LL=Lower Level, UL=Upper Level; BSize=Board Size, BComp=Board Composition, Blead=Board Leadership, BOwn=Board Ownership, BDivers=Board Diversity, BExp=Board Expertise, ERM= Enterprise Risk Management, MCS= Management Control Systems, CSP=Corporate Sustainability Management

As presented in Table 5.26, the indirect effect of board size on corporate sustainability performance mediated through ERM and MCS use ($\beta = 0.006$, $\beta = 0.012$) has been insignificant with t-values 0.577 and 1.082 respectively. Moreover, both the indirect effect produces 0 in between Lower Level (LL) and Upper Level (UL) of confidence interval (CI) at 95% Bias Corrected (BC) Boot [LL=-0.015 , UL= 0.028; and LL= 1.903, UL= 4.170] which confirms that there is no statistically significant mediation effect detected (Preacher and Hayes, 2004, 2008) for any of the mediator proposed in this study. Conversely, hypothesis 6a (ERM use mediates the relationship between board size and corporate sustainability performance) and hypothesis 7a (MCS use mediates the relationship between board size and corporate sustainability performance) are not supported due to the fact that the initial condition for establishing mediation effect was not fulfilled.

Again, bootstrapping the model with ERM and MCS use as mediating variables for the indirect path between board composition and corporate sustainability performance resulted in a 95% BC confidence interval do not straddle a 0 in between [LL= 1.766, UL= 4.012; and LL= -0.008, UL= 0.035] indicating there is a mediation. On the other hand, the direct effect of board composition on corporate sustainability performance is not statistically significant with β equals to -0.136 and t-value of 0.504 which determined indirect-only (or full mediation) mediation according to Zhao's decision tree. This lends support to hypothesis 6b and hypothesis 7b which state that both ERM use and MCS use mediate the relationship between board composition and corporate sustainability performance.

While bootstrapping the model with ERM and MCS use again as mediating variables in a 95% confidence interval [LL=-1.913, UL= -1.044; and LL= -2.066, UL= -1.325] for the indirect effect of board leadership on corporate sustainability performance, the effect is found statistically significant ($\beta = -1.472$, -1.688 and t-value 6.720, 8.867). As the CI of

this indirect effect does not include zero, mediation through ERM and MCS use is established. Further analysis of direct effect of board leadership on corporate sustainability performance also found statistically significant with $\beta = -0.174$ and t-value of 3.300. These results show that both ERM and MCS use partially mediate the relationship. To extract more information of complementary mediation effect, the direction of the effect is further checked. This finds that either the mediating effect ($a \times b$) or the direct effect (c) exist and point in the same direction which results in complementary mediation. So, both the mediators (ERM and MCS use) partially and complementarily mediate the relationship between board leadership and corporate sustainability performance. Therefore, hypothesis 6c (ERM use mediates the relationship between board leadership and corporate sustainability performance) and hypothesis 7c (MCS use mediates the relationship between board leadership and corporate sustainability performance) are consequently supported.

Similar result is found while bootstrapping the indirect effect of board ownership on corporate sustainability performance for both the mediators of ERM and MCS use. The confidence interval (LL=1.004, UL=2.234 and LL= 0.968, UL= 2.136) has been scanned and this do not straddle a 0 in between them which indicate the indirect effect is significant ($\beta = 1.595, 1.555$ and t-value = 4.992, 5.253). In addition to that, direct path (c) is also significant for board ownership to corporate sustainability performance with $\beta = 0.247$ and t-value of 2.351. Accordingly, it is concluded that there are partial mediation exists for both ERM and MCS use. Further analysis of effect direction ($a \times b \times c$) is positive and therefore the partial mediation is complementary based on Zhao's decision tree. So, it is concluded that hypothesis 6d (ERM use mediates the relationship between board ownership and corporate sustainability performance) and hypothesis 7d (MCS use mediates the relationship between board ownership and corporate sustainability performance) are supported.

Concerning the mediation effect of ERM and MCS use in the relationship between board diversity and corporate sustainability performance, the result showed that the 95% confidence intervals was not include zero for both the mediators ERM use (LL=0.125, UL=0.312) and MCS use (LL=0.127, UL=0.309). Hence, the indirect effects $a \times b$ ($\beta = 0.195, 0.197$ and $t\text{-value} = 4.112, 4.253$) are significant which in turn leads to establish the mediation effect of ERM and MCS use respectively. Since direct effect of board diversity on corporate sustainability performance is not significant ($\beta = -0.192$ and $t\text{-value} = 0.658$), only mediation or full mediation was established. Therefore, hypothesis 6e (ERM use mediates the relationship between board diversity and corporate sustainability performance) and hypothesis 7e (MCS use mediates the relationship between board diversity and corporate sustainability performance) are supported.

Finally, bootstrapping the model for the indirect effect of board expertise on corporate sustainability performance resulted in a 95% confidence interval [LL= 0.162, UL= 0.379 and LL=0.160, UL= 0.347] does not result 0 included, so indirect effect $a \times b$ ($\beta = 0.257, 0.248$) is significant ($t\text{-value} = 4.745, 5.213$) and mediation through ERM and MCS use are established. As mentioned earlier, the direct effect c , i.e. the path of board expertise to corporate sustainability performance ($\beta = 0.343$ and $t\text{-value} = 3.745$) is statistically significant. The type of mediation is termed complementary (partial mediation) due to the fact that $a \times b \times c$ is positive. As a result, the hypothesis 6f (ERM use mediates the relationship between board expertise and corporate sustainability performance) and hypothesis 7f (MCS use mediates the relationship between board expertise and corporate sustainability performance) are supported.

Table 5.27 summarizes the result of hypotheses testing of indirect path/ mediation effect which shows that out of 12 hypotheses, 10 are supported and two are not supported.

Table 5.27: Summary of hypotheses and result for indirect effects

No		Hypothesis	Result
1	H6a	ERM use mediates the relationship between board size and corporate sustainability performance	Not Supported
2	H6b	ERM use mediates the relationship between board composition and corporate sustainability performance	Supported
3	H6c	ERM use mediates the relationship between board leadership and corporate sustainability performance	Supported
4	H6d	ERM use mediates the relationship between board ownership and corporate sustainability performance	Supported
5	H6e	ERM use mediates the relationship between board diversity and corporate sustainability performance	Supported
6	H6f	ERM use mediates the relationship between board expertise and corporate sustainability performance	Supported
7	H7a	MCS use mediates the relationship between board size and corporate sustainability performance	Not Supported
8	H7b	MCS use mediates the relationship between board composition and corporate sustainability performance	Supported
9	H7c	MCS use mediates the relationship between board leadership and corporate sustainability performance	Supported
10	H7d	MCS use mediates the relationship between board ownership and corporate sustainability performance	Supported
11	H7e	MCS use mediates the relationship between board diversity and corporate sustainability performance	Supported
12	H7f	MCS use mediates the relationship between board expertise and corporate sustainability performance	Supported

5.10 Analysis of Control Effect

Control variables are applied for factors in addition to the variables of interest in theoretical model, which are potentially able to explain variance in dependent variable. Two control variables namely firm size and industry are introduced in this study since they have potential to influence corporate sustainability performance.

Table 5.28 summarizes the control effect of firm size measured by total asset and industry as dummy variable.

Table 5.28: Assessment of Control Variables effect on CSP

Path	Parameter Estimate(β)	T Statistics	Significance	R ² before	R ² after	R ² change
FirmSize -> CSP	0.0049	0.1208	Non-Significant	0.767	0.767	0.000
Industry -> CSP	0.1294	2.4407	Significant at p<0.01	0.767	0.775	0.008

As presented in Table 5.28, two control variables, namely Firm Size and Industry were included in the model. The results indicated that firm size has nonsignificant effect on organizational performance ($\beta=-0.0049$, ns). It means that, although it is argued that larger firm is supposed to effect sustainability performance, the study find no such evidence for the case of Bangladeshi firms. Besides, the potential industry specific effect was tested by using a dummy variable (“1” refers environmentally sensitive and, “0” means non-sensitive). The industry dummy variable is statistically significant to the dependent variables, ($\beta=0.1294$, $p<0.01$). It indicates that if the firm belongs to sensitive industry, it can positively influence corporate sustainability performance.

Moreover, Table 5.28 shows no changes in R² values in CSP while company size is being controlled. However, industry effect has obtained 0.8 percent positive changes in R² which means adding industry as another study variable increases the model fit since R² often indicates the goodness-of-fit of a linear regression model. Notably, without the control effect of industry variable, the model is already recognized as ‘substantial’ with 76.7 percent variance explained (Hair Jr et al., 2017) and the effect size of industry on CSP is ‘small’ (Cohen, 1988).

5.11 Further Analysis

As it is seen in the previous section that the two control variables find contradictory associations i.e. industry and firm size affect corporate sustainability significantly and non-significantly, the study is interested in to look at deeper into the control variables. For this

it is recommended to check the mean difference of endogenous constructs to examine whether there exist any variances across the different firm size and industry type. Table 5.29 summarises the effect of firm size through enterprise risk management, Diagnostic use of MCS, Interactive use of MCS, and corporate sustainability performance. For this, firm size is grouped into small and large with the cut of value 43.923 million which is the average of firm asset hold.

Table 5.29: Firm Size Effect on Endogenous Constructs

Variables	Mean		<i>t</i> -value	Significance
	Small	Large		
Enterprise Risk Management	4.917	5.000	-0.083	0.352
Diagnostic Use of MCS	4.984	5.138	-0.154	0.511
Interactive Use of MCS	4.544	4.833	-0.289	1.002
Corporate Financial Sustainability Performance	4.887	4.500	-0.387	-1.440
Corporate Environmental Sustainability Performance	4.535	4.633	-0.098	0.377
Corporate Social Sustainability Performance	4.688	4.757	-0.069	0.282
Corporate Governance Sustainability Performance	4.824	4.821	0.003	-0.012
The mean difference is significant at $P < 0.05$				

Table 5.30 summarises the effect of industry type through enterprise risk management, Diagnostic use of MCS, Interactive use of MCS, and corporate sustainability performance. Industry type is categorised as environmentally sensitive and non-sensitive.

Table 5.30: Industry Type Effect on Endogenous Constructs

Variables	Mean		Difference	t-value	Significance
	Sensitive	Non-Sensitive			
Enterprise Risk Management	4.816	5.113	-0.2971	-1.642	0.103
Diagnostic Use of MCS	4.926	5.144	-0.2177	-1.215	0.226
Interactive Use of MCS	4.467	4.793	-0.3265	-1.472	0.143
Corporate Financial Sustainability Performance	4.895	4.703	0.1923	0.928	0.355
Corporate Environmental Sustainability Performance	4.506	4.625	-0.1194	-0.601	0.549
Corporate Social Sustainability Performance	4.629	4.813	-0.1831	-0.978	0.329
Corporate Governance Sustainability Performance	4.7672	4.9141	-0.1469	-0.799	0.425
The mean difference is significant at $P < 0.05$					

The results demonstrated in Table 5.29 and Table 5.30 confirm that the mean of all the variables under investigation were relatively close and the difference is minimal. In this case, using t statistics, it can concluded that there was not any significant difference between different firm size and also between environmentally sensitive and non-sensitive industry in terms of the main variables.

5.12 Chapter Summary

This chapter mainly presents the details of data analysis recommended to assess measurement model and structural model simultaneously using PLS-SEM approach. The

chapter begins with discussing some justifications for selecting PLS-SEM approach followed by assessing normality, linearity, homoscedasticity, multicollinearity and response rate bias analysis along with descriptive statistics. This opening analysis is greatly impotent for further analysis. Further analysis presented includes assessment of reliability and validity of constructs and path analysis. Path analysis is elaborately presented in two stages namely, assessing direct effect and mediation effect and followed by assessing control effect.

CHAPTER 6: DISCUSSION AND CONCLUSION

6.1 Chapter Preview

This chapter discusses the findings derived from the previous chapter, in line with the research objectives. The results were also compared and contrasted with other findings from similar studies reported in extant literature. This chapter begins with a review of the data analysis and ends by looking at the research scope and limitations, the contributions, recommendations for future research direction.

6.2 Review of Results

As discussed in the previous chapters, this study had developed and also empirically examined the framework which links the Board of Directors' characteristics and the Internal Control Mechanisms to Corporate Sustainability Performance, in the context of Bangladesh. Specifically, this study assessed the relationship that exists between the Board of Directors' characteristics and Corporate Sustainability Performance; it also aimed to understand how the relationship is mediated by the internal control mechanisms i.e. Enterprise Risk Management (ERM) and Management Control Systems (MCS). As illustrated in Figure 6.1, the proposed theoretical model had investigated the association existing among the six board characteristics which include: size, composition, leadership, ownership, diversity, and expertise. ERM and MCS were used as the mediating variables while Corporate Sustainability Performance (CSP) was used as the dependent variable.

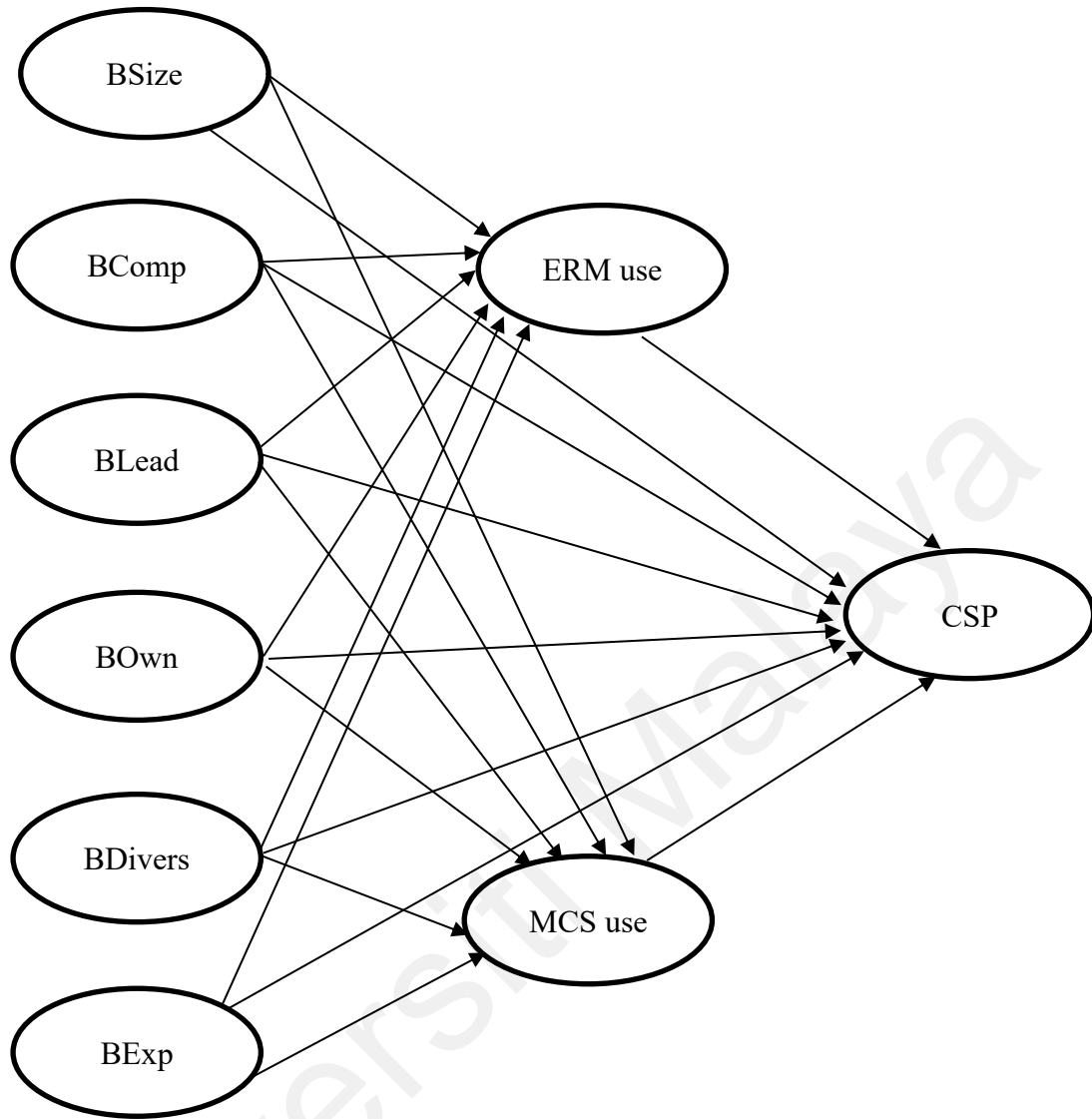


Figure 6.1: Proposed theoretical model

The SMARTPLS V2.0 M3 (Ringle et al., 2005), which uses partial least squares (PLS-SEM), was employed for the hypotheses testing of the proposed model. The test results showed that 18 of the 32 hypothesised associations (H1d, H1f, H2b, H2d, H3b, H3d, H4, H5, H6b, H6c, H6d, H6e, H6f, H7b, H7c, H7d, H7e, and H7f) were supported, whereas 14 of the hypothesized relationships (Hypotheses H1a, H1b, H1c, H1e, H2a, H2c, H2e, H2f, H3a, H3c, H3e, H3f, H6a, and H7a) were not significantly supported.

In testing the link that exists between the six characteristics of the Board of Directors (independent variable), and Corporate Sustainability Performance (CSP - dependent

variable), data confirmed that CSP was significantly related to both ownership and expertise of the board (H1d and H1f). In contrast, no significant relationship was found in the association of its size, composition, leadership, and diversity, with CSP (H1a, H1b, H1c, and H1e) in the current study.

The results further revealed that, among the six board characteristics, only composition and ownership (H2b and H2d), were significantly associated with ERM use. The other characteristics - size, leadership, diversity, and expertise (H2a, H2c, H2e, and H2f), were found to be insignificant. Similar results were revealed for the other mediating variable of MCS use, where only composition and ownership (H3b and H3d), were found to be significantly associated. The analysis, however, did not detect any evidence of a significant relationship of the other characteristics - size, leadership, diversity, and expertise (H3a, H3c, H3e, and H3f), with MCS use.

