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University of the Witwatersrand

School of Economic and Business Sciences

Marketing Department

Doctoral Research Report

GREEN MARKETING, GREEN CORPORATE GOVERNANCE COMMITMENT, AND ITS IMPACT ON FIRM PERFORMANCE: THE CASE OF ELECTRONIC MANUFACTURERS IN SOUTH AFRICA.

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DECLARATION

I, Vivian Abit Atud declare that this project is my work. This thesis reportis submitted in fulfilment of the requirements for the Ph.D degree in the field of Marketing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at the University of Witswaterand or any other University.

I further declare that:

- I know that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.

- I have followed the required conventions in referencing the thoughts and ideas of others.

- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief or proof that this thesis is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

I recognise that it was my responsibility to conduct this research in an ethical manner and according to guidelines of the University of the Witwatersrand, and according to any laws or legal frameworks that may apply, as well as according to the norms and expectations of the Marketing discipline.

.

Signature

Date ____2017-11-06_____

ACKNOWLEDGEMENT

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I am deeply grateful to the management of various electronics manufacturing companies in South Africa for responding to my questionnaire.

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I would also like to thank Rev. DR BK Chehip for the prayers and support. To my siblings Samuel, Pius, Felix, Aboh, Nek and Aneng, i thank you all for inspiring me throughour growing up and through this project.

Finally, I will like to thank my husband (Kenneth Ayong) and our children Blessing Tewan, Muya Atud and Joyce Elizabeth for all the inspiration and moral support. I am also grateful to all who supported me in one way or the other whose names have not been mentioned here.

DEDICATION

I dedicate this great piece of work to first to the Lord Almighty- my pillar of support all through my life – To my beloved parents of blessed memories (Elizabeth Atud and Muya Atud)- your legacy lives on and your motivation for me to always do my best remains with me forever. Finally, this work is also dedicated to you my little princess Joyce Elizabeth, being pregnant with you was an inspiration for me start this work, I worked with you in my arms and your priceless smiles kept me going.

This thesis was inspired by the following verse:

Philippians 3: 12 – "Not that I have already perfected, but I press on to the mark of my higher calling….."

ABSTRACT

The purpose of this research was to study the relationship between firm's commitment to green, green marketing capability, green relationship learning, green human resource investments and firm performance for electronics manufacturers in South Africa. Despite the increased focus on on green marketing, there has been little focus on research relating corporate commitment to green and how it relates to green marketing capabilities and firm performance. This study fills this research gap by proposing and testing hypotheses relating firm commitment to green, green marketing capability, green relationship learning, green human capital investment and a firm's performance.

To answer the research questions, primary data for n=212 respondents covering a range in firm size, gender, race, and age for electronics manufacturers in South Africa was used to test the hypothesis relating corporate commitment to green, green marketing capability, and a firm'sperformance. The structural equation modeling approach was used to test the model fit and hypothesis testing. The software SPSS 24 was used to analyse the descriptive statistics and AMOS 24 was used to test the research model. The results showed that firm commitment to green was a predictor of firm performance and green marketing capability, green relationship learning, and green human capital investments was found to be mediators in the relationship between firm commitment to green and firm performance. Indeed, the hypotheses stated in this study were found to be true. The main contribution of this study is showing how corporate governance commitment to green can enable firm performance (both marketing and financial) through mediating variables of green marketing capability, green relationship learning and green human capital investment. The study further shows that corporate commitment to green influences green corporate social investment positively.

Key words: corporate commitment to green, green marketing capability, green relationship learning, green Human Capital Investment, Green CSI, firm performance.

TABLE OF CONTENTS

ITEM	DETAILS	PAGE
	Declaration……..	ii
	Acknowledgements ……...	iii
	Dedication……..	iv
	Abstract…….....	vi
	CHAPTER I: INTRODUCTION OF THE STUDY	
➢	1.0. Introduction……	2
	1.1. Background and developments in corporate commitment to green……	5
	1.2. Problem Statement……....	7
	1.2.1. Determining of Whether the Problem Should Be Investigated……	8
	1.2.2. Validation for the Identified Problem……	9
	1.3. Research Gap / Lacuna……	9
	1.4. Purpose of the Study……	9
	1.5. Research Objectives……	10
	(a) Theoretical Objectives……	10
	(b) Empirical Objectives……..	10
	1.6. Research Questions……...	11
	(a) Primary Research Question……	11
	(b) Secondary Research Questions……..	11
	1.7. The Manufacturin Sector in South Africa- Legislative Imeritives……	11
	1,7.1 Legislation Promoting Green Manufacturing In South Africa……..	11
	1.8 The South African Manufacturing Sector……	14
	1.9 The Electronics Manufacturing Sector in South Africa……	14 19