Apart from these aforementioned relationships (direct), the current findings also observed that CSP was significantly associated with both the mediating variables ERM (H4) and MCS (H5) which served as the Internal Control Mechanisms.

The current study had hypothesized twelve hypotheses regarding the mediating effect of both the ERM and MCS on the relationship between the six Board of Directors' characteristics and Corporate Sustainability Performance. The results also showed that both the ERM and MCS have a mediating effect between the relationship of five Board of Directors' characteristics (i.e. composition, leadership, ownership, diversity, and expertise) and Corporate Sustainability Performance (H6b, H6c, H6d, H6e, H6f, H7b, H7c, H7d, H7e, and H7f). Nevertheless, hypothesis H6a and H7a, as the mediating effect of ERM and MCS between the relationship of social capital and organizational performance respectively, were not statistically supported. This was due to the fact that the initial requirement of

establishing a mediating effect was not fulfilled. In other words, it detected no significant mediating effect of either the ERM or MCS between the board size (independent variable) and CSP (dependent variable).

6.3 Discussion of Key Findings

The following subsections will discuss all the aforesaid findings, which are in line with the objectives of the study. Each subsection is followed by a table which summarizes the research findings and specifies the related hypothesis tested.

6.3.1 Board of Directors' Characteristics and Corporate Sustainability Performance

To address research question 1, the first set of hypotheses examined whether board characteristics were positively associated with Corporate Sustainability Performance (see Table 6.1). In this respect, the significance of the path coefficients of two Board characteristics (i.e. ownership and expertise) and Corporate Sustainability Performance supported hypothesis H1d and H1f. Hence, these results confirmed that greater board ownership and board expertise can potentially lead to better Corporate Sustainability Performance for Bangladeshi companies. These findings are consistent with existing literature which discussed the roles played by favourable board structure in augmenting organizational performance. In this study, no significant relationship was found in the association of size, composition, and diversity (H1a, H1b, and H1e) with sustainability performance. However, board leadership (proxy by CEO duality) was found to be negatively associated, and this rejected the positive hypothesis H1c.

The findings generated from this study were consistent with some extant observations and theories. For example, Fama and Jensen (1983a) observed that greater ownership in management ensures the alignment of interest of the parties involved in decision making

and investing. Thus, greater board ownership is supposed to lead to a better holistic performance. In the context where the implementation of complex sustainability strategy requires expertise, it appears that expert directors with financial and professional knowledge can positively influence corporate sustainability performance. This argument is also supported by both the resource dependence theory and the upper echelon theory. Both theories had argued that resources under the possession of board of directors are supposed to enhance corporate performance. However, this may happen that even the expert boards do not discharge their responsibilities, such as being inactive in monitoring and assessing management actions. Conflict of interest between expert board members and owners may raise such problem. In that context, board ownership may align its interest, and this may lead to better sustainability performance. Therefore, it can be implied that enhanced sustainability performance can be achieved by the expert board of directors' positive action and greater stock ownership of directors can align their interests to achieve better sustainability performance.

In the case of stock ownership of directors, extant literature are also in favour of better sustainability performance. Carroll (1999) and Goyder (1961) showed that director ownership improves board's monitoring of strategic decision making. Hansen and Hill (1991) argued that ownership incentives motivate directors to relinquish short term returns for long-term projects and strategies. If this is so, then directors with higher share ownership were more likely to insist on sustainability. In a more recent study, McGuinness et al. (2017) found that there was a positive relationship of ownership and CSR performance, in the context of China. Similarly, Heald (2018) also found a positive association between board ownership and carbon reduction initiatives (CRI) i.e. carbon performance, for UK firms. Therefore, it can be concluded that recent literature has also validated board ownership and its positive relationship to sustainability performance.

Another finding of this study on board expertise was also found to be consistent with Harjoto et al. (2015) who found that board expertise was one of the driving forces for the firm's corporate social activities. More specifically, Harjoto et al. (2015) revealed that board expertise was positively associated with CSR components in the community, environment, product, and corporate governance areas. Likewise, Bowen (2013) also noted the positive relationship of board expertise with corporate environmental performance. Thus, it was suggested that expert directors can provide the board and firm with rich resources to pursue a strong environmental agenda. This strategy can be accomplished by: (1) alerting executives to new business opportunities that are in the domains of sustainable products, (2) providing advice and direction with regards to the environmental impact of current and future operational choices, and (3) providing access to their human capital and their social networks where environmental expertise resided.

However, the results of the current study did not generate evidence to support the significant relationship between board size and corporate sustainability performance (H1a). This means that the greater number of board members who were deployed to acquire multiple links and support for sustainability within Bangladeshi public listed companies, did not influence firm's sustainability performance. Therefore, the finding was not consistent with some of the previous studies (Bowen, 2013; Fuente et al., 2017) which show the significant association between board size and corporate sustainability performance. The descriptive statistics provided in the analysis showed that the average board size of Bangladeshi public listed companies was larger than 10 and it carried a high standard deviation. Large board size may have raised the conflict of interest among the board, and had eventually, led to ineffective decision making. Larger boards may also negatively impact profitability. For example, in examining the impact of board size on firm performance, Guest (2009) found that board size had a strong negative impact on

profitability. Likewise, Terjesen, Couto, and Francisco (2015) also detected similar evidence for international samples consisting of 47 countries. More recently, Wang, Chen, Fang, and Tian (2018) find that when board size reaches larger than 10, the free-rider, communication and coordination problems outweigh the benefits of large board size and lead to significantly deteriorating the Taiwanese hotels' performance. These evidence support the argument that the problem of poor communication and decision-making can undermine the effectiveness of large board size.

The current study did not find any evidence to support hypothesis H1b which states that outside directors enhanced Corporate Sustainability Performance. More specifically, the finding suggested that outside directors rarely, and negatively, influenced sustainability. This finding contrasts the positive association noted in the context of most developed countries such as the USA (Harjoto et al., 2015; Post et al., 2015) and the UK (Shaukat et al., 2016). In explaining the insignificant finding noted in the current study, it is worth mentioning some of the shortcomings detected of the outside directors in Bangladeshi firms, which may have an impact on their ability to perform. The first flaw observed of the outside directors is that they were not truly independent, even though they were non-executive directors. This is especially true if the director was a former employee or had some other connections with the company, within the previous five years (Colbert & Kurucz, 2007). It was observed that several of the supposedly independent directors in Bangladeshi firms were former executives of the company, as also noted by Freundlieb et al. (2014). Such a phenomenon is not unusual, as researchers have recognised such variations in the extent to which outside directors were truly independent. The cause can be attributed to the powerful social and psychological factors that influenced these outside directors into compromising their willingness and ability to objectively monitor the managerial performance (Goyder, 1961). It is very common for outside director candidates

to be known by the CEOs or the top management of those organisations. Further, it is not unusual for these CEOs and top management to have a significant influence over those who sit on the board (Panapanaan et al., 2003). In the appointment process, new outside board members are actually proposed by the inside board members, who would have some kind of relationship with these individuals. In the context of Bangladesh, due to the high level of insider ownership and the interaction of close relationships between family owners and outside directors, there seems to be a relational contracting system, whereby outside directors worked collaboratively with inside owners who also have positions on the board and management. This kind of relationship enabled the congruence of goals to be accomplished. Consequently, it also caused outside directors to become less effective in discharging their responsibility as independent members of the organisation (Kaptein & Wempe, 2002). In addition to that, outside directors in Bangladesh have been observed to possess less professionalism and competence. They are also external professionals who do not know the company well, or the social and environmental effects of its operations with depth. Given that the main benefits of directorship for the independent directors are prestige, reputation, job opportunities, and networking, outside directors then entrenched themselves and make decisions within the board, with the aim of protecting their own interests. This argument is supported by recent studies looking at sustainability in developing countries which found insignificant results for outside directors. For example, McGuinness et al. (2017) and Fuente et al. (2017) reported that outside directors do not contribute to sustainability. Their data involved the Chinese and Spanish listed firms respectively. Using data from 3,876 public firms in 47 countries, Terjesen et al. (2015) also found zero relevance between external independent directors and firm performance. These findings support the argument which highlighted the non-correlational and non-linear

relationship between board independence and firm sustainability performance, also noted by scholars (Bowen, 2013; Johnson, 1971).

The current study also found a negative and insignificant relationship between board gender diversity and its sustainability performance. This finding does not support the hypothesis which states that the greater the number of women in the board, the better the sustainability performance, as supported by other studies (Byron & Post, 2016; Denis & McConnell, 2003; Fuente et al., 2017; Harjoto et al., 2015; McGuinness et al., 2017; Setó-Pamies, 2015; Shaukat et al., 2016; Velte et al., 2016). Evidence showing the insignificant relationship has also emerged in studies conducted in different contexts (Ben Barka & Dardour, 2015; Joseph, 2012; Muttakin et al., 2015). For example, a study done in 2010 on 255 directorships in the board of 20 listed companies in France found that gender did not have an impact on improving the CSP (Ben Barka & Dardour, 2015). Returning to the Bangladeshi corporate boards, it is an environment that is mainly dominated by males with some cases of female directors being selected based on family ties (Muttakin et al., 2015). Evidence for this claim is traced to the descriptive statistics which also support the minimal participation of female directors. Only an average of 1.72 of the board members were women directors while the mean board size was 10.08. Such lower number of female on the board may not be sufficient to influence the company's decisions. In addition to that, female directors on board of Bangladeshi corporations may be perceived as "tokens" – the women were selected for the purpose of fulfilling society's expectations or the expectations of some important stakeholders. In this regard, the marginalized women representation is seldom taken seriously by the board (Sultana et al., 2018). Consequently, this occurrence may also keep the women directors from exercising their duties and performance (Barnea & Rubin, 2010; Leszczynska, 2012). This argument is further endorsed by the work of Isaksson and Steimle (2009). They mentioned that prejudice towards female members can

lower the status of the female board members when compared to their male counterparts in the boardroom. Amongst some earlier studies conducted in Bangladesh, one conducted by Muttakin et al. (2015) examined women directors, and likewise, they noted a significant negative result. Two possible reasons can be used to explain this phenomenon. First, the female board members in Bangladeshi firms may have less education and less expertise. Second, these female board members were appointed based on their family ties as an insurance to ensure family dominance in decision-making. As such, these women board members were less likely to give emphasis to the CSR issues (Muttakin et al., 2015).

Finally, this study found a strong significant but negative relationship between board leadership (CEO duality) and corporate sustainability performance, a finding that is totally opposite to the positive hypothesis developed in H1c. This means that if the CEO was also the chair of the board, the level of corporate sustainability performance would deteriorate. This finding, henceforth, does not support the earlier evidence suggesting the CEO's duality positive association with performance (Brickley et al., 1997; Dey et al., 2011; Kim et al., 2009). The findings of the current study can be explained by considering the CEO's duality role through different lenses. For instance, when the CEO held the position of Chair, s/he would widen the power base and weaken the board's role of monitoring and evaluating the performance of the top management (White, 2005). Moreover, the CEO's duality role may promote the CEO's entrenchment by reducing the board's monitoring effectiveness (Cadbury, 1992; Colbert & Kurucz, 2007). Scholars such as Solomon and Darby (2005) and Starik and Rands (1995) support the separation of the CEO and Chair positions because it is believed that doing so can increase the independence of the board. Without doubt, the CEO's duality role led to a considerable concentration of power within the decision-making process. This concentration of power may work negatively, thereby exploiting firm sustainability. Such a practice is more rampant in the context of a country like Bangladesh

where the legal system for investor protection has not fully developed yet. The research findings of the current study are further summarized in Table 6.1.

Overall, only two sets of hypotheses out of six, were supported. The first set of hypotheses (Table 6.1) signified the direct effect of board of directors' characteristics on corporate sustainability performance. The outcome generated suggests that the sustainability performance was influenced by the board of directors indirectly, through internal control mechanisms. This will be examined in the next two sets of hypotheses. Their findings are also summarized in Table 6.2 and Table 6.3.

Table 6.1: Summary of research findings (Objective one)

Research Question	Research Objective	Hypotheses	Result	Supportive Empirical Evidence
1. What are the relationships between Board of Directors' characteristics (BDC) and Corporate Sustainability Performance (CSP)?	1. To investigate the relationships between BDC and CSP	H1a Board size is positively associated with corporate sustainability performance	Not Supported	Wang et al. (2018); Terjesen et al. (2015)
		H1b Board composition is positively associated with corporate sustainability performance	Not Supported	Fuente et al. (2017); Terjesen et al. (2015)
		H1c Board leadership is positively associated with corporate sustainability performance	Not Supported	Dyllick and Hockerts (2002); Starik and Rands (1995)
		H1d Board ownership is positively associated with corporate sustainability performance	Supported	McGuinness et al. (2017), Heald (2018)
		H1e Board diversity is positively associated with corporate sustainability performance	Not Supported	Ben Barka and Dardour (2015); Muttakin et al. (2015)
		H1f Board expertise is positively associated with corporate sustainability performance	Supported	Harjoto et al. (2015), Bowen (2013)

6.3.2 Board of Directors' Characteristics and Internal Control Mechanisms

To address research question two, as can be seen in Table 6.2, the second set of hypotheses investigated whether the board of directors' characteristics were positively associated with the use of Enterprise Risk Management (ERM) and Management Control Systems (MCS), within the Bangladeshi public listed companies. In this regard, three board characteristics (i.e. composition, leadership, and ownership) yielded significant path coefficients for the use of ERM and MCS. Board composition and ownership were found to have positive significant associations with use of ERM (H2b, H3b), and use of MCS (H2d and H3d) respectively. However, the significant but negative association between board leadership with ERM and MCS use, rejected the positive statement of H2c and H3c respectively. In addition to that, no significant relationship was found with regards to the association of board size, diversity, and expertise with ERM use (H2a, H2e, and H2f) and MCS use (H3a, H3e, and H3f) in the context of this study. The next section discusses the implications of such findings.

As mentioned above, the supportive hypotheses (H2b, H2d, H3b, and H3d) suggest that board composition (outside directors) and board ownership can positively influence the implementation of the resilient internal control mechanisms (i.e., use of ERM and MCS). This implies that the more outside directors and stock ownership of the board exists in the company, the more often ERM and MCS are implemented. These findings were expected due to the fact that the positive association of board composition and ownership with use of ERM and MCS, had been theoretically and empirically supported. For example, the resource dependence theory argues that competent board members may professionally discharge their responsibility towards the establishment of effective organisational control structures. With outside directors and board ownership, the board of directors are assumed

to be more competent and effective for integration of effective internal control mechanisms in organisation setting. In addition to the theoretical support, previous studies have evidence to support the positive association of outside directors and board ownership with the level of ERM and MCS use. Ballou et al. (2006) provided evidence of independent board with concentrated ownership having an important influence on the level of ERM adoption in the USA. Similarly, Desender (2011) found that firms with an independent board showed the highest level of ERM. In developing countries, Yazid et al. (2011) found that the quality of the board of directors (measured through its size and proportion of outside directors) played a significant role with respect to the ERM implementation in Malaysian Government-Linked Companies (GLCs). Likewise, extant literature (Hahn, 2011; Siew, 2015) have shown that the effective use of MCS increases with the pressure/encouragement from qualified board of directors. Often, qualified board relates to more outside directors with board ownership. Therefore, the current study reconfirm the findings of other relevant studies that reported positive association of board composition and board ownership with the use of company's internal control mechanisms.

In addition to the positive associations mentioned above, the current study also observed the negative significant association of board leadership (CEO duality) with the use of ERM and MCS (H2c and H3c). This means that if the position of the CEO and the chairman of the board were separated, the use of ERM and MCS increases. This finding was also noted by Fama and Jensen (1983a) who found that the separation of the CEO and the board's chairman position can lead to goal alignment as well as minimize the conflict of interest in the company. In short, when the director of the board is not the CEO of the firm, there is less conflict of interest in establishing a useful internal control environment, i.e., implementing ERM and MCS. It is the board of directors who initiate such an implementation of the ERM and MCS framework which complies with institutional norms

of good practices. Evidence is traced to Rachagan et al. (2002) who noted that encouragement from the board is one of the most important driving forces for the adoption of the ERM. Lam (2001) observed that the decision to implement ERM was made by the board of directors rather than by the CEO. One of the indicators that a firm has implemented ERM is appointment of a Chief Risk Officer (CRO) who directly report to board of directors and not to CEO. By creating a CRO position, a company is signalling both internally and externally that it is serious about integrating all of its risk management activities under a more powerful senior-level executives. Such CRO appointment may withstand the complete power base of CEO over the executives. Similarly, Desender (2011) noted that CEOs did not favour ERM implementation if they were able to withstand the pressure from the board when they were also the chairman of the board. Therefore, the separation of the CEO from the board chairman is good; it enhances the use of the internal control mechanisms (ERM and MCS).

In addition to the above statistically significant association the current study find no such association between three board characteristics (board size, diversity, and expertise) with use of internal control mechanisms. This findings are consistent with the other studies (Freundlieb et al., 2014; Kaptein & Wempe, 2002) that have noted that board characteristics like board size, diversity, and expertise were not significantly associated with the use of internal control mechanisms (ERM and MCS). It appears that larger boards may face a difficulty in resolving conflict of interest amongst themselves, and this may lead to the ineffective decision making for critical business case. Implementing the ERM and MCS framework is considered as critical for internal control structure and hence require effective and concentrated board supervision which is often impossible with large number of board members. In addition to that, this study had considered that the non-significance of board diversity and expertise is related to the specific context of Bangladesh, specifically, the

institutional characteristics such as ownership concentration and low level market activity caused by corporate control. In other word, Bangladesh is featured by control oriented finance predominantly either from family investors or financial institutions. Corporate ownership is rarely dispersed. No readily available liquid financial market restricts shareholders to rely on market mechanisms for their wealth protection All these made the decision of implementing ERM and MCS even more difficult for board of directors that are diversified and expert (Freundlieb et al., 2014; Kaptein & Wempe, 2002). As mentioned earlier, Bangladeshi corporate boards were typically male dominated, with most of the female board members being selected due to family ties (Muttakin et al., 2015). In that regard, these female board members would impose family dominance, with minimal concern for implementing ERM and MCS. Besides the gender issue, expert board members may find themselves to be the minority among the board of directors that is controlled by a majority with no expertise or are owners. According to descriptive statistics, this study reports only 0.93 expert directors in relation to 10.08 board members in a typical Bangladeshi board. This low ratio of expert board of directors would make the decision of firms for implementing ERM and MCS even less likely. Moreover, the optimal course of action is contingent (dependent) upon the internal and external situation such as, market condition, regulatory board support, political will etc. which, in this case, may not favour the expert board members. Table 6.2 illustrates the summary.

Table 6.2: Summary of research findings (Objective two)

Research Question	Research Objective	Hypotheses	Result	Supportive Empirical Evidence
2. Are Board of Directors' characteristics (BDC) associated with use of Enterprise Risk Management (ERM) and Management Control Systems (MCS)?	2. To examine the association of BDC with ERM and MCS use.	H2a Board size is positively associated with ERM use	Not Supported	Freundlieb et al. (2014); Kaptein and Wempe (2002); Ballou et al. (2006); Desender (2011); Hahn (2011); Siew (2015); Yazid et al. (2011)
		H2b Board composition is positively associated with ERM use	Supported	
		H2c Board leadership is positively associated with ERM use	Not Supported	
		H2d Board ownership is positively associated with ERM use	Supported	
		H2e Board diversity is positively associated with ERM use	Not Supported	
		H2f Board expertise is positively associated with ERM use	Not Supported	
		H3a Board size is positively associated with MCS use	Not Supported	
		H3b Board composition is positively associated with MCS use	Supported	
		H3c Board leadership is positively associated with MCS use	Not Supported	
		H3d Board ownership is positively associated with MCS use	Supported	
		H3e Board diversity is positively associated with MCS use	Not Supported	
		H3f Board expertise is positively associated with MCS use	Not Supported	

6.3.3 Internal Control Mechanisms and Corporate Sustainability Performance

The third set of hypotheses (summarized in Table 6.3) states that both the internal control mechanisms i.e., the ERM and MCS use, are positively linked with corporate sustainability performance. In other words, both the ERM and MCS use can enhance the sustainability performance of the listed Bangladeshi companies. Thus, the study hypotheses (H4 and H5) which state the positive association of ERM and MCS use with corporate sustainability performance among the Bangladeshi companies were supported. This implies that Bangladeshi companies which employed ERM and MCS use, tend to be superior to a greater extent, in terms of corporate sustainability performance. This result is consistent with the internal control literature which suggested that favourable control environment is, inevitably, important for attaining companies' long term performance goal (Crutzen et al., 2017; Nicholson & Kiel, 2007; Pagach & Warr, 2010; Qiu et al., 2016; Xiao et al., 2018)

As mentioned above, this study found evidence showing the positive link between ERM use and corporate sustainability performance in Bangladeshi listed companies. This outcome showed that ERM can influence corporate sustainability, thereby supporting hypothesis H4 with a 95% confidence interval. This strong significant link made sense because firms which adopt ERM experienced a reduction in earnings volatility, thereby, opening up the opportunity for a smoother and sustainable firm outcome (Pagach & Warr, 2010). This result is consistent with the risk management literature (Xiao et al., 2018) which suggested that there should be improved and sustained performance if risks could be identified, measured, and managed effectively. Although ERM stands for the holistic and overarching risk management approach, which is not involved in addressing particular risks threatening the current year's outcome, it is a great tool for firms to use in managing the overall and general risks, which can threaten the firm's sustainability. Moreover, ERM

improves decision making efficiency (Bird et al., 2007), which leads to profit maximisation upon the lowering of the marginal costs of risk management (Hammond & Slocum, 1996), and higher operating performance (Kim & Kim, 2014). Therefore, ERM use is supposed to improve sustainability performance.

This positive association can further be explained from the theory of corporate risk management, which argues that firms with smooth cash flows have lower expected tax liabilities, financial distress costs and contracting costs. This implies that managing risk adds value (Khandwalla, 1972, 1977; Merchant, 1981). Studies by scholars also noted that ERM could potentially add value and contribute to firm's sustainability. Beasley et al. (2008), for instance, found that ERM determines positive equity market reactions for the non-financial firms in the USA. Qiu et al. (2016) also found similar results between ERM adoption and enterprise value in European financial and non-financial companies. Examining an international and multi-industry study, Nations (2015) mentioned that firms with more matured ERM exhibit higher firm value. In line with this, Xiao et al. (2018) also asserted that Italian firms that adopted higher level ERM displayed higher market evaluation and financial performance. Dubin (1978) focused on both the financial and nonfinancial performance with ERM use for Malaysian PLCs. Their results also revealed a strong positive association. In another study, Latan et al. (2018) reasserted that ERM goes beyond alleviating negative outcomes; it also responds to multifaceted market factors. This ultimately improves corporate performance as a whole.

The other hypothesis, H5, maintains that the MCS positively influences corporate sustainability performance. Apart from management control theories, the management control literature (Nicholson & Kiel, 2007) can be used to support the argument that the development and implementation of sustainability strategy requires extensive

organizational learnings and change, and the support of appropriate mechanisms, such as management accounting and control. Management control systems can also support the strategic integration of sustainability within organizations (Crutzen & Herzig, 2013). Relying on the case of Procter and Gamble (P&G), Taticchi, Riccaboni, and Luisa Leone (2010), highlighted that formal and informal management controls helped in the implementation of sustainability strategies which enabled the achievement of sustainable goals. In a similar light, Panapanaan et al. (2003) provided evidence of using the MCS for adopting and managing CSR in Finnish companies. They noted that managing CSR with a global scope, problems such as; lack of information and structured management system, different views and interpretations, supply chain complexities, overlap with environmental issues, etc. often lead some companies to manage CSR haphazardly. Effective use of MCS can help overcome such problems thereafter help managers achieve CSR goals. In a more recent study, Duréndez et al. (2016) found that MCS use has a positive influence on the business performance for both family and non-family firms. Organizational objectives in family firms differ from those in non-family firms, as non-economic goals related to the family itself may be even more essential than the economic goals of the firm (Chua, Chrisman, & Sharma, 1999). Although the use of MCS can vary across different types of firms, between family and non-family firms, high level of use of MCS positively influence companies' level of performance for both type of firms (Duréndez et al., 2016). Table 6.3 illustrates a summary of the findings.

Table 6.3: Summary of research findings (Objective three)

Research Question	Research Objective	Hypotheses	Result	Supportive Empirical Evidence
3. Does use of Enterprise Risk Management (ERM) and Management Control Systems (MCS) related to Corporate Sustainability Performance (CSP)?	3. To investigate the association of using Enterprise Risk Management (ERM) and Management Control Systems (MCS) with Corporate Sustainability Performance (CSP).	H4 ERM use is positively associated with corporate sustainability performance	Supported	Beasley et al. (2008); Qiu et al. (2016); Nations (2015) ; Xiao et al. (2018); Dubin (1978); Latan et al. (2018); Taticchi et al. (2010);
		H5 MCS use is positively associated with corporate sustainability performance	Supported	Panapanaan et al. (2003); Duréndez et al. (2016)

6.3.4 Mediating Role of the Internal Control Mechanisms in the Relationship between the BDC and CSP

The fourth and final set of hypotheses that address research question four revealed that, the internal control mechanisms mediate the relationships between all the board of directors' characteristics (except for board size), and corporate sustainability performance. This is summarized in Table 6.4. As a result of this, the investigated data provided evidence in support of the hypotheses, H6b, H6c, H6d, H6e, H6f, H7b, H7c, H7d, H7e, and H7f. Among the twelve hypotheses assessed, ten were found to be statistically significant. This result supports the argument that the relationship between board characteristics and sustainability performance is for the most part, indirectly linked, and mediated through the internal control mechanisms of ERM and MCS. However, board size was not found to be directly or indirectly linked to corporate sustainability performance (H6a and H7a). It was mentioned in the above sections that the board of directors were not in the position to manage and operate the company towards sustainability performance. Rather, the board of directors hired and directed managers to perform in a way that was aligned to both the

shareholders' and stakeholders' interest. This was achieved by establishing a sound control environment which encompassed the ERM and MCS practices.

The empirical evidence generated by this study supported the findings of previous studies involving the BDC and CSP, which had been mainly generated mixed results. A large part of previous studies found positive results (Velte et al., 2016; Walls et al., 2012; Zhang, Zhu, et al., 2013) while others had found negative results (Muttakin et al., 2015) as well as insignificant relationship between them (Ben Barka & Dardour, 2015). These inconsistencies triggered the need to ascertain if other variables could mediate the relationship. Although internal control mechanisms are new to be admitted as a mediator between the BDC and CSP relationship, some studies (Crutzen & Herzig, 2013; Schäffer, Strauss, & Zecher, 2015; Soltanizadeh et al., 2016) had justified its position. For example, Crutzen and Herzig (2013) observed the emergence of new forms of accounting and control for sustainability which can support the strategic integration of sustainability into organizations. By the same token, Schäffer et al. (2015) also focussed on a German Mittelstand firm by examining how the decision-making of different organizational members was shaped by the various management control systems (MCSs). Schäffer et al. (2015) also explained how leaders (e.g. Board of Directors) can restructure their MCSs to influence human behaviour in times of radical change. Likewise, after examining 174 public listed companies in Malaysia, Soltanizadeh et al. (2016) noticed that ERM mediated the relationship between business strategy and organisational performance. From the results recorded earlier, there was evidence to show that the board of directors can influence the use of internal control mechanisms (H2 and H3). Further, the internal control mechanisms can also influence sustainability (H4 and H5). Therefore, the mediating role of the internal control mechanisms (ERM and MCS use) can reasonably be established in the relationship between the board of directors' characteristics and the corporate

sustainability performance. In the context of Bangladesh, the use of internal control mechanisms is further warranted as mediator between board of directors and corporate sustainability performance. Although the independence of the board is inevitably important to ensure shareholders' protection and sustainability, the independence of the board in Bangladesh is often debated. At the same time, takeovers and other market corporate controls are absent as the ownership is highly concentrated in the hands of family and lack of takeover regulations and due to non-efficient market (Rashid, 2018). Therefore use of internal control mechanisms such as ERM and MCS may alleviate the problem and may lead to sustainability of corporate performance.

Table 6.4: Summary of research findings (Objective four)

Research Question	Research Objective	Hypotheses	Result	Supportive Empirical Evidence
4. Does implementation of Enterprise Risk Management (ERM) and Management Control Systems (MCS) mediate the relationship between BDC and CSP?	4. To determine the mediation effect of ERM and MCS on BDC-CSP relationship	H6a	ERM use mediates the relationship between board size and corporate sustainability performance	Not Supported
		H6b	ERM use mediates the relationship between board composition and corporate sustainability performance	Supported
		H6c	ERM use mediates the relationship between board leadership and corporate sustainability performance	Supported

Table 6.4, continued

Research Question	Research Objective	Hypotheses	Result	Supportive Empirical Evidence
4. Does implementation of Enterprise Risk Management (ERM) and Management Control Systems (MCS) mediate the relationship between BDC and CSP?	4. To determine the mediation effect of ERM and MCS on BDC-CSP relationship	H6d	ERM use mediates the relationship between board ownership and corporate sustainability performance	Supported
		H6e	ERM use mediates the relationship between board diversity and corporate sustainability performance	Supported
		H6f	ERM use mediates the relationship between board expertise and corporate sustainability performance	Supported
		H7a	MCS use mediates the relationship between board size and corporate sustainability performance	Not Supported
		H7b	MCS use mediates the relationship between board composition and corporate sustainability performance	Supported
		H7c	MCS use mediates the relationship between board leadership and corporate sustainability performance	Supported

Table 6.4, continued

Research Question	Research Objective	Hypotheses	Result	Supportive Empirical Evidence
4. Does implementation of Enterprise Risk Management (ERM) and Management Control Systems (MCS) mediate the relationship between BDC and CSP?	4. To determine the mediation effect of ERM and MCS on BDC-CSP relationship	H7d	MCS use mediates the relationship between board ownership and corporate sustainability performance	Supported
		H7d	MCS use mediates the relationship between board ownership and corporate sustainability performance	Supported
		H7e	MCS use mediates the relationship between board diversity and corporate sustainability performance	Supported
		H7f	MCS use mediates the relationship between board expertise and corporate sustainability performance	Supported

Crutzen and Herzig (2013) ;
Schäffer et al. (2015);
Schäffer et al. (2015) ;
Soltanizadeh et al. (2016)

6.4 Implications of the Study

6.4.1 Theoretical Implication

There are at least four theoretical implications to be derived from this study. First and foremost, the important contribution of this study is to extant knowledge of the holistic conceptualization of corporate sustainability performance. As we know, in response to the internal and external pressures, many corporations have made a commitment to apply the principles of sustainability to their business. However, the term “sustainability” is a vague concept, where no consensus has yet, been established to determine the specific properties and boundaries for measuring corporate sustainability performance (CSP). Previous studies dealing with sustainability performance mostly focus on a particular dimension

of sustainability for example environmental (Jennifer Ho & Taylor, 2007; Park et al., 2018), social (McGuinness et al., 2017) or a combination of them for example environmental and social (A. Adams et al., 2014; Lu, 2013), environmental, social, and governance (Denis & McConnell, 2003; Kocmanova, Nemecek, & Docekalova, 2012b), economic, environmental, and social (Bhardwaj, Chatterjee, Demir, & Turut, 2018; Hussain et al., 2018). In this regard, a more comprehensive view is required so as to better understand sustainability performance and its determining aspect. This study, upon a rigorous literature review, found four dimensions of sustainability (financial, environmental, social, and governance) which commonly trigger the attention of scholars. As a result of this, they were then combined so as to conceptualise a holistic sustainability performance. Many researchers have also proposed these four dimensions of sustainability performance measurement in their conceptual papers but empirical studies have been scant. The current study offers some insights into this area of limited conceptual and empirical literature of corporate sustainability performance, by providing some empirical evidence.

The second implication of this study is that the findings generated also bridge the missing research gap that exists between corporate governance and corporate sustainability. These two disciplines have, individually, acquired most of the attention of scholars, in the past few decades. It seems that the scope of corporate governance is expanding, from merely concentrating on investors' protection (Fama & Jensen, 1983a) to addressing a wider aspect of stakeholders' interest (FRC, 2016; Garcia-Torea et al., 2016; Jo & Harjoto, 2012) but little attention is given to the interactions of corporate governance and corporate sustainability. Today's stakeholders are more discreet; they are now demanding for the incorporation of firm's sustainability. This demand has driven the need for studies to focus on the two contrasting disciplines. In

looking at their inter-connection, this study had proceeded to introducing some of the board of directors' characteristics as a possible association with corporate sustainability performance. The objective was to examine the relationship between the board of directors' characteristics with the most relevant structure of corporate governance and sustainability performance, in the context of public listed companies in Bangladesh. Among the limited studies that had examined the interaction between CG and CSP, findings showed that they too were unable to address the most important element of CG - the board of directors' characteristics to holistic CSP. Among the most prominent and comprehensive studies reviewed, Hussain et al. (2018) showed how board size, independence, CEO duality, diversity, and board committee were associated with environmental, social, and economic sustainability performance. However, they had overlooked the need to incorporate governance sustainability, which remains to be an important dimension, besides the triple bottom approach of corporate sustainability performance (Fama, 1980; Rahdari & Anvary Rostamy, 2015). Other crucial variables of board of directors' characteristics, such as expertise and ownership, had also been ignored even though they were of significance (the current study has evidence) in the relationship between CG and CSP.

Thirdly, unlike Hussain et al. (2018), the current study had conceptualised the BDC relationship to CSP, as an indirect one. It is widely accepted that the board of directors rarely have any direct influence on the firm performance (COSO, 2004, 2013; Siew, 2015) but traditional studies have been examining the direct relationship although their outcomes were of mixed results. Consequently, the current study argues that these inconsistent results manifested because other variables which can mediate this relationship, have not been taken into account. In this regard, the current study considered the internal control mechanisms, such as ERM and MCS as the mediator to

corporate sustainability performance. This outcome was found to be significant in most cases (except for board size). The results indicated that the board of directors can influence sustainability performance because there was a greater use of the internal control mechanisms within the firms. According to the literature reviewed for the current study, this indirect view of the BDC and CSP relationship, had not been examined before. Thus, the current study has taken to addressing this gap by looking into the CG-CSP relationship of firms by introducing the use of the internal control mechanisms.

The use of ERM and MCS as the mediator between the board and CSP relationship, is hereby, considered a contribution to literature. As discussed earlier, the use of internal control mechanisms as a mediator, is a new way to look at this noble relationship. Any variable that is used as the internal control mechanism would contribute to the knowledge of this indirect association. In the current study, both the ERM and MCS were selected for a special reason. The MCS and risk management are both an integral part of the traditional internal control systems but with the advancement of time, risk management has also become an independent focus. For example, COSO initially issued the Guidance on Monitoring Internal Control Systems, as a means to help organisations to understand and apply monitoring activities within their internal control systems, which included the MCS and risk management. Later on, more focus was given to the management control, which was issued as a supplementary ERM framework to meet the greater demand for a focused risk management approach. Although these frameworks are distinct and provide a different focus, they also overlap in some cases (COSO, 2004, 2013; Janvrin, Payne, Byrnes, Schneider, & Curtis, 2012; Moeller, 2007). In addition to that, the board of directors' responsibilities were viewed from two perspectives: risk management and other management controls (Soin & Collier, 2013) but only a few studies (Davis et al., 1997;

Sarens & Christopher, 2010) had combined these two important control mechanisms in their studies. Thus far, none of these studies had used these variables in connection to CG and CSP.

Finally, the context of this study was noted to be a significant contribution because most existing studies on corporate sustainability had mainly concentrated on developed nations, especially those in the western context. There is still a lack of empirical work conducted among developing nations and more specifically, there has been an exceptionally few studies done on corporate sustainability in the context of Bangladesh (Azizul Islam & Deegan, 2008; Davis, 1973; Freundlieb et al., 2014; Kaptein & Wempe, 2002; Muttakin et al., 2015). Bangladesh is one of the most promising developing countries and showing its commitment to sustainability and good governance throughout the last decades. For example, to meet constitutional obligation for ensuring sustainability and human centred development, the 6th five year plan (FYP) commits to an “environmentally sustainable development process” through conservation of natural resources, reduction of air and water pollution and recouping of encroached rivers, water bodies, forest areas and khas lands (government owned lands) which led the country to include a carbon tax in its 2017-2018 budget. In this regard, the current study contributes to the growing body of knowledge by providing empirical evidence to support the board of directors’ characteristics and its influence on corporate sustainability performance, as well as its association with ERM (Enterprise Risk Management) and MCS (Management Control Systems) in the context of Bangladesh. A study of this nature could be helpful to other developing nations with comparable political, economic, and cultural contexts.