1.1. Definition of Terms…….. 23
1.9. Chapter Summary…… 26

CHAPTER II: THEORITICAL LITERATURE REVIEW

➢ 2.0. Introduction……..... 28
2.1 Stakeholder Theory…… 29
2.3 Resource Dependent Theory…… 37
2.4. Resource Based Theory of the Firm..... 37
2.5 Agency Theory…….. 40
2.6 Stewardship Theory…….. 42
2.3. PIM Theory…….. 43
2.9. Chapter Summary…… 44

CHAPTER III: EMPERICAL LITERATURE REVIEW

3.0. Introduction……..... 47
3.1.1 Firm commitment to green..... 48
3.1.2. Corporate Governance…… 52
3.2 Green Corporate Social Investment…….. 68
3.3. Green Marketing Capability…… 82
3.4. Green Human Capital Investment 84
3.5. Green Relationship learning……..... 87
3.6. Green Human Capital Investment……

3.7. Firm Performance……90
3.8. Chapter Summary……99

CHAPTER IV: HYPOTHESIS STATEMENT & DEVELOPMENT

➢ 4.0. Introduction…… 101
4.1. Conceptual Model……..…….. 101
4.2. Hypothesis Development……..... 102
4.2.1. Firm Commitment to Green and Green Marketing Capability……. 102
4.2.2. Firm Commitment to Green and Green Human Capital Investment……. 103
4.2.3. Firm Commitment to Green and Green Relationship Learning…… 103
4.2.4. Firm Commitment to Green and Green Corporate Social Responsibility……. 103
4.2.5. Green and Green Marketing Capabilityand Firm performance……..…….. 104
4.2.6. Green and Green Marketing Capabilityand Green CSI……..…….. 104
4.2.7. Human capital Investmentand Green CSI……..…….. 105
4.2.8. Human capital Investmentand Firm Performance……..…….. 105
4.2.9. Green Relationship Learningand Green CSI……..……..... 106
4.2.10. Green Relationship Learningand Firm Performance……..…… 107
4.2.11. Green Relationship Learningand Green Marketing capability…… 107
4.2.11. Green Human capital Investmentand Green Marketing capability…… 107