6.4.2 Practical Implications

As discussed earlier, the primary objective of this study was to propose a comprehensive framework that can be used to attain the sustainability goal. For this to materialise, the current study included the board of directors' characteristics as a governance mechanism together with ERM and MCS, as the internal control mechanisms to facilitate holistic sustainability performance. Developing a model that addresses multi-level mechanisms contributes to practice from different aspects.

Firstly, the government and policy makers can get insights for effective planning to achieve the national sustainability goal. It is noteworthy that, as one of the top performing countries in terms of reaching the Millennium Development Goals (MDG), Bangladesh is equally confident in embracing the new Sustainable Development Goals (SDG) targets and the Prime Minister has expressed her deep commitment to achieving these before the year 2030. In the similar vein, this study may be used to develop and guide achieving corporate sustainability performance goals.

Secondly the study can benefit the general firm owners or the stakeholders outside the firms. It is noted that, the provision of the various board of directors' characteristics support the fact that stakeholders from the respective departments, need to appoint board members who have specific qualities. This is because we all are aware that shareholders are individual owners who have no interest or are not capable of leading the company to sustainability, unless they have certain expertise or qualities. Further, besides the board of directors, outside stakeholders have no power to influence the firm's strategy. The board of directors are entrusted with the authority to make decisions and to take actions that are aligned with the interest of the shareholders and stakeholders, at the policy level. Therefore, with the model developed in this study, practitioners can be better informed of the

appropriate qualities which the board of directors should possess so as to be of value to the firms concerned. By making reference to the model proposed in this study, the general firm owners or the stakeholders outside the firms are better informed of the selection of their board members, that is, they should focus on experts with larger ownerships because this will open up the opportunities to engage themselves in the firm's sustainability performance.

This study also bears another significant implication for practitioners. Indeed, it is absolutely necessary for managers to identify the drivers of sustainability performance within their firms, and to comprehend the causal links which are crucial for achieving the firm's sustainability goal. This study highlights the importance of internal control mechanisms as the critical factor and driver for sustainability performance. In addition, this study also emphasises on a few board attributes that could help to establish the ERM and MCS. The current study allows practitioners and organisations to gain a deeper insight of the dimensions to be used for the management of sustainability performance of firms as well as the type of control systems to be applied as general and risk management tools. In other words, practitioners and organisations can adopt suitable internal control mechanisms (including the design of MCS and ERM) which are appropriate for the greater level of sustainability in their respective corporations.

To sum up, the link among the board of directors' characteristics, internal control mechanisms, and corporate sustainability performance, could serve as a guide for both the internal and external practitioners of an organisation. This framework may also act as a checklist for companies to assess themselves so as to be in line with the extent to which they implement the internal control mechanisms which are necessary for corporate sustainability performance.

Practitioners, regulators, companies, and academicians are recommended to consider the following suggestions, which are consistent with the results of the current study.

Firstly, the outcome of this study suggests that it is an appropriate time for firms and other authorities, to reconsider the composition of the firm's board of directors and their attributes when making selections for board members because these qualities can influence the firm's sustainability. The board of directors is a component that had been considered to be the most crucial of corporate governance mechanisms. The current study had examined the relationship between two contrasting but closely aligned disciplines of corporate governance and sustainability. The findings of this study recommend that relevant parties need to reconsider the board's role and its impact on sustainability performance. More specifically, organisations may be directed to appoint and select appropriate directors with specific qualities such as those with expertise and greater ownership shares since these two attributes have been shown to impact firm's sustainability performance. For this to occur, stakeholders of different positions, board nomination committees, investors, governments and policy makers, can play a more committed role by encouraging firms to appoint highly qualified board members with greater ownership.

Secondly, the concept of 'corporate sustainability performance' for an individual firm, needs to be redefined. Currently, investors, regulators, and firm executives are in a dilemma on what 'sustainability performance' means. To alleviate this uncertainty, a general set of guidelines and policies need to be developed so that when practised, firms and their employees are able to detect and perceive the observable performance. Based on this, it is recommended that corporate sustainability performance be defined with all its four dimensions in all levels and in connection to the relevant industries, as has been outlined in the current study.

Thirdly, it is recommended that the board of directors be provided with enough support for attaining their firm's sustainability objectives. As the findings of the current study had shown the relationship between the board and sustainability was indirect and mediated through the internal control structure. In this regard, endeavours should be made to establish a convenient internal control within the organisation. Good internal controls can be achieved through the encouragement and support from the board of directors and top management. External parties like shareholders and stakeholders can also put emphasis on the establishment of an efficient internal control structure for gaining sustainability output.

Finally, it is recommended that both the ERM and MCS be used with greater care so that the internal control structure is set efficiently. However, the efficiency of the internal control structure may depend on the best use of the framework as proposed by the respective authorities. For this to be consistent to the study, the COSO framework for ERM and MCS conceptualization by both the diagnostic and interactive use of MCS, are recommended.

6.5 Limitations of the Study and Suggestions for Future Research

Limitations are obvious for any study carried out with any endeavour. This study is not without any shortfalls. In spite of the contributions this study made, as discussed above, this study is also subjected to some potential limitations in terms of internal and external validity. Nonetheless, these limitations could be considered as an opportunity for subsequent researchers to add value to current existing literature.

Firstly, this study used the questionnaire survey to inquire about sustainability performance and the internal control structure of the surveyed companies. The use of the questionnaire may contribute to some concerns on the reliability and validity of the data

since information collected for the use of internal control mechanisms (ERM and MCS) and corporate sustainability performance were derived from the primary data source. To alleviate this issue, other measures were taken to minimize the biasness. For example, the questionnaire was developed with great care; ethical clearance was obtained for such data collection (see appendix E), it was also tested to ensure that errors in terms of the reliability or the validity, were random and under acceptable limits. Nonetheless, using all secondary or primary source of information does not free the research from such errors since researchers themselves may be bias in their theories and theoretical concepts too. The other major concern on biasness generated for this study is that the study had relied heavily on the perceptions and opinions of the key informants. This study had used a self-rated survey where the performance was measured by the respective companies' chief financial officers (CFO). Even though the CFO's were deemed to be the most conversant person with regards to the inquired matters, there could be some degree of bias in practice when they assessed their own performance. Carrying out a survey and questioning the external parties such as customers, suppliers, allied partners, and competitors, at the same time, would have balanced the biasness. In addition to that, verifying the CFO's provided information by analysing the firms' annual reports or other secondary sources would also be beneficial. However, the scarcity of publicly available data on investigated issues, followed by the huge numbers of organisations, complicated this process.

Secondly, cross-sectional or one-shot data were used for capturing and measuring all the critical factors. This means that data were collected and analysed just once and at a static point of time, rather than for a period of time. It is imperative to attach importance to long-term effects as it is also noted that cross-sectional data analysis is incapable of generating conclusive evidence and causality. Instead of claiming causal relationship, the results should be viewed in line with the theoretical arguments and anticipated links.

Thirdly, despite the fact that this study had developed a holistic conceptualization of sustainability performance, it is still a challenge to specify this multifaceted concept for industries with complex work engagements. Although the study covered a wide range of industries including manufacturing, banking and non-banking financial, heavy and environmentally sensitive industries to get insights from different industry background, specific focus to a particular industry for example oil and gas, ternary and footwear, paper industry may produce deeper insights related to that industry. Moreover, this study concentrated on listed firms only which are deemed to be large firms. Future studies may explore non listed firms such as SMEs. Further, unlike academics, the term social, environmental, and governance sustainability, is still often misunderstood by practitioners to be a single dimension, without drawing any intense line amongst them. Moreover it is important to note that the relationship established are merely perceptions of managers. The reality of CSP might be completely different. Therefore, the findings of this study must be interpreted with caution, with regards to the association with sustainability performance. Nonetheless, this study had taken the necessary precautions to resolve the issues and the outcome generated from this study had also been supported by ample empirical and theoretical evidences.

Fourthly, this study engaged ERM use and MCS use as the two internal control mechanisms, with the assumption that they would represent a strong and convenient control environment of an organisation. Furthermore, ERM is conceptualized based on its eight components referred in COSO framework and MCS is conceptualized based on LOC framework (interactive and diagnostic) referred by Simons (1995). Future studies may test the study model using different conceptualization of ERM such as based on CRO appointment or disclosure approach etc. and similarly different conceptualization of MCS such as PMS or MCS package as proposed by Malmi and Brown (2008). It is important to

note that every control mechanism has its own limitations, and in most cases, the effective use of this control mechanism is also dependent on other factors, such as the management's willingness, expertise and the overall context of the company and country. Moreover, control systems go through different levels of processes, all of which may not affect the sustainability performance in a similar fashion. In addition to that, the current study had incorporated only six relevant board variables which were typically deemed to be resource-based demographic characteristics for the board of directors. If other demographic and psychological characteristics were included and their associations with other internal control mechanisms examined, the sustainability performance would be potentially different. Future studies may thus consider other control mechanisms, with specific focus on their different dimensions and levels as these may likely generate a greater value to the knowledge of such an association with sustainability and board of directors.

Finally, the generalisability of the result may be constrained as the data were collected from one country (Bangladesh) as representative of the developing countries in the world. The cultural differences among the developing countries may influence the social institutions, and this could serve as a potential limitation in explaining the results of the current study. National cultural differences can potentially affect the informants' perceptions in relation to corporate governance and sustainability. Therefore, the current framework that is embedded with the data of Bangladeshi public listed companies need to be further examined and compared with the samples of other countries before generalizing and modifying the concepts. A study involving a number of countries with a special focus on cultural variables, is therefore urged. In addition to that future studies can look into effect of different board attributes on individual dimensions of CSP. Moreover diagnostic and interactive use of MCS can also be separately examines that may generate more interesting findings.

6.6 Conclusion

Corporate sustainability is a multifaceted concept that is increasingly becoming more relevant to modern business performance evaluation. However, it is difficult to conceptualize sustainability performance at the company level because its definition has not been clearly defined or well described for practitioners. This study is an attempt to define corporate sustainability performance by considering all the dimensions that are deemed to capture the overall performance of a company. In effect, there are very few studies which focused on corporate governance, in general, and on the board of directors, in particular, when examining sustainability performance. In connection with the increasing demand for sustainability incorporation and good governance of companies, this study also examined the relationship between two contrasting but objectively aligned disciplines - corporate sustainability and board of directors' characteristics. In that regard, this study explored one interesting aspect – that is, which one of the board of directors' characteristics, can influence firm's sustainability performance. Linked to that, this study then addressed the issue of whether the level of internal control mechanisms (Use of ERM and MCS) may be influenced by the board of directors, thereby, leading to the firm's sustainability performance. The study delved into looking at the mediating effect of their (board of directors and sustainability performance) relationship.

This study had also obtained the results by analysing the data taken from the public listed companies of Bangladesh which represented the context of a developing country. Based on the results, it was suggested that the board of directors need to be experts with greater ownership of shares because these two qualities can significantly influence the firm's sustainability performance. It was further suggested that the position of the CEO be separated from the chair of the board before the separation trend can also ensure a better

sustainability performance. Outside directors and greater ownership shares of directors were found to be positively associated to the use of ERM and MCS. Added to this is that results also showed the strong positive association between the use of internal control mechanisms and sustainability performance. Further analysis showing the indirect effect also suggests that internal control mechanisms mediate the relationship of board of directors' characteristics and sustainability performance, in most cases. These findings implied that in the Bangladesh context, the board of directors' characteristics, such as their financial and business knowledge/experience, independence, and ownership of shares, can directly or indirectly affect sustainability outcomes. The effective use of internal control mechanisms such as ERM and MCS use are also highly recommended. These results were empirically and theoretically supported. For example, the agency theory argues for outside directors, greater board ownership, and separation of CEO and chair positions, to ensure a better monitoring and overseeing of firm's performance. In a similar vein, the resource dependence theory also advocates for an expert board of directors who can really advice and support the sustainability incorporation. The institutional theory also supports the effective use of the internal control mechanisms, in line with the pressure gained from the board of directors and other stakeholders. Nonetheless, the generalisation of these results is constrained as this study used a cross sectional self-rated questionnaire, where a few concepts had been overly dynamic and context specific.

6.7 Chapter Summary

This chapter brings the entire thesis to an end by critically analysing the results obtained and discussed in previous chapters, in line with the research framework and research objectives. The rationale for each key finding was also presented, in connection with addressing the findings of similar studies conducted in similar settings. This chapter

summarises the major contributions of the study followed by its limitations. Specific recommendations were also proposed for future endeavours so as to fortify the current results.

Universiti Malaysia

REFERENCES

- A. Adams, C., Muir, S., & Hoque, Z. (2014). Measurement of sustainability performance in the public sector. *Sustainability Accounting, Management and Policy Journal*, 5(1), 46-67. doi: 10.1108/sampj-04-2012-0018
- Aaker, D. A., Kumar, V., & Day, G. S. (2008). *Marketing research*: John Wiley & Sons.
- Abdel-Kader, M., & Luther, R. (2008). The impact of firm characteristics on management accounting practices: A UK-based empirical analysis. *The British Accounting Review*, 40(1), 2-27.
- Abernethy, M. A., Bouwens, J., & Van Lent, L. (2010). Leadership and control system design. *Management Accounting Research*, 21(1), 2-16.
- Adams, C. A., & McNicholas, P. (2007). Making a difference: Sustainability reporting, accountability and organisational change. *Accounting, Auditing & Accountability Journal*, 20(3), 382-402.
- Adams, K. A., & Lawrence, E. K. (2018). *Student Study Guide With IBM® SPSS® Workbook for Research Methods, Statistics, and Applications 2e*: SAGE Publications.
- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309. doi: <https://doi.org/10.1016/j.jfineco.2008.10.007>
- Adams, R. B., & Funk, P. (2012). Beyond the glass ceiling: does gender matter? *Management science*, 58(2), 219-235.
- Adler, P. S., & Chen, C. X. (2011). Combining creativity and control: Understanding individual motivation in large-scale collaborative creativity. *Accounting, Organizations and society*, 36(2), 63-85.
- Agrawal, A., & Chadha, S. (2005). Corporate governance and accounting scandals. *Journal of Law and Economics*, 48(2), 371-406. doi: 10.1086/430808
- Ahmad, S., & Omar, R. (2016). Basic corporate governance models: a systematic review. *International Journal of Law and Management*, 58(1), 73-107.

- Ahrens, T., & Chapman, C. S. (2007). Management accounting as practice. *Accounting, Organizations and society*, 32(1), 1-27.
- AICPA. (2016). What is Sustainability *American Institute of Certified Public Accountants* (Vol. 2016).
- Akbar, S., Kharabsheh, B., Poletti-Hughes, J., & Shah, S. Z. A. (2017). Board structure and corporate risk taking in the UK financial sector. *International Review of Financial Analysis*, 50, 101-110. doi: <https://doi.org/10.1016/j.irfa.2017.02.001>
- Akwaa-Sekyi, E. K., & Moreno Gené, J. (2016). Effect of internal controls on credit risk among listed Spanish banks. *Intangible Capital*, 12(1). doi: 10.3926/ic.703
- Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, Organizations and society*, 29(5-6), 447-471. doi: 10.1016/s0361-3682(03)00032-1
- Aliyu, N. S., Jamil, C. Z. M., & Mohamed, R. (2014). The mediating role of management control system in the relationship between corporate governance and the performance of bailed-out banks in Nigeria. *Procedia-Social and Behavioral Sciences*, 164, 613-620.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, 103(3), 411.
- Andow, H. A., & David, B. M. (2016). Ownership structure and the financial performance of listed conglomerate firms in Nigeria. *The Business & Management Review*, 7(3), 231.
- Anthony, R. N. (1965). *Planning and Control Systems: A Framework for Analysis [by]*: Division of Research, Graduate School of Business Administration, Harvard University.
- Anthony, R. N., Govindarajan, V., Hartmann, F. G., Kraus, K., & Nilsson, G. (2014). *Management control systems: European edition*: McGraw-Hill Education.
- Aras, G., & Crowther, D. (2008). Governance and sustainability: An investigation into the relationship between corporate governance and corporate sustainability. *Management Decision*, 46(3), 433-448.

- Arjaliès, D.-L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, 24(4), 284-300.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of marketing research*, 396-402.
- Arosa, B., Iturralde, T., & Maseda, A. (2013). The board structure and firm performance in SMEs: Evidence from Spain. *Investigaciones Europeas de Dirección y Economía de la Empresa*, 19(3), 127-135.
- Artiach, T., Lee, D., Nelson, D., & Walker, J. (2010). The determinants of corporate sustainability performance. *Accounting & Finance*, 50(1), 31-51. doi: 10.1111/j.1467-629X.2009.00315.x
- Asiaei, K. (2014). *Intellectual capital and organizational performance: the mediating role of performance measurement system*. University of Malaya.
- Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal*, 28(2), 446-463.
- Ayuso, S., & Argandoña, A. (2007). Responsible corporate governance: towards a stakeholder Board of Directors? *Working Paper, IESE Business School – University of Navarra*.
- Azizul Islam, M., & Deegan, C. (2008). Motivations for an organisation within a developing country to report social responsibility information: evidence from Bangladesh. *Accounting, Auditing & Accountability Journal*, 21(6), 850-874.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, 16(1), 74-94.
- Bain, N., & Band, D. (2016). *Winning ways through corporate governance*: Springer.
- Ballou, B., Heitger, D., & Landes, C. (2006). The rise of corporate sustainability reporting: A rapidly growing assurance opportunity. *Journal of Accountancy*, 202(6), 65-74.
- Bansal, P. (2005). Evolving sustainably: a longitudinal study of corporate sustainable development. *Strategic management journal*, 26(3), 197-218. doi: 10.1002/smj.441

- Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic management journal*, 10(S1), 107-124.
- Barnard, C. I. (1938). the functions of the executive, Harvard University press. *Cambridge, MA*.
- Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics*, 97(1), 71-86.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
- Bartolomeo, M., Bennett, M., Bouma, J. J., Heydkamp, P., James, P., & Wolters, T. (2000). Environmental management accounting in Europe: current practice and future potential. *European Accounting Review*, 9(1), 31-52.
- Bassen, A., & Kovacs, A. M. M. (2008). Environmental, social and governance key performance indicators from a capital market perspective.
- Bathula, H. (2008). *Board characteristics and firm performance: Evidence from New Zealand*. Auckland University of Technology.
- Baumgartner, R. J. (2014). Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development. *Corporate Social Responsibility and Environmental Management*, 21(5), 258-271.
- Baxter, D., & Vermeulen, P. (2013). Intelligent ERM: Evolving risk management. *Journal of Financial Perspectives*, 1(3), 19-27.
- Beasley, M., Pagach, D., & Warr, R. (2008). Information conveyed in hiring announcements of senior executives overseeing enterprise-wide risk management processes. *Journal of Accounting, Auditing & Finance*, 23(3), 311-332.
- Beasley, M. S., Clune, R., & Hermanson, D. R. (2005). Enterprise risk management: An empirical analysis of factors associated with the extent of implementation. *Journal of Accounting and Public Policy*, 24(6), 521-531.

- Beekun, R. I., Stedham, Y., & Young, G. J. (1998). Board characteristics, managerial controls and corporate strategy: A study of US hospitals. *Journal of management*, 24(1), 3-19.
- Ben Barka, H., & Dardour, A. (2015). Investigating the relationship between director's profile, board interlocks and corporate social responsibility. *Management Decision*, 53(3), 553-570.
- Benn, S., Edwards, M., & Williams, T. (2014). *Organizational change for corporate sustainability*: Routledge.
- Bentler, P. M., & Mooijart, A. (1989). Choice of structural model via parsimony: A rationale based on precision. *Psychological bulletin*, 106(2), 315.
- Berardi, L., Rea, M. A., & Bellante, G. (2016). How Board and CEO Characteristics Can Affect Italian and Canadian Nonprofit Financial Performance *Governance and Performance in Public and Non-Profit Organizations* (Vol. 5, pp. 131-157). Bingley BD16 1WA, United Kingdom: Emerald Group Publishing Limited.
- Bergman, M. M., Bergman, Z., & Berger, L. (2017). An empirical exploration, typology, and definition of corporate sustainability. *Sustainability*, 9(5), 753.
- Berle, A. A., & Means, G. C. (1932). Modern corporation and private property.
- Berrone, P., & Gomez-Mejia, L. R. (2009). Environmental performance and executive compensation: An integrated agency-institutional perspective. *Academy of Management Journal*, 52(1), 103-126.
- Bhardwaj, P., Chatterjee, P., Demir, K. D., & Turut, O. (2018). When and how is corporate social responsibility profitable? *Journal of business research*, 84, 206-219.
- Bhattacharjee, A. (2012). Social science research: Principles, methods, and practices.
- Bird, R., Hall, A. D., Momentè, F., & Reggiani, F. (2007). What corporate social responsibility activities are valued by the market? *Journal of Business Ethics*, 76(2), 189-206.
- Bird, R. C., Borochin, P. A., & Knopf, J. D. (2015). The role of the chief legal officer in corporate governance. *Journal of Corporate Finance*, 34(5), 1-22.

- Blair, M. M. (1995). *Ownership and control: rethinking corporate governance for the 21st century*: Brookings Institution.
- Blalock Jr, H. M., & Costner, H. L. (1969). Multiple indicators and the causal approach to measurement error. *American Journal of Sociology*, 75(2), 264-273.
- Bleicher, K. (2011). *Das Konzept integriertes Management: Visionen-Missionen-Programme*: Campus Verlag.
- Boerner, H. (2010). Sustainable and responsible investment: The revolution is on. *Corporate Finance Review*, 14(6), 39.
- Bonn, I., Yoshikawa, T., & Phan, P. H. (2004). Effects of board structure on firm performance: A comparison between Japan and Australia. *Asian Business & Management*, 3(1), 105-125.
- Bowen, H. R. (2013). *Social responsibilities of the businessman*: University of Iowa Press.
- Boyd, B. K. (1995). CEO duality and firm performance: A contingency model. *Strategic management journal*, 16(4), 301-312.
- Boyer, M. M., & Tennyson, S. (2015). Directors' and officers' liability insurance, corporate risk and risk taking: New panel data evidence on the role of directors' and officers' liability insurance. *Journal of Risk and Insurance*, 82(4), 753-791.
- Brammer, S., & Pavelin, S. (2004). Building a good reputation. *European Management Journal*, 22(6), 704-713.
- Brickley, J. A., Coles, J. L., & Jarrell, G. (1997). Leadership structure: Separating the CEO and chairman of the board. *Journal of corporate Finance*, 3(3), 189-220.
- Brickley, J. A., Lease, R. C., & Smith, C. W. (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20(Supplement C), 267-291. doi: [https://doi.org/10.1016/0304-405X\(88\)90047-5](https://doi.org/10.1016/0304-405X(88)90047-5)
- Brillinger, D. R. (2002). John W. Tukey: his life and professional contributions. *Annals of Statistics*, 1535-1575.
- Broadbent, J., & Laughlin, R. (2009). Performance management systems: A conceptual model. *Management Accounting Research*, 20(4), 283-295.

- Bromiley, P., McShane, M., Nair, A., & Rustambekov, E. (2015). Enterprise risk management: Review, critique, and research directions. *Long range planning*, 48(4), 265-276.
- Brown, W. O., Helland, E., & Smith, J. K. (2006). Corporate philanthropic practices. *Journal of corporate finance*, 12(5), 855-877.
- Brundtland, G. H. (1987). Our common future—Call for action. *Environmental Conservation*, 14(4), 291-294.
- Brunninge, O., Nordqvist, M., & Wiklund, J. (2007). Corporate governance and strategic change in SMEs: The effects of ownership, board composition and top management teams. *Small Business Economics*, 29(3), 295-308.
- Bryman, A., & Bell, E. (2015). *Business research methods*: Oxford University Press, USA.
- Burak Güner, A., Malmendier, U., & Tate, G. (2008). Financial expertise of directors. *Journal of Financial Economics*, 88(2), 323-354. doi: <http://dx.doi.org/10.1016/j.jfineco.2007.05.009>
- Burns, R. B. (1997). *Introduction to research methods*: Addison Wesley Longman.
- Byron, K., & Post, C. (2016). Women on Boards of Directors and Corporate Social Performance: a Meta-Analysis. *Corporate governance: An international review*, 24(4), 428-442.
- Cadbury, A. (1992). The code of best practice. *Report of the Committee on the Financial Aspects of Corporate Governance, Gee and Co Ltd*, 27.
- Cadbury, S. A. (2000). *Global corporate governance*. Paper presented at the Global Corporate Governance Forum.
- Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, 83(3), 435-451.
- Carlock, R., & Florent-Treacy, E. (2003). The HP-Compaq Merger: A battle for the heart and soul of a company. *International Journal of Entrepreneurship Education*, 1(3), 419-454.

- Carpenter, M. A., & Westphal, J. D. (2001). The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision making. *Academy of Management Journal*, 44(4), 639-660.
- Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business & society*, 38(3), 268-295.
- Carver, J. (2000). The Opportunity for Re-inventing Corporate Governance in Joint Venture Companies. *Corporate governance: An international review*, 8(1), 75-80.
- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*: John Wiley & Sons Australia.
- Certo, S. T., Lester, R. H., Dalton, C. M., & Dalton, D. R. (2006). Top management teams, strategy and financial performance: A meta-analytic examination. *Journal of Management studies*, 43(4), 813-839.
- Chabowski, B. R., Mena, J. A., & Gonzalez-Padron, T. L. (2011). The structure of sustainability research in marketing, 1958–2008: a basis for future research opportunities. *Journal of the Academy of Marketing Science*, 39(1), 55-70.
- Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, Organizations and society*, 22(2), 189-205.
- Chen, T. (2015). Institutions, board structure, and corporate performance: Evidence from Chinese firms. *Journal of Corporate Finance*, 32, 217-237. doi: <https://doi.org/10.1016/j.jcorpfin.2014.10.009>
- Cheng, S. (2008). Board size and the variability of corporate performance. *Journal of Financial Economics*, 87(1), 157-176.
- Cheng, Y.-T., & Van de Ven, A. H. (1996). Learning the innovation journey: Order out of chaos? *Organization science*, 7(6), 593-614.
- Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and society*, 28(2-3), 127-168.
- Chih, H.-L., Chih, H.-H., & Chen, T.-Y. (2010). On the determinants of corporate social responsibility: International evidence on the financial industry. *Journal of Business Ethics*, 93(1), 115-135.

- Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling: JSTOR.
- Chin, W. W. (2010). Bootstrap cross-validation indices for PLS path model assessment *Handbook of partial least squares* (pp. 83-97): Springer.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, 14(2), 189-217.
- Cho, M.-H. (1998). Ownership structure, investment, and the corporate value: an empirical analysis. *Journal of financial economics*, 47(1), 103-121.
- Christofi, A., Christofi, P., & Sisaye, S. (2012). Corporate sustainability: historical development and reporting practices. *Management Research Review*, 35(2), 157-172.
- Chua, J. H., Chrisman, J. J., & Sharma, P. (1999). Defining the family business by behavior. *Entrepreneurship theory and practice*, 23(4), 19-39.
- Chua, W. F. (1986). Radical developments in accounting thought. *Accounting review*, 601-632.
- Chung, K. H., & Pruitt, S. W. (1996). Executive ownership, corporate value, and executive compensation: A unifying framework. *Journal of Banking & Finance*, 20(7), 1135-1159. doi: [https://doi.org/10.1016/0378-4266\(95\)00039-9](https://doi.org/10.1016/0378-4266(95)00039-9)
- Clark, J. M. (1916). The changing basis of economic responsibility. *Journal of political economy*, 24(3), 209-229.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and society*, 33(4-5), 303-327.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2011). Does it really pay to be green? Determinants and consequences of proactive environmental strategies. *Journal of Accounting and Public Policy*, 30(2), 122-144.
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences 2nd edn: Erlbaum Associates, Hillsdale.

- Colbert, B. A., & Kurucz, E. C. (2007). Three conceptions of triple bottom line business sustainability and the role for HRM. *People and Strategy*, 30(1), 21.
- Coles, J. L., Daniel, N. D., & Naveen, L. (2008). Boards: Does one size fit all? *Journal of financial economics*, 87(2), 329-356.
- Corbetta, G., Gnan, L., & Montemerlo, D. (2002). Governance system and company performance in Italian SMEs. *Milano: Università Bocconi, Working Paper Isea*.
- Cordeiro, J. J., & Sarkis, J. (1997). Environmental proactivism and firm performance: evidence from security analyst earnings forecasts. *Business Strategy and the Environment*, 6(2), 104-114.
- Cosenz, F., & Noto, L. (2015). Combining system dynamics modelling and management control systems to support strategic learning processes in SMEs: a Dynamic Performance Management approach. *Journal of Management Control*, 26(2-3), 225-248.
- COSO. (2004). Enterprise risk management: integrated framework *Committee of Sponsoring Organizations of Treadway Commission*.
- COSO. (2013). Internal control-Integrated framework *Committee of Sponsoring Organizations of the Treadway Commission: American Institute of Certified Public Accountants*.
- Crifo, P., Escrig-Olmedo, E., & Mottis, N. (2018). Corporate Governance as a Key Driver of Corporate Sustainability in France: The Role of Board Members and Investor Relations. *Journal of Business Ethics*, 1-20.
- Crowther, D. (2002). *A social critique of corporate reporting: a semiotic analysis of corporate financial and environmental reporting*. Farnham, United Kingdom: Ashgate Publishing.
- Crutzen, N., & Herzig, C. (2013). A review of the empirical research in management control, strategy and sustainability. *Studies in managerial and financial accounting*, 26, 165-195.
- Crutzen, N., Zvezdov, D., & Schaltegger, S. (2017). Sustainability and management control. Exploring and theorizing control patterns in large European firms. *Journal of cleaner production*, 143, 1291-1301.

- Daily, C. M., & Dalton, D. R. (2003). Women in the boardroom: A business imperative. *Journal of Business strategy*, 24(5).
- Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. (1999). Number of directors and financial performance: A meta-analysis. *Academy of Management Journal*, 42(6), 674-686.
- Das, T. K., & Teng, B.-S. (2000). A resource-based theory of strategic alliances. *Journal of management*, 26(1), 31-61.
- Daud, W. N. W., Haron, H., & Ibrahim, D. N. (2011). The role of quality board of directors in enterprise risk management (ERM) practices: Evidence from binary logistic regression. *International Journal of Business and Management*, 6(12), 205.
- Daud, W. N. W., Yazid, A. S., & Hussin, H. M. R. (2010). The effect of chief risk officer (CRO) on enterprise risk management (ERM) practices: evidence from Malaysia. *The International Business & Economics Research Journal*, 9(11), 55.
- David, F. R. (2011). *Strategic management: Concepts and cases*: Peaeson/Prentice Hall.
- Davila, A., & Foster, G. (2005). Management accounting systems adoption decisions: evidence and performance implications from early-stage/startup companies. *The Accounting Review*, 80(4), 1039-1068.
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22(1), 20-47.
- Davis, K. (1973). The case for and against business assumption of social responsibilities. *Academy of Management Journal*, 16(2), 312-322.
- De Cabo, R. M., Gimeno, R., & Nieto, M. J. (2012). Gender diversity on European banks' boards of directors. *Journal of Business Ethics*, 109(2), 145-162.
- Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures—a theoretical foundation. *Accounting, Auditing & Accountability Journal*, 15(3), 282-311.
- Deegan, C. (2013). *Financial accounting theory*: McGraw-Hill Education Australia.

- Deegan, C., Rankin, M., & Tobin, J. (2002). An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 15(3), 312-343.
- DeFond, M. L., Hann, R. N., & Hu, X. (2005). Does the market value financial expertise on audit committees of boards of directors? *Journal of accounting research*, 43(2), 153-193.
- Demb, A., & Neubauer, F.-F. (1992). The corporate board: Confronting the paradoxes. *Long range planning*, 25(3), 9-20.
- Demsetz, H. (1983). The structure of ownership and the theory of the firm. *The Journal of law and economics*, 26(2), 375-390.
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7(3), 209-233. doi: [https://doi.org/10.1016/S0929-1199\(01\)00020-7](https://doi.org/10.1016/S0929-1199(01)00020-7)
- Denis, D. K., & McConnell, J. J. (2003). International corporate governance. *Journal of financial and quantitative analysis*, 38(1), 1-36.
- Desender, K. A. (2011). On the determinants of enterprise risk management implementation. *Enterprise IT governance, business value and performance measurement*, Nan Si Shi and Gilbert Silvius, eds., IGI Global.
- Desender, K. A., Aguilera, R. V., Lópezpuertas-Lamy, M., & Crespi, R. (2016). A clash of governance logics: Foreign ownership and board monitoring. *Strategic management journal*, 37(2), 349-369. doi: 10.1002/smj.2344
- Dess, G. G., & Robinson, R. B. (1984). Measuring organizational performance in the absence of objective measures: the case of the privately-held firm and conglomerate business unit. *Strategic management journal*, 5(3), 265-273.
- Deutsch, Y. (2005). The impact of board composition on firms' critical decisions: A meta-analytic review. *Journal of management*, 31(3), 424-444.
- Dey, A., Engel, E., & Liu, X. (2011). CEO and board chair roles: To split or not to split? *Journal of Corporate Finance*, 17(5), 1595-1618. doi: <http://dx.doi.org/10.1016/j.jcorpfin.2011.09.001>

- Diamantopoulos, A., & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British Journal of Management*, 17(4), 263-282.
- DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147-160.
- Ditillo, A., & Lisi, I. E. (2014). Towards a more comprehensive framework for sustainability control systems research *Accounting for the Environment: More Talk and Little Progress* (Vol. 5, pp. 23-47). Bingley BD16 1WA, United Kingdom: Emerald Group Publishing Limited.
- Dixon, W. J. (1960). Simplified estimation from censored normal samples. *The Annals of Mathematical Statistics*, 31(2), 385-391.
- Dočekalová, M. P., & Kocmanová, A. (2016). Composite indicator for measuring corporate sustainability. *Ecological Indicators*, 61, 612-623.
- Drazin, R., & Van de Ven, A. H. (1985). Alternative forms of fit in contingency theory. *Administrative science quarterly*, 514-539.
- Dubin, R. (1978). *Theory building* (Rev. ed.): New York: Free Press.
- Duhan, S. (2007). A capabilities based toolkit for strategic information systems planning in SMEs. *International Journal of Information Management*, 27(5), 352-367.
- Duréndez, A., Ruíz-Palomo, D., García-Pérez-de-Lema, D., & Diéguez-Soto, J. (2016). Management control systems and performance in small and medium family firms. *European Journal of Family Business*, 6(1), 10-20. doi: 10.1016/j.ejfb.2016.05.001
- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business strategy and the environment*, 11(2), 130-141.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2012). *Management research*: Sage.
- Eisenberg, M. A. (1997). The board of directors and internal control. *Cardozo L. Rev.*, 19, 237.
- Eisenberg, M. A. (2006). *The structure of the corporation: A legal analysis*: Beard Books.