CHAPTER V: RESEARCH DESIGN & METHODOLOGY

- 110

5.0. Introduction…… 112

5.1..2 Research Philosophy……..... 113

5.1.3. Ontology…… 114

5.1.4. Epistemology……1118

5.1.5. Positivist Paradigm…… 119

5.1.6. A Presentation of the Other Paradigms……..... 121

5.1.7. Justification for the Philosophical Underpinning……..... 122

5.2.1 Research Design……..... 123

5.2.2. Research Methods or Techniques……..... 123

5.2.3. Quantitative Methodology…… 126

5.2.4. Justification / Defense for the Chosen Method……..... 128

5.3. Sampling Design…….. 128

5.3.1. Sampling Design Process…….. 130

5.3.2. Population……..... 131

5.3.3. Sampling Frame……. 131

5.3.4. Sampling Method…….. 132

5.3.5. Justification for the Use of Sampling…… 132

5.3.6. Probability Sampling……. 133

5.3.7. Sample Description……..... 134

5.3.8. Determination of the Right Sample Size……. 134

5.3.9. Errors in Sampling…….. 135

5.4. Variables and their Equivalent Instruments……. 135

5.4.1. Exogenous (Independent or Predictor) Variables……..... 136

5.4.2. Endogenous (Dependent or Outcome) Variable…… 137

5.5. Questionnaire Design……..... 138

5.5.1. Why Close-Ended Questions were Used?..... 138

5.5.2. The Choice of Response Options…….. 139
5.5.3. The Format of the Questionnaire……... 140
5.6. Data Selection and Collection Process……..... 141
5.6.1. Guaranteeing Proper and Accurate Data Collection Process……..... 141
5.7. Participation of Respondents in this Study…….. 142
5.8. Ethical Considerations and Ramifications……..... 143
5.8.1. Research Ethics Review at Wits University…….. 143
5.9. Reliability and Validity…….. 143
5.9.1. Reliability: Cronbach's Alpha Analysis……..... 144
5.9.2. Effective Use of Cronbach's α……..... 145
5.9.3. Composite Reliability……..... 145
5.9.4. Composite Reliability: An Alternative to Cronbach's α..... 146
5.9.5. Checking Validity……..... 146
5.9.6. Convergent Validity……. 147
5.9.7. Discriminant Validity……..... 148
5.10. Analysis of Demographic and General Information…….. 148
5.11. Structural Equation Modeling: Definition of SEM…..... 152
5.11.1. The Important Issues on SEM Analysis…… 153
5.11.2. Why SEM? – A Justification……... 154
5.11.3. Assumptions of SEM…….. 155
5.11.4. Model Estimation……. 157
5.11.5. Parameter Estimation……... 158
5.11.6. CFA: Inferential Tests through MLE…….. 158
5.11.7. Types of Models in SEM……. 159
5.11.7.1. CFA Models……. 159
5.11.7.1.1. Assumptions of CFA Models……. 159
5.11.7.2. SR Models……. 160
5.11.7.3. LC Models……..... 161

5.11.7.4. PA Models…….....162
5.11.8. CFA: Checking Reliability, Validity and Model Fit……... 165
5.11.9. Shortcomings of the CFA Model and GOF Indices…… 166
5.11.10. Model Modification…….. 166
5.11.11. Path Modeling……168
5.11.12. SEM-Multiple Regression Link…… 168
5.11.13. The Role of SEM in my Thesis……. 169
5.11.14. The Advantages of Using SEM for my Data Analysis……... 172
5.11.15. Limitations of SEM……..…..... 174
5.12.A Definition and Use of AMOS in this Thesis.....

CHAPTER VI: DATA ANALYSIS APPROACH

➢
6.0. Introduction……...178
6.1. Data Processing…… 179
6.2. Evaluation of Mean Values…….. 182

6.2.1. Respondent Profile……..……
6.2.2 General Descriptive Analysis……. 183
6.2.3. Descriptive Analysis for Likert Scale Response Items……..... 188
6.2.4. Likert Scale Response Items……..... 189
(a) Analysis of the Mean [As a Measure of Central Tendency]…….. 191

(b) Analysis of Frequencies [As a Measure of Variability]……..191
6.2 .5 Demographic Differences in Firm Commitment to Green and FP…… 192
6.2.5.2 One- Way ANOVA test……. 195
6.3 Testing For Mediation…….. 196
6.3.1 The Effect 0f Mediator Variavles on the Relationship Between FCG, GCSI and FP…… 199
199
6.3.2 The Effect of GRL on the Relationship between FCG, GCSI…… 200
6.3.3 The Effect of GHCI on the Relationship Between FCG and GCSI……. 201
6.3.4 The Effect of GMC on the Relationship Between FCG and GCSI…… 202
6.3.5 The Effect of GRL on the Relationship Between FCG and FPM…… 203
6.3.6 The Effect of GMC on the Relationship Between FCG and FPF……. 204
6.3.7 The Effect of GHCI on the Relationship Between FCG and FPF…… 206
6.3.8 The Effect of GRL on the Relationship Between FCG and FPF…… 206
6.3.9 The Effect of GMC on the Relationship Between FCG and FPF…….. 206
6.3.10 The Effect of GHCI on the Relationship Between FCG and FPF…… 207
6.4. Testing the Measurement Model…….. 208
6.4.1. Reliability: Analysis of the CR Values……..... 208
6.4.2. Validity: Discriminant and Convergent Validity…….. 208
6.4.2.1. Discriminant Validity……..... 210
6.4, 3. Shared Variance (Squared Correlation)…….. 211
6.4.4. Convergent Validity……..……..…….. 211
6.4.5. Resemblances between Shared Variance and AVE……..... 213
6.5. Inferential Statistics……. 214
6.5.1. CFA Model Analysis- Composit Reliability…… 215
6.5.2 Discriminant Validity……. 219
6.5.3. Model Fit (CFA Analysis)…….. 221
6. Path Modeling Analysis-……. 222
6.6.1. Model Fit (Path Modeling)……