- Eldridge, S., van Iwaarden, J., van der Wiele, T., & Williams, R. (2013). Management control systems for business processes in uncertain environments. *International Journal of Quality & Reliability Management*, 31(1), 66-81.
- Eling, M., & Marek, S. D. (2014). Corporate governance and risk taking: Evidence from the UK and German insurance markets. *Journal of Risk and Insurance*, 81(3), 653-682.
- Elkington, J. (1998). Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management*, 8(1), 37-51.
- Engert, S., Rauter, R., & Baumgartner, R. J. (2016). Exploring the integration of corporate sustainability into strategic management: a literature review. *Journal of cleaner production*, 112, 2833-2850. doi: 10.1016/j.jclepro.2015.08.031
- Esteban-Sanchez, P., de la Cuesta-Gonzalez, M., & Paredes-Gazquez, J. D. (2017). Corporate social performance and its relation with corporate financial performance: International evidence in the banking industry. *Journal of cleaner production*, 162, 1102-1110.
- Fakir, A. A., Jusoh, R., & Rahin, N. M. (2019). Board of directors' characteristics, internal control mechanisms and corporate sustainability performance: a theoretical framework. *World Review of Entrepreneurship, Management and Sustainable Development*, 15(6), 765-784.
- Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of political economy*, 88(2), 288-307.
- Fama, E. F., & Jensen, M. C. (1983a). Agency problems and residual claims. *The journal of law & Economics*, 26(2), 327-349.
- Fama, E. F., & Jensen, M. C. (1983b). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research*, 20(4), 263-282.
- Fidler, F., Cumming, G., Thomason, N., Pannuzzo, D., Smith, J., Fyffe, P., . . . Schmitt, R. (2005). Toward improved statistical reporting in the journal of consulting and clinical psychology. *Journal of Consulting and Clinical Psychology*, 73(1), 136.

- Finkelstein, S., & Hambrick, D. C. (1996). *Strategic leadership: Top executives and their effects on organizations*. Nashville, USA: South-Western Pub.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 39-50.
- Fort, T. L. (1999). The first man and the company man: The common good, transcendence, and mediating institutions. *American Business Law Journal*, 36(3), 391-435.
- FRC. (2016). The UK corporate governance code *London: Financial Reporting Council*.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*: Cambridge university press.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). *Stakeholder theory: The state of the art*: Cambridge University Press.
- Freundlieb, M., Gräuler, M., & Teuteberg, F. (2014). A conceptual framework for the quality evaluation of sustainability reports. *Management Research Review*, 37(1), 19-44.
- Friedman, M. (1970). The Social Responsibility of Business is to Increase its Profits.
- Frijns, B., Dodd, O., & Cimerova, H. (2016). The impact of cultural diversity in corporate boards on firm performance. *Journal of Corporate Finance*, 41, 521-541. doi: 10.1016/j.jcorpfin.2016.07.014
- Frost, G. R., & Wilmshurst, T. D. (2000). *The Adoption of Environment-related management accounting: an analysis of corporate environmental sensitivity*. Paper presented at the Accounting Forum.
- Fry, L. W., & Slocum Jr, J. W. (1984). Technology, structure, and workgroup effectiveness: A test of a contingency model. *Academy of Management Journal*, 27(2), 221-246.
- Fuente, J. A., García-Sánchez, I. M., & Lozano, M. B. (2017). The role of the board of directors in the adoption of GRI guidelines for the disclosure of CSR information. *Journal of cleaner production*, 141, 737-750. doi: 10.1016/j.jclepro.2016.09.155

- Gabrielsson, J., & Winlund, H. (2000). Boards of directors in small and medium-sized industrial firms: examining the effects of the board's working style on board task performance. *Entrepreneurship & Regional Development*, 12(4), 311-330.
- Galbraith, J. R., & Nathanson, D. A. (1979). The role of organizational structure and process in strategy implementation. *Strategic management: A new view of business policy and planning*, 249-283.
- Galbreath, J. (2009). Building corporate social responsibility into strategy. *European business review*, 21(2), 109-127.
- Gao, J., & Bansal, P. (2013). Instrumental and integrative logics in business sustainability. *Journal of Business Ethics*, 112(2), 241-255.
- Garcia-Torea, N., Fernandez-Feijoo, B., & de la Cuesta, M. (2016). Board of director's effectiveness and the stakeholder perspective of corporate governance: Do effective boards promote the interests of shareholders and stakeholders? *BRQ Business Research Quarterly*, 19(4), 246-260.
- Gatzert, N., & Martin, M. (2015). Determinants and value of enterprise risk management: empirical evidence from the literature. *Risk Management and Insurance Review*, 18(1), 29-53.
- Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1), 7.
- Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of marketing research*, 186-192.
- Ghelli, C. (2013). *Corporate Social Responsibility and financial performance: An Empirical Evidence*. MSc Finance & Strategic Management. Copenhagen Business School, Copenhagen, Denmark.
- Gibbert, M. (2006). Generalizing about uniqueness: An essay on an apparent paradox in the resource-based view. *Journal of management Inquiry*, 15(2), 124-134.
- Gladwin, T. N., Kennelly, J. J., & Krause, T.-S. (1995). Shifting paradigms for sustainable development: Implications for management theory and research. *Academy of Management Review*, 20(4), 874-907.

- Golshan, N. M., Zaleha, S., & Rasid, A. (2012). Determinants of Enterprise Risk Management Adoption: An Empirical Analysis of Malaysian Public Listed Firms.
- Gond, J.-P., Grubnic, S., Herzig, C., & Moon, J. (2012). Configuring management control systems: Theorizing the integration of strategy and sustainability. *Management Accounting Research*, 23(3), 205-223.
- Goodpaster, K. E. (1996). Bridging the East and the West in management ethics: Kyosei and the moral point of view. *Journal of Human Values*, 2(2), 115-121.
- Gordon, L. A., Loeb, M. P., & Tseng, C.-Y. (2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy*, 28(4), 301-327.
- Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society*, 22(2), 105-122.
- Govindarajan, V., & Fisher, J. (1990). Strategy, control systems, and resource sharing: Effects on business-unit performance. *Academy of Management Journal*, 33(2), 259-285.
- Goyal, P., Rahman, Z., & Kazmi, A. (2013). Corporate sustainability performance and firm performance research: literature review and future research agenda. *Management Decision*, 51(2), 361-379.
- Goyder, G. (1961). *The Responsible Company*. Blackwell: Oxford.
- Graham, J. R., Harvey, C. R., & Puri, M. (2013). Managerial attitudes and corporate actions. *Journal of Financial Economics*, 109(1), 103-121.
- Grant, R. M. (1996). Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization science*, 7(4), 375-387.
- GSIA. (2017). Global sustainable investment review 2016 *Global Sustainable Investment Alliance* (Vol. 2017).
- Guest, P. M. (2009). The impact of board size on firm performance: evidence from the UK. *The European Journal of Finance*, 15(4), 385-404.

- Guillén, M. F. (2000). Corporate governance and globalization: is there convergence across countries? *Advances in international comparative management*, 13, 175-204.
- Guo, Z., & Kga, U. K. (2012). Corporate Governance and Firm Performance of Listed Firms in Sri Lanka. *Procedia - Social and Behavioral Sciences*, 40, 664-667. doi: <https://doi.org/10.1016/j.sbspro.2012.03.246>
- Guthrie, J., & Parker, L. D. (1989). Corporate social reporting: a rebuttal of legitimacy theory. *Accounting and Business Research*, 19(76), 343-352.
- Haenlein, M., & Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding statistics*, 3(4), 283-297.
- Hahn, R. (2011). Integrating corporate responsibility and sustainable development: A normative-conceptual approach to holistic management thinking. *Journal of Global Responsibility*, 2(1), 8-22.
- Hahn, R. (2013). ISO 26000 and the standardization of strategic management processes for sustainability and corporate social responsibility. *Business Strategy and the Environment*, 22(7), 442-455.
- Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research. *Journal of cleaner production*, 59, 5-21.
- Hahn, T., & Aragón-Correa, J. A. (2015). Toward cognitive plurality on corporate sustainability in organizations: The role of organizational factors: SAGE Publications Sage CA: Los Angeles, CA.
- Hahn, T., Figge, F., Pinkse, J., & Preuss, L. (2018). A paradox perspective on corporate sustainability: Descriptive, instrumental, and normative aspects. *Journal of Business Ethics*, 148(2), 235-248.
- Hahn, T., & Pinkse, J. (2014). Private environmental governance through cross-sector partnerships: Tensions between competition and effectiveness. *Organization & Environment*, 27(2), 140-160.
- Hahn, T., & Scheermesser, M. (2006). Approaches to corporate sustainability among German companies. *Corporate Social Responsibility and Environmental Management*, 13(3), 150-165. doi: 10.1002/csr.100

- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science*, 40(3), 414-433.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage Publications.
- Hammond, S. A., & Slocum, J. W. (1996). The impact of prior firm financial performance on subsequent corporate reputation. *Journal of Business Ethics*, 15(2), 159-165.
- Hansen, G. S., & Hill, C. W. (1991). Are institutional investors myopic? A time-series study of four technology-driven industries. *Strategic Management Journal*, 12(1), 1-16.
- Hansen, G. S., & Wernerfelt, B. (1989). Determinants of firm performance: The relative importance of economic and organizational factors. *Strategic management journal*, 10(5), 399-411.
- Hanushek, E. A., & Jackson, J. E. (1977). Statistical models for social scientists. *New York: Academic*.
- Hao, C., Cui, G., Liu, X., & Gui, S. (2017). Empirical research on risk taking of listed financial institutions based on the perspective of corporate governance. *Research on Modern Higher Education*, 2(unknown), 25-31.
- Harjoto, M., Laksmana, I., & Lee, R. (2015). Board diversity and corporate social responsibility. *Journal of Business Ethics*, 132(4), 641-660.
- Harman, H. H. (1976). *Modern factor analysis*: University of Chicago press.
- Hastings Jr, C., Mosteller, F., Tukey, J. W., & Winsor, C. P. (1947). Low moments for small samples: a comparative study of order statistics. *The Annals of Mathematical Statistics*, 413-426.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication monographs*, 76(4), 408-420.

- Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis methodology: a regression-based approach.
- Hayes, A. F., & Rockwood, N. J. (2017). Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy*, 98, 39-57.
- Heald, M. (2018). *The social responsibilities of business: Company and community, 1900-1960*: Routledge.
- Henri, J.-F. (2006). Management control systems and strategy: A resource-based perspective. *Accounting, Organizations and society*, 31(6), 529-558.
- Hermalin, B. E., & Weisbach, M. S. (1988). The determinants of board composition. *The RAND Journal of Economics*, 589-606.
- Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, 96-118.
- Hill, S. A., & Birkinshaw, J. (2008). Strategy–organization configurations in corporate venture units: Impact on performance and survival. *Journal of Business Venturing*, 23(4), 423-444.
- Hillman, A. J., Cannella, A. A., & Paetzold, R. L. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management studies*, 37(2), 235-256.
- Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396.
- Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource Dependence Theory: A Review. *Journal of management*, 35(6), 1404-1427. doi: 10.1177/0149206309343469
- Himmelberg, C. P., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of financial economics*, 53(3), 353-384.
- Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2012). *Strategic management cases: competitiveness and globalization*: Cengage Learning.

- Holderness, C. G., Kroszner, R. S., & Sheehan, D. P. (1999). Were the good old days that good? Changes in managerial stock ownership since the great depression. *The Journal of Finance*, 54(2), 435-469.
- Homburg, C., Krohmer, H., & Workman Jr, J. P. (1999). Strategic consensus and performance: The role of strategy type and market-related dynamism. *Strategic management journal*, 339-357.
- Hopwood, A. G. (1976). *Accounting and human behavior*. Upper Saddle River, New Jersey, USA: Prentice Hall.
- Hoque, Z. (2004). A contingency model of the association between strategy, environmental uncertainty and performance measurement: impact on organizational performance. *International Business Review*, 13(4), 485-502.
- Horváth, R., & Spirollari, P. (2012). Do the Board of Directors' Characteristics Influence Firm's Performance? The U.S. Evidence. *Prague Economic Papers*, 21(4), 470-486. doi: 10.18267/j.pep.435
- Hoyt, R. E., & Liebenberg, A. P. (2008). *The value of enterprise risk management: Evidence from the US insurance industry*. Paper presented at the unpublished paper, accessed at: http://www.aria.org/meetings/2006papers/Hoyt_Liebenberg_ERM_070606.pdf.
- Hoyt, R. E., & Liebenberg, A. P. (2011). The value of enterprise risk management. *Journal of Risk and Insurance*, 78(4), 795-822.
- Huang, Y. S., & Wang, C.-J. (2015). Corporate governance and risk-taking of Chinese firms: The role of board size. *International Review of Economics & Finance*, 37(3), 96-113.
- Huse, M. (2000). Boards of directors in SMEs: A review and research agenda. *Entrepreneurship & Regional Development*, 12(4), 271-290.
- Huse, M., & Landström, H. (2002). *Teaching Corporate Governance: Challenges for Research and Practice*. Paper presented at the EURAM conference Stockholm.
- Hussain, N., Rigoni, U., & Orij, R. P. (2018). Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance. *Journal of Business Ethics*, 149(2), 411-432.

- Igalens, J., & Gond, J.-P. (2005). Measuring corporate social performance in France: A critical and empirical analysis of ARESE data. *Journal of Business Ethics*, 56(2), 131-148.
- Iivari, J., Hirschheim, R., & Klein, H. K. (1998). A paradigmatic analysis contrasting information systems development approaches and methodologies. *Information Systems Research*, 9(2), 164-193.
- Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, 43(9), 834-864.
- Ioannou, I., & Serafeim, G. (2017). The consequences of mandatory corporate sustainability reporting.
- Isaksson, R., & Steimle, U. (2009). What does GRI-reporting tell us about corporate sustainability? *The TQM Journal*, 21(2), 168-181.
- Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate governance: An international review*, 17(4), 492-509.
- Janvrin, D. J., Payne, E. A., Byrnes, P., Schneider, G. P., & Curtis, M. B. (2012). The updated COSO Internal Control-Integrated Framework: Recommendations and opportunities for future research. *Journal of Information Systems*, 26(2), 189-213.
- Jennifer Ho, L. C., & Taylor, M. E. (2007). An empirical analysis of triple bottom-line reporting and its determinants: evidence from the United States and Japan. *Journal of International Financial Management & Accounting*, 18(2), 123-150.
- Jensen, M. C. (2002). Value maximization, stakeholder theory, and the corporate objective function. *Business ethics quarterly*, 235-256.
- Jensen, M. C. (2017). Value maximisation, stakeholder theory and the corporate objective function *Unfolding stakeholder thinking* (pp. 65-84): Routledge.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. doi: [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jensen, M. C., & Murphy, K. J. (1990). Performance Pay and Top-Management Incentives. *Journal of Political Economy*, 98(2), 225-264. doi: 10.1086/261677

- Jin, Z., & Bai, Y. (2011). Sustainable development and long-term strategic management: Embedding a long-term strategic management system into medium and long-term planning. *World Future Review*, 3(2), 49-69.
- Jo, H., & Harjoto, M. A. (2011). Corporate governance and firm value: The impact of corporate social responsibility. *Journal of Business Ethics*, 103(3), 351-383.
- Jo, H., & Harjoto, M. A. (2012). The causal effect of corporate governance on corporate social responsibility. *Journal of Business Ethics*, 106(1), 53-72.
- Johnson, H. L. (1971). *Business in contemporary society: Framework and issues*: Wadsworth Pub. Co.
- Johnson, J. L., Daily, C. M., & Ellstrand, A. E. (1996). Boards of directors: A review and research agenda. *Journal of management*, 22(3), 409-438.
- Johnson, P., & Duberley, J. (2000). *Understanding management research: An introduction to epistemology*: Sage.
- Johnson, R. A., Hoskisson, R. E., & Hitt, M. A. (1993). Board of director involvement in restructuring: The effects of board versus managerial controls and characteristics. *Strategic management journal*, 14(S1), 33-50.
- Jonsson, E. I. (2005). The role model of the board: A preliminary study of the roles of Icelandic boards. *Corporate governance: An international review*, 13(5), 710-717.
- Joseph, G. (2012). Ambiguous but tethered: An accounting basis for sustainability reporting. *Critical perspectives on Accounting*, 23(2), 93-106.
- Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation review*, 5(5), 602-619.
- Judge, W. (2012). The importance of considering context when developing a global theory of corporate governance. *Corporate governance: An international review*, 20(2), 123-124.
- Kaku, R. (1997). The path of Kyosei. *Harvard Business Review*, 75, 55-64.
- Kallunki, J.-P., Laitinen, E. K., & Silvola, H. (2011). Impact of enterprise resource planning systems on management control systems and firm performance. *International Journal of Accounting Information Systems*, 12(1), 20-39.

- Kaptein, M., & Wempe, J. F. D. B. (2002). *The balanced company: A theory of corporate integrity*: Oxford University Press, USA.
- Kempshall, M. S. (1999). The common good in late medieval political thought.
- Khandwalla, P. N. (1972). The effect of different types of competition on the use of management controls. *Journal of Accounting Research*, 275-285.
- Khandwalla, P. N. (1977). *The design of organizations*.
- Kim, K.-H., Al-Shammari, H. A., Kim, B., & Lee, S.-H. (2009). CEO duality leadership and corporate diversification behavior. *Journal of business research*, 62(11), 1173-1180. doi: <http://dx.doi.org/10.1016/j.jbusres.2008.10.017>
- Kim, M., & Kim, Y. (2014). Corporate social responsibility and shareholder value of restaurant firms. *International Journal of Hospitality Management*, 40, 120-129.
- Kim, Y. (2005). Board network characteristics and firm performance in Korea. *Corporate governance: An international review*, 13(6), 800-808.
- King, A. M. (2011). *Internal control of fixed assets: a controller and auditor's guide* (Vol. 564): John Wiley & Sons.
- Kiron, D., Kruschwitz, N., Haanaes, K., & von Streng Velken, I. (2012). Sustainability nears a tipping point. *MIT Sloan Management Review*, 53(2), 69-74.
- Kiron, D., Kruschwitz, N., Rubel, H., Reeves, M., & Fuisz-Kehrbach, S.-K. (2013). Sustainability's next frontier: Walking the talk on the sustainability issues that matter most. *MIT Sloan Management Review Research Report*.
- Kleffner, A. E., Lee, R. B., & McGannon, B. (2003). The Effect of Corporate Governance on the Use of Enterprise Risk Management: Evidence From Canada. *Risk Management & Insurance Review*, 6(1), 53-73. doi: 10.1111/1098-1616.00020
- Kober, R., Ng, J., & Paul, B. J. (2007). The interrelationship between management control mechanisms and strategy. *Management Accounting Research*, 18(4), 425-452.
- Kocmanova, A., Nemecek, P., & Docekalova, M. (2012a). Environmental, Social and Governance (ESG) Key Performance Indicators for Sustainable Reporting. 655-662. doi: 10.3846/bm.2012.085

- Kocmanova, A., Nemecek, P., & Docekalova, M. (2012b). *Environmental, social and governance (ESG) key performance indicators for sustainable reporting*. Paper presented at the The 7th International Scientific Conference.
- Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization science*, 3(3), 383-397.
- Kolk, A., & Perego, P. (2010). Determinants of the adoption of sustainability assurance statements: An international investigation. *Business strategy and the environment*, 19(3), 182-198.
- Kraakman, R., & Hansmann, H. (2017). The end of history for corporate law *Corporate Governance* (pp. 49-78): Gower.
- Kraft, M. E., & Furlong, S. R. (2012). *Public policy: Politics, analysis, and alternatives*: Cq Press.
- Kuhn, T. S. (1962). The structure of scientific revolutions. *Vol. 2*, 31-65.
- Kunst, V., & Beugelsdijk, S. (2018). *Managerial Ownership and Firm Performance: The Cultural Boundaries of Agency Theory*. Paper presented at the Academy of Management Proceedings.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The journal of finance*, 54(2), 471-517.
- Labuschagne, C., Brent, A. C., & Van Erck, R. P. (2005). Assessing the sustainability performances of industries. *Journal of cleaner production*, 13(4), 373-385.
- Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. *Journal of financial economics*, 93(2), 259-275.
- Lahaut, V. M., Jansen, H. A., van de Mheen, D., Garretsen, H. F., Verdurmen, J. E., & Van Dijk, A. (2003). Estimating non-response bias in a survey on alcohol consumption: comparison of response waves. *Alcohol and Alcoholism*, 38(2), 128-134.
- Lai, F.-W., & Samad, F. A. (2010). Enterprise risk management framework and the empirical determinants of its implementation. *Risk*, 6(7), 8.
- Lakis, V., & Giriūnas, L. (2012). The concept of internal control system: Theoretical aspect. *Ekonomika*, 91.

- Lam, J. (2001). The CRO is here to stay. *Risk Management*, 48(4), 16.
- Langfield-Smith, K. (1997). Management control systems and strategy: a critical review. *Accounting, Organizations and society*, 22(2), 207-232.
- Larcker, D. F., Richardson, S. A., & Tuna, I. (2007). Corporate governance, accounting outcomes, and organizational performance. *The accounting review*, 82(4), 963-1008.
- Latan, H., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., Wamba, S. F., & Shahbaz, M. (2018). Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: The role of environmental management accounting. *Journal of cleaner production*, 180, 297-306.
- Laufer, W. S. (2003). Social accountability and corporate greenwashing. *Journal of Business Ethics*, 43(3), 253-261.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative science quarterly*, 1-47.
- Lee, K.-H., & Saen, R. F. (2012). Measuring corporate sustainability management: A data envelopment analysis approach. *International Journal of Production Economics*, 140(1), 219-226.
- Lenssen, G., Nijhof, A., Roger, L., Kievit, H., Lenssen, J.-J., A. Dentchev, N., & Roger, L. (2014). Sustainability, risk management and governance: towards an integrative approach. *Corporate Governance*, 14(5), 670-684.
- Leszczynska, A. (2012). Towards shareholders' value: an analysis of sustainability reports. *Industrial management & data systems*, 112(6), 911-928.
- Levi, M., Li, K., & Zhang, F. (2014). Director gender and mergers and acquisitions. *Journal of Corporate Finance*, 28, 185-200. doi: 10.1016/j.jcorpfin.2013.11.005
- Liang, Q., Xu, P., & Jiraporn, P. (2013). Board characteristics and Chinese bank performance. *Journal of Banking & Finance*, 37(8), 2953-2968.
- Liebenberg, A. P., & Hoyt, R. E. (2003). The determinants of enterprise risk management: Evidence from the appointment of chief risk officers. *Risk Management and Insurance Review*, 6(1), 37-52.

- Loderer, C., & Martin, K. (1997). Executive stock ownership and performance tracking faint traces. *Journal of Financial Economics*, 45(2), 223-255.
- Lourenço, I. C., & Branco, M. C. (2013). Determinants of corporate sustainability performance in emerging markets: the Brazilian case. *Journal of cleaner production*, 57, 134-141.
- Lozano, R., Carpenter, A., & Huisingh, D. (2015). A review of 'theories of the firm' and their contributions to Corporate Sustainability. *Journal of cleaner production*, 106, 430-442.
- Lu, W. (2013). An Exploration Of The Associations Among Corporate Sustainability Performance, Corporate Governance, And Corporate Financial Performance. *The University of Texas, USA, PhD thesis*.
- Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of Business Ethics*, 105(3), 375-388.
- Maher, M., & Andersson, T. (2002). Corporate governance: effects on firm performance and economic growth. *Convergence and Diversity in Corporate Governance Regimes and Capital Markets*, Oxford University Press, Oxford, 386-420.
- Mallin, C. A., & Michelon, G. (2011). Board reputation attributes and corporate social performance: An empirical investigation of the US best corporate citizens. *Accounting and Business Research*, 41(2), 119-144.
- Malmi, T. (2010). Reflections on paradigms in action in accounting research. *Management Accounting Research*, 21(2), 121-123.
- Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, 19(4), 287-300.
- March, J. G., & Sutton, R. I. (1997). Crossroads—organizational performance as a dependent variable. *Organization science*, 8(6), 698-706.
- Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. *Administrative science quarterly*, 48(2), 268-305.
- Maritain, J. (1994). *The person and the common good*: University of Notre Dame Press.

- McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial economics*, 27(2), 595-612.
- McGrath, R. G. (2001). Exploratory learning, innovative capacity, and managerial oversight. *Academy of Management Journal*, 44(1), 118-131.
- McGuinness, P. B., Lam, K. C., & Vieito, J. P. (2015). Gender and other major board characteristics in China: Explaining corporate dividend policy and governance. *Asia Pacific Journal of Management*, 32(4), 989-1038.
- McGuinness, P. B., Vieito, J. P., & Wang, M. (2017). The role of board gender and foreign ownership in the CSR performance of Chinese listed firms. *Journal of Corporate Finance*, 42, 75-99. doi: 10.1016/j.jcorpfin.2016.11.001
- McGuinness, T., & Morgan, R. E. (2000). Strategy, dynamic capabilities and complex science: management rhetoric vs. reality. *Strategic Change*, 9(4), 209.
- McRoy, R. G. (1995). Qualitative research. *Encyclopedia of social work*, 19.
- McShane, M. K., Nair, A., & Rustambekov, E. (2011). Does enterprise risk management increase firm value? *Journal of Accounting, Auditing & Finance*, 26(4), 641-658.
- Melé, D. (2002). Not only stakeholder interests. The firm oriented toward the common good. *Rethinking the purpose of business. Interdisciplinary essays from catholic social tradition*, 190-214.
- Melin, L., & Nordqvist, M. (2002). The dynamics of family firms: an institutional perspective on corporate governance and strategic change *Understanding the small family business* (pp. 108-124): Routledge.
- Merchant, K. A. (1981). The design of the corporate budgeting system: influences on managerial behavior and performance. *Accounting Review*, 813-829.
- Merchant, K. A. (1985). *Control in business organization*. Upper Saddle River, New Jersey, USA: Financial Times/Prentice Hall.
- Merchant, K. A., & Van der Stede, W. A. (2011). *Management control systems: performance measurement, evaluation and incentives (3rd Edition)*: Upper Saddle River, NJ: Prentice Hall.

- Meulbroek, L. K. (2002). Integrated risk management for the firm: a senior manager's guide *SSRN* (Vol. 2017).
- Miller, D., & Friesen, P. H. (1982). Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. *Strategic management journal*, 3(1), 1-25.
- Minton, B. A., Taillard, J. P., & Williamson, R. (2014). Financial expertise of the board, risk taking, and performance: Evidence from bank holding companies. *Journal of Financial and Quantitative Analysis*, 49(02), 351-380.
- Mizruchi, M. S. (1983). Who controls whom? An examination of the relation between management and boards of directors in large American corporations. *Academy of Management Review*, 8(3), 426-435.
- Moeller, R. R. (2007). *COSO enterprise risk management: understanding the new integrated ERM framework*: John Wiley & Sons.
- Mohd Khalid, F., Lord, B. R., & Dixon, K. (2012). Environmental management accounting implementation in environmentally sensitive industries in Malaysia.
- Montiel, I., & Delgado-Ceballos, J. (2014). Defining and measuring corporate sustainability: Are we there yet? *Organization & Environment*, 27(2), 113-139.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of financial economics*, 20, 293-315.
- Morioka, S. N., & Carvalho, M. M. (2016). Measuring sustainability in practice: exploring the inclusion of sustainability into corporate performance systems in Brazilian case studies. *Journal of cleaner production*, 136 (Special)(Part A (November)).
- Müller, V.-O. (2014). The impact of board composition on the financial performance of FTSE100 constituents. *Procedia-Social and Behavioral Sciences*, 109, 969-975.
- Munir, R., Baird, K., & Perera, S. (2013). Performance measurement system change in an emerging economy bank. *Accounting, Auditing & Accountability Journal*, 26(2), 196-233.
- Murray, A., Haynes, K., & Hudson, L. J. (2010). Collaborating to achieve corporate social responsibility and sustainability? Possibilities and problems. *Sustainability Accounting, Management and Policy Journal*, 1(2), 161-177.

- Muttakin, M. B., Khan, A., & Subramaniam, N. (2015). Firm characteristics, board diversity and corporate social responsibility: Evidence from Bangladesh. *Pacific Accounting Review*, 27(3), 353-372.
- Myers, S. C., & Read Jr, J. A. (2001). Capital allocation for insurance companies. *Journal of Risk and Insurance*, 545-580.
- Nadeem, M., Zaman, R., & Saleem, I. (2017). Boardroom gender diversity and corporate sustainability practices: Evidence from Australian Securities Exchange listed firms. *Journal of cleaner production*, 149, 874-885.
- Nakagawa, S., & Cuthill, I. C. (2007). Effect size, confidence interval and statistical significance: a practical guide for biologists. *Biological reviews*, 82(4), 591-605.
- Nathalie, R. (2018). Bangladesh, UN Consider Expected LDC Graduation in 2024. Retrieved 29-05-2019, 2018
- Nathan, M. L. (2010). 'Lighting tomorrow with today': towards a (strategic) sustainability revolution. *International Journal of Sustainable Strategic Management*, 2(1), 29-40.
- Nations, U. (2015). Transforming our world: The 2030 agenda for sustainable development. *Resolution adopted by the General Assembly*.
- Nau, C., & Breuer, N. (2014). ESG performance and corporate financial performance: an empirical study of the US technology sector.
- Neubauer, F., & Lank, A. G. (2016). *The family business: Its governance for sustainability*: Springer.
- Nguyen, T. T., Mia, L., Winata, L., & Chong, V. K. (2017). Effect of transformational-leadership style and management control system on managerial performance. *Journal of business research*, 70(1), 202-213.
- Nicholson, G. J., & Kiel, G. C. (2007). Can directors impact performance? A case-based test of three theories of corporate governance. *Corporate governance: An international review*, 15(4), 585-608.
- Nocco, B. W., & Stulz, R. M. (2006). Enterprise risk management: Theory and practice. *Journal of applied corporate finance*, 18(4), 8-20.

- Nollet, J., Filis, G., & Mitrokostas, E. (2016). Corporate social responsibility and financial performance: A non-linear and disaggregated approach. *Economic Modelling*, 52, 400-407.
- Nunnally, J. (2010). *Psychometric Theory 3E: Tata McGraw-Hill Education* (Vol. 3): McGraw-Hill New York.
- O'Dwyer, B. (2005). The construction of a social account: a case study in an overseas aid agency. *Accounting, Organizations and society*, 30(3), 279-296.
- O'Sullivan, M. (2001). Contests for corporate control: Corporate governance and economic performance in the United States and Germany. *OUP Catalogue*.
- O'Connell, V., & Cramer, N. (2010). The relationship between firm performance and board characteristics in Ireland. *European Management Journal*, 28(5), 387-399. doi: <https://doi.org/10.1016/j.emj.2009.11.002>
- Orsato, R. J. (2006). Competitive environmental strategies: when does it pay to be green? *California management review*, 48(2), 127-143.
- Ortiz-de-Mandojana, N., & Aragon-Correa, J. A. (2015). Boards and sustainability: the contingent influence of director interlocks on corporate environmental performance. *Business Strategy and the Environment*, 24(6), 499-517.
- Otley, D. (1999). Performance management: a framework for management control systems research. *Management Accounting Research*, 10(4), 363-382.
- Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, 31, 45-62.
- Otley, D. T. (1980). The contingency theory of management accounting: achievement and prognosis *Readings in accounting for management control* (pp. 83-106): Springer.
- Pagach, D., & Warr, R. (2010). The effects of enterprise risk management on firm performance *SSRN* (Vol. 2017).
- Pagach, D., & Warr, R. (2011). The characteristics of firms that hire chief risk officers. *Journal of Risk and Insurance*, 78(1), 185-211.

- Palia, D., & Lichtenberg, F. (1999). Managerial ownership and firm performance: A re-examination using productivity measurement. *Journal of Corporate Finance*, 5(4), 323-339. doi: [https://doi.org/10.1016/S0929-1199\(99\)00009-7](https://doi.org/10.1016/S0929-1199(99)00009-7)
- Pallant, J. (2016). SPSS survival manual: a step by step guide to data analysis using IBM SPSS, 6. th edn: Open University Press, Maidenhead.
- Panapanaan, V. M., Linnanen, L., Karvonen, M.-M., & Phan, V. T. (2003). Roadmapping corporate social responsibility in Finnish companies. *Journal of Business Ethics*, 44(2-3), 133-148.
- Paniagua, J., Rivelles, R., & Sapena, J. (2018). Corporate governance and financial performance: The role of ownership and board structure. *Journal of business research*, 89, 229-234.
- Park, J., Park, H.-Y., & Lee, H.-Y. (2018). The Effect of Social Ties between Outside and Inside Directors on the Association between Corporate Social Responsibility and Firm Value. *Sustainability*, 10(11), 3840.
- Parker, H., & Ameen, K. (2017). The role of resilience capabilities in shaping how firms respond to disruptions. *Journal of business research*, 88(6), 535-541.
- Pathan, S. (2009). Strong boards, CEO power and bank risk-taking. *Journal of Banking & Finance*, 33(7), 1340-1350.
- Pfeffer, J. (1973). Size, composition, and function of hospital boards of directors: A study of organization-environment linkage. *Administrative science quarterly*, 18(3), 349-364.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York, USA: Harper and Row Publishers.
- Pfister, J., & Hartmann, F. (2011). Managing organizational culture for effective internal control: From practice to theory. *The Accounting Review*, 86(2), 738-741.
- Phillis, Y. A., & Andriantiatsaholainaina, L. A. (2001). Sustainability: an ill-defined concept and its assessment using fuzzy logic. *Ecological Economics*, 37(3), 435-456.
- Pieper, T. (2003). *Corporate governance in family firms: A literature review*: Insead.

- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Post, C., Rahman, N., & McQuillen, C. (2015). From board composition to corporate environmental performance through sustainability-themed alliances. *Journal of Business Ethics*, 130(2), 423-435.
- Post, C., Rahman, N., & Rubow, E. (2011). Green Governance: Boards of Directors' Composition and Environmental Corporate Social Responsibility. *Business & Society*, 50(1), 189-223. doi: 10.1177/0007650310394642
- Powell, W. W., & DiMaggio, P. J. (2012). *The new institutionalism in organizational analysis*: University of Chicago Press.
- Prahalad, C. K., & Hamel, G. (2006). The core competence of the corporation *Strategische unternehmensplanung—strategische unternehmensführung* (pp. 275-292): Springer.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, 40(3), 879-891.
- Preston, L. E., & O'bannon, D. P. (1997). The corporate social-financial performance relationship. *Business and society*, 36(4), 419.
- Priem, R. L., & Butler, J. E. (2001). Is the resource-based “view” a useful perspective for strategic management research? *Academy of Management Review*, 26(1), 22-40.
- Prowse, S. D. (1994). *Corporate governance in an international perspective: a survey of corporate control mechanisms among large firms in the United States, the United Kingdom, Japan and Germany*: Bank for International Settlements.
- Przychodzen, J., & Przychodzen, W. (2013). Corporate sustainability and shareholder wealth. *Journal of Environmental Planning and Management*, 56(4), 474-493.

- Qiu, Y., Shaukat, A., & Tharyan, R. (2016). Environmental and social disclosures: Link with corporate financial performance. *The British Accounting Review*, 48(1), 102-116.
- Rachagan, S., Pascoe, J., & Joshi, A. (2002). *Principles of company law in Malaysia*: Malayan Law Journal.
- Rahdari, A. H., & Anvary Rostamy, A. A. (2015). Designing a general set of sustainability indicators at the corporate level. *Journal of Cleaner Production*, 108, 757-771. doi: 10.1016/j.jclepro.2015.05.108
- Rahdari, A. H., & Rostamy, A. A. A. (2015). Designing a general set of sustainability indicators at the corporate level. *Journal of cleaner production*, 108, 757-771.
- Rashid, A. (2018). Board independence and firm performance: Evidence from Bangladesh. *Future Business Journal*, 4(1), 34-49. doi: <https://doi.org/10.1016/j.fbj.2017.11.003>
- Rashid, A., De Zoysa, A., & Rudkin, K. (2007). *Corporate governance in Bangladesh: an overview*. Paper presented at the Proceedings of the 19th Asian-Pacific Conference on International Accounting Issues.
- Razali, A. R., Yazid, A. S., & Tahir, I. M. (2011). The determinants of enterprise risk management (ERM) practices in Malaysian public listed companies. *Journal of Social and Development Sciences*, 1(5), 202-207.
- Riccaboni, A., & Luisa Leone, E. (2010). Implementing strategies through management control systems: the case of sustainability. *International Journal of Productivity and Performance Management*, 59(2), 130-144.
- Ringle, C., Wende, S., & Will, A. (2005). Smart-PLS Version 2.0 M3. *University of Hamburg*.
- Rittenberg, L. E., & Schwieger, B. J. (2001). *Auditing: Concepts for a Changing Environment*: Harcourt College Publishers.
- Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and society*, 17(6), 595-612.
- Rothaermel, F. T. (2016). *Strategic management: concepts* (Vol. 2): McGraw-Hill Education.

- Rungtusanatham, M., Miller, J., & Boyer, K. (2014). Theorizing, testing, and concluding for mediation in SCM research: Tutorial and procedural recommendations. *Journal of Operations Management*, 32(3), 99-113.
- Sakka, O., Barki, H., & Côté, L. (2013). Interactive and diagnostic uses of management control systems in IS projects: antecedents and their impact on performance. *Information & Management*, 50(6), 265-274.
- Salmon, W. J. (1993). Crisis prevention: how to gear up your board. *Harvard Business Review*, 71(1), 68-75.
- Salzmann, O., Ionescu-somers, A., & Steger, U. (2005). The Business Case for Corporate Sustainability. *European Management Journal*, 23(1), 27-36. doi: 10.1016/j.emj.2004.12.007
- Sanda, A., Garba, T., & Mikailu, A. S. (2011). Board independence and firm financial performance: evidence from Nigeria: African Economic Research Consortium.
- Sanda, A. U., Mikailu, A. S., & Garba, T. (2005). Corporate governance mechanisms and firm financial performance in Nigeria.
- Sarens, G., & Christopher, J. (2010). The association between corporate governance guidelines and risk management and internal control practices: Evidence from a comparative study. *Managerial Auditing Journal*, 25(4), 288-308.
- Saunders, M. N. (2011). *Research methods for business students*, 5/e: Pearson Education India.
- Schad, J., Lewis, M. W., Raisch, S., & Smith, W. K. (2016). Paradox research in management science: Looking back to move forward. *The Academy of Management Annals*, 10(1), 5-64.
- Schäffer, U., Strauss, E., & Zecher, C. (2015). The role of management control systems in situations of institutional complexity. *Qualitative Research in Accounting & Management*, 12(4), 395-424.
- Schaltegger, S., & Burritt, R. L. (2010). Sustainability accounting for companies: Catchphrase or decision support for business leaders? *Journal of World Business*, 45(4), 375-384.

- Schoonhoven, C. B. (1981). Problems with contingency theory: testing assumptions hidden within the language of contingency" theory". *Administrative science quarterly*, 349-377.
- Schreck, P., & Raithel, S. (2018). Corporate social performance, firm size, and organizational visibility: distinct and joint effects on voluntary sustainability reporting. *Business & Society*, 57(4), 742-778.
- Schreyögg, G., & Steinmann, H. (1987). Strategic control: A new perspective. *Academy of Management Review*, 12(1), 91-103.
- Scott, T. W., & Tiessen, P. (1999). Performance measurement and managerial teams. *Accounting, Organizations and society*, 24(3), 263-285.
- Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program *Great minds in management: The process of theory development* (pp. 460-485). Oxford, UK: Oxford University Press.
- Seguí-Mas, E., Polo-Garrido, F., & Bolas-Araya, H. (2018). Sustainability Assurance in Socially-Sensitive Sectors: A Worldwide Analysis of the Financial Services Industry. *Sustainability*, 10(8), 2777.
- Sekaran, U. (2006). *Research methods for business: A skill building approach*: John Wiley & Sons.
- Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Mermelstein, R. J. (2012). A practical guide to calculating Cohen's f^2 , a measure of local effect size, from PROC MIXED. *Frontiers in psychology*, 3, 111.
- Sethi, S. P. (1975). Dimensions of corporate social performance: An analytical framework. *California management review*, 17(3), 58-64.
- Setó-Pamies, D. (2015). The Relationship between Women Directors and Corporate Social Responsibility. *Corporate Social Responsibility and Environmental Management*, 22(6), 334-345. doi: 10.1002/csr.1349
- Sharma, S., & Henriques, I. (2005). Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic management journal*, 26(2), 159-180.

- Shaukat, A., Qiu, Y., & Trojanowski, G. (2016). Board attributes, corporate social responsibility strategy, and corporate environmental and social performance. *Journal of Business Ethics*, 135(3), 569-585.
- Shim, J. K. (2011). *Internal control and fraud detection*: Global Professional.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, 52(2), 737-783.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological methods*, 7(4), 422.
- Siebenhüner, B., & Arnold, M. (2007). Organizational learning to manage sustainable development. *Business strategy and the environment*, 16(5), 339-353.
- Siew, R. Y. (2015). A review of corporate sustainability reporting tools (SRTs). *Journal of environmental management*, 164, 180-195.
- Sila, V., Gonzalez, A., & Hagendorff, J. (2016). Women on board: Does boardroom gender diversity affect firm risk? *Journal of Corporate Finance*, 36, 26-53. doi: 10.1016/j.jcorpfin.2015.10.003
- Simmons, M. (1995). COSO—the framework for internal audit: a strategic approach to internal audits. *Prieiga per internetą*: <http://www.mrsciace.cjb.net>.
- Simon, R. (2000). *Performance and Control System for Implementing Strategy: Text and Cases*: Upper Saddle River, NJ, Prentice Hall.
- Simons, R. (1987). Accounting control systems and business strategy: an empirical analysis. *Accounting, Organizations and society*, 12(4), 357-374.
- Simons, R. (1994). How new top managers use control systems as levers of strategic renewal. *Strategic management journal*, 15(3), 169-189.
- Simons, R. (1995a). Control in an age of empowerment. *Harvard business review*, 73(2), 80-88.
- Simons, R. (1995b). *Levers of control: How managers use innovative control systems to drive strategic renewal*: Harvard Business Press.

- Simpson, W. G., & Gleason, A. E. (1999). Board structure, ownership, and financial distress in banking firms. *International Review of Economics & Finance*, 8(3), 281-292.
- Siska, L. (2015). The concept of management control system and its relation to performance measurement. *Procedia Economics and Finance*, 25, 141-147.
- Slawinski, N., & Bansal, P. (2015). Short on time: Intertemporal tensions in business sustainability. *Organization science*, 26(2), 531-549.
- Smith, T. W. (1999). Aristotle on the Conditions for and Limits of the Common Good. *American Political Science Review*, 93(3), 625-636.
- Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review*, 36(2), 381-403.
- Sobel, P. J., & Reding, K. F. (2004). Aligning corporate governance with enterprise risk management: melding enterprise risk management with governance means directors, senior management, internal and external auditors, and risk owners must work interdependently. *Management Accounting Quarterly*, 5(2), 29.
- Soin, K., & Collier, P. (2013). Risk and risk management in management accounting and control. *Management Accounting Research*, 24(2), 82-87.
- Solomon, J. F., & Darby, L. (2005). *Is private social, ethical and environmental reporting mythicizing or demythologizing reality?* Paper presented at the Accounting Forum.
- Soltanizadeh, S., Soltanizadeh, S., Abdul Rasid, S. Z., Abdul Rasid, S. Z., Mottaghi Golshan, N., Mottaghi Golshan, N., . . . Wan Ismail, W. K. (2016). Business strategy, enterprise risk management and organizational performance. *Management Research Review*, 39(9), 1016-1033.
- Son, W.-J. (2015). The Empirical Study on Interrelationship between Strategy, MCS, Corporates Performance and Role of Controller. *Journal of the Korea Convergence Society*, 6(5), 303-314.
- Soomro, M. A., & Lai, F.-W. (2017). Examining A New Paradigm of Enterprise Sustainability Risk Management. *Global Business and Management Research*, 9(1s), 328-337.

- Spira, L. F., & Page, M. (2003). Risk management: The reinvention of internal control and the changing role of internal audit. *Accounting, Auditing & Accountability Journal*, 16(4), 640-661.
- Starik, M., & Rands, G. P. (1995). Weaving an integrated web: Multilevel and multisystem perspectives of ecologically sustainable organizations. *Academy of Management Review*, 20(4), 908-935.
- Stead, W. E., & Stead, J. G. (2011). Management for a Small Planet: Strategic decisional making and the enviroment.
- Strauß, E., & Zecher, C. (2013). Management control systems: a review. *Journal of Management Control*, 23(4), 233-268.
- Stulz, R. (1996). Rethinking risk management. *Journal of applied corporate finance*, 9(3), 8-25.
- Stulz, R. (2003). *Rethinking risk management, The Revolution in Corporate Finance*. New Jersey, USA: Blackwell Publishing, John Wiley & Sons.
- Subramaniam, N., Collier, P., Phang, M., & Burke, G. (2011). The effects of perceived business uncertainty, external consultants and risk management on organisational outcomes. *Journal of Accounting & Organizational Change*, 7(2), 132-157.
- Sullivan, G. M., & Feinn, R. (2012). Using effect size—or why the P value is not enough. *Journal of graduate medical education*, 4(3), 279-282.
- Sulmasy, D. P. (2001). Four basic notions of the common good. . *John's L. Rev.*, 75, 303.
- Sultana, S., Zulkifli, N., & Zainal, D. (2018). Environmental, Social and Governance (ESG) and Investment Decision in Bangladesh. *Sustainability*, 10(6), 1-19.
- Sutton, S. G. (2006). Extended-enterprise systems' impact on enterprise risk management. *Journal of Enterprise Information Management*, 19(1), 97-114.
- Tahir, I. M., & Razali, A. R. (2011). The Relationship between enterprise risk management (ERM) and firm value: Evidence From Malaysian public listed companies. *International journal of economics and management sciences*, 1(2), 32-41.

- Tao, N. B., & Hutchinson, M. (2013). Corporate governance and risk management: The role of risk management and compensation committees. *Journal of Contemporary Accounting & Economics*, 9(1), 83-99.
- Taticchi, P., Riccaboni, A., & Luisa Leone, E. (2010). Implementing strategies through management control systems: the case of sustainability. *International Journal of Productivity and Performance Management*, 59(2), 130-144.
- Taylor, S. E. (2007). Social support. *Foundations of health psychology*, 145171.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 509-533.
- Terjesen, S., Couto, E. B., & Francisco, P. M. (2015). Does the presence of independent and female directors impact firm performance? A multi-country study of board diversity. *Journal of Management & Governance*, 20(3), 447-483. doi: 10.1007/s10997-014-9307-8
- Tessier, S., & Otley, D. (2012). A conceptual development of Simons' Levers of Control framework. *Management Accounting Research*, 23(3), 171-185.
- Tirole, J. (2010). *The theory of corporate finance*: Princeton University Press.
- Togok, S. H., Isa, C. R., & Zainuddin, S. (2016). Enterprise Risk Management Adoption in Malaysia: A Disclosure Approach. *Asian Journal of Business and Accounting*, 9(1), 83.
- Torugsa, N. A., O'Donohue, W., & Hecker, R. (2012). Capabilities, proactive CSR and financial performance in SMEs: Empirical evidence from an Australian manufacturing industry sector. *Journal of Business Ethics*, 109(4), 483-500.
- Turner, L., & Weickgenannt, A. (2009). *Accounting Information Systems*. Hoboken: NJ: Wiley.
- Ujunwa, A. (2012). Board characteristics and the financial performance of Nigerian quoted firms. *Corporate Governance: The international journal of business in society*, 12(5), 656-674.
- Unda, L. A. (2015). Board of directors characteristics and credit union financial performance: a pitch. *Accounting & Finance*, 55(2), 353-360.

- Upadhaya, B., Munir, R., & Blount, Y. (2014). Association between performance measurement systems and organisational effectiveness. *International Journal of Operations & Production Management*, 34(7), 853-875.
- Urbach, N., & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *JITTA: Journal of Information Technology Theory and Application*, 11(2), 5.
- Van de Ven, A. H., & Drazin, R. (1984). The concept of fit in contingency theory: MINNESOTA UNIV MINNEAPOLIS STRATEGIC MANAGEMENT RESEARCH CENTER.
- Van Marrewijk, M. (2003). Concepts and definitions of CSR and corporate sustainability: Between agency and communion. *Journal of Business Ethics*, 44(2-3), 95-105.
- Van Marrewijk, M., & Werre, M. (2003). Multiple levels of corporate sustainability. *Journal of Business Ethics*, 44(2-3), 107-119.
- Velte, P., Jones, G., & Jones, G. (2016). Women on management board and ESG performance. *Journal of Global Responsibility*, 7(1), 98-109.
- Venkatraman, N. (1989). The concept of fit in strategy research: Toward verbal and statistical correspondence. *Academy of Management Review*, 14(3), 423-444.
- Venkatraman, N., & Prescott, J. E. (1990). Environment-strategy coalignment: An empirical test of its performance implications. *Strategic management journal*, 11(1), 1-23.
- Vinodh, S., Jayakrishna, K., & Joy, D. (2011). Environmental impact assessment of an automotive component using eco-indicator and CML methodologies. *Clean Technologies and Environmental Policy*, 14(2), 333-344. doi: 10.1007/s10098-011-0405-x
- Vives, X. (2006). Corporate governance: Cambridge University Press.
- Voegtlin, C., & Greenwood, M. (2016). Corporate social responsibility and human resource management: A systematic review and conceptual analysis. *Human Resource Management Review*, 26(3), 181-197.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic management journal*, 18(4), 303-319.

- Wagner, M. (2010). The role of corporate sustainability performance for economic performance: A firm-level analysis of moderation effects. *Ecological Economics*, 69(7), 1553-1560.
- Walls, J. L., Berrone, P., & Phan, P. H. (2012). Corporate governance and environmental performance: is there really a link? *Strategic management journal*, 33(8), 885-913.
- Walls, J. L., & Hoffman, A. J. (2013). Exceptional boards: Environmental experience and positive deviance from institutional norms. *Journal of Organizational Behavior*, 34(2), 253-271.
- Walsh, J. P., & Seward, J. K. (1990). On the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, 15(3), 421-458.
- Wang, J., Chen, M.-H., Fang, C.-Y., & Tian, L. (2018). Does board size matter for Taiwanese hotel performance? Agency theory or resource dependence theory. *Cornell Hospitality Quarterly*, 1938965517735906.
- Wang, T., & Hsu, C. (2013). Board composition and operational risk events of financial institutions. *Journal of Banking & Finance*, 37(6), 2042-2051.
- Webb, E. (2004). An examination of socially responsible firms' board structure. *Journal of Management and Governance*, 8(3), 255-277.
- Wellalage, N. H., & Locke, S. (2013). Women on board, firm financial performance and agency costs. *Asian Journal of Business Ethics*, 2(2), 113-127.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, 5(2), 171-180.
- Westfall, P., & Henning, K. S. (2013). *Understanding advanced statistical methods*: CRC Press.
- Westphal, J. D., & Fredrickson, J. W. (2001). Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy. *Strategic management journal*, 22(12), 1113-1137.
- White, G. B. (2005). How to report a company's sustainability activities. *Management Accounting Quarterly*, 7(1), 36.

- Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, 35(1), 91-121.
- Wijethilake, C. (2017). Proactive sustainability strategy and corporate sustainability performance: The mediating effect of sustainability control systems. *Journal of Environmental Management*, 196, 569-582. doi: <https://doi.org/10.1016/j.jenvman.2017.03.057>
- Witt, P. (2004). The competition of international corporate governance systems—a German perspective. *MIR: Management International Review*, 309-333.
- Wright, P., & Ferris, S. P. (1997). Agency conflict and corporate strategy: The effect of divestment on corporate value. *Strategic management journal*, 18(1), 77-83.
- Xiao-ying, C. Y.-h. N. (2009). *The Impact of Corporate Governance Mechanism on Risk-taking in Listed Banks (2000~ 2007)[J]*. Paper presented at the Finance Forum.
- Xiao, C., Wang, Q., van der Vaart, T., & van Donk, D. P. (2018). When does corporate sustainability performance pay off? The impact of country-level sustainability performance. *Ecological Economics*, 146, 325-333.
- Yamaji, K. (1997). A global perspective of ethics in business. *Business Ethics Quarterly*, 7(3), 55-70.
- Yasser, Q. R., Mamun, A. A., & Rodriqs, M. (2017). Impact of board structure on firm performance: evidence from an emerging economy. *Journal of Asia Business Studies*, 11(2), 210-228.
- Yatim, P. (2010). Board structures and the establishment of a risk management committee by Malaysian listed firms. *Journal of Management & Governance*, 14(1), 17-36.
- Yazid, A. S., Hussin, M. R., & Daud, W. N. W. A. N. (2011). An Examination of Enterprise Risk Management (ERM) Practices among the Government-Linked Companies (GLCs) in Malaysia. *International Business Research*, 4(4). doi: 10.5539/ibr.v4n4p94
- Yilmaz, A. K., & Flouris, T. (2010). Managing corporate sustainability: Risk management process based perspective. *African journal of business management*, 4(2), 162-171.
- Zabri, S. M., Ahmad, K., & Wah, K. K. (2016). Corporate governance practices and firm performance: Evidence from top 100 public listed companies in Malaysia. *Procedia Economics and Finance*, 35, 287-296.

- Zahra, S. A., & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of management*, 15(2), 291-334.
- Zajac, E. J., & Westphal, J. D. (1994). The costs and benefits of managerial incentives and monitoring in large US corporations: When is more not better? *Strategic management journal*, 15(S1), 121-142.
- Zhang, F., Rio, M., Allais, R., Zwolinski, P., Carrillo, T. R., Roucoules, L., . . . Buclet, N. (2013). Toward an systemic navigation framework to integrate sustainable development into the company. *Journal of cleaner production*, 54, 199-214.
- Zhang, J. Q., Zhu, H., & Ding, H.-b. (2013). Board composition and corporate social responsibility: An empirical investigation in the post Sarbanes-Oxley era. *Journal of Business Ethics*, 114(3), 381-392.
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research*, 37(2), 197-206. doi: 10.1086/651257
- Zhuang, J., Edwards, D., & Capulong, M. V. A. (2001). *Corporate Governance & Finance in East Asia: A Study of Indonesia, Republic of Korea, Malaysia, Philippines and Thailand*: Asian Development Bank.
- Ziegler, A., & Schröder, M. (2010). What determines the inclusion in a sustainability stock index?: A panel data analysis for european firms. *Ecological Economics*, 69(4), 848-856.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*: Cengage Learning.
- Zona, F., Gomez-Mejia, L. R., & Withers, M. C. (2018). Board interlocks and firm performance: Toward a combined agency–resource dependence perspective. *Journal of management*, 44(2), 589-618.