6.6.2. Hypothesis Testing / Significance Testing…… 223
6.6.3. Hypotheses Verification…… 224
(a) Firm Commitment to Green(X_1) – Green Marketing Capability(Y)……227
(b) Firm Commitment to Green(X_2) – Green HCI(Y)……278
(c) Firm Commitment to Green(X_3) – Green RL(Y)…….. 278
(d) Green Marketing Capability(X_4) – Firm performance (Y)…….....
(e) Green HCI (X_5) – Green Marketing Capability(Y)…….....
(f) Green RL (X_6) – Green Marketing Capability(Y)…….....
(g) Green Marketing Capability(X_7) – Green CSI (Y)…….....
(h) Green HCI (X_8) – Firm performance (Y)…….....
(i) Green RL(X_9) – Firm performance (Y)…….....
(j) Green HCI(X_{10}) – Green CSI (Y)…….....
(k) Green RL(X_{11}) – Green CSI (Y)……...
6.7. Chapter Summary…… 231

CHAPTER VII: DISCUSSION OF RESULTS & LIMITATIONS

7.0. Introduction…….. 232
➢ 7.1. Discussion of the Findings……..... 233
7.2. A Critical Discussion of the Findings from Hypothesis Testing…….. 237
7.2.1. Firm Commitment to green-Green Marketing Capability…… 237
7.2.2. Firm Commitment to green-Green Human Capital Investment ……... 239
7.2.3. Firm Commitment to green-Green Green Relationship learning …… 239
7.2.4. Firm Commitment to green-Green CSI ……..... 240
7.2.5. Green Marketing Capability – Firm performance…… 241
7.2.6. Green Marketing Capability – Green CSI…… 242
7.2.7. Green Human Capital Investment – Green CSI……..... 243

7.2.8. Green Human Capital Investment – Firm performance 243
7.2.9. Green Relationship learning – Green CSI 244
7.2.10. Green Relationship learning – Firm Performance..... 246
7.2.11. Green Human Capital Investment – Green Marketing Capability..... 247
7.2.12. Firm Commitment to Green- Firm performance..... 248
7.3. Best-Fit Model for Firm Commitment to Green, Green Marketing Capability and Firm performance..... 249
7.4. Chapter Summary..... 251

CHAPTER VIII: RECOMMENDATIONS, IMPLICATIONS CONCLUSION & FUTURE DIRECTIONS

8.0. Introduction..... 252
8.1 Recommendations..... 252
8.1.1. Altering Negative and Fostering Positive Buying Intentions..... 254
8.2. Contributions and/or Ramifications of this Study..... 255
8.2.1. Contributions of this Study..... 255
8.2.1.1. Contribution to Knowledge..... 256
8.2.1.2. Contribution to Practice..... 257
8.2.2. Managerial or Practical Ramifications..... 258
8.2.2.1. Marketing-Related Ramifications Implications..... 259
8.2.2.2. Policy Implications..... 262
8.3. Limitations of this Study..... 264
8.3.1. Scope of the Study..... 266
8.3.2. Generalisability..... 265
8.4. Conclusion..... 267
8.5. Future Directions..... 269

9. References……..…..272

FIGURES, TABLES, APPENDICES & ABRREVIATIONS

Figures

Figure 1.1: Share of World's Manufacturing of the Top Ten Manufacturing Economies in 2010……..

Figure 1.2: Trends in Manufacturing Output in the Top Ten manufacturing Countries (Constant 2005 Prices)……

Figure 1.3: SA GDP Growth Rate 1993-2015…….

Figure 1.4: Gross Value Added by Different Sectors to SA Economy……...

Figure 1.5: Volume of production- Manufacturing Production 1994-2015……

Figure 1.6: Structure of the Study……..

Figure 3.1: Corporate Governance Framework Adopted from King Reports (2006)

Figure 3.2 Relationship Between Corporate Governance and Firm Commitment to green……

Figure 4.1 Conceptual Model……..

Figure 5.1: A Graphical Representation of the Methodology of the Study……

Figure 5.2: Graphical Demonstration of the Research Philosophy…….

Figure 5.3: The Selection of Research Methods Linked to Ontology…….

Figure 5.4: A Depiction of the Research Paradigms……...

Figure 5.5: Research Design and Methods……..

Figure 5.6: Research Design Map……...

Figure 5.7: The Effect of Sampling…….
Figure 5.8: Steps in the Research Design Process……...
Figure 5.9: Sampling Error Illustration……...
Figure 5.10: A Basic Approach to Applying a SEM Analysis……
Figure 5.11: Steps in the Execution of SEM……...
Figure 5.12: The Family Tree of SEM……
Figure 5.13: An Illustration of the CFA Model……..
Figure 5.14: An Illustration of the SR Model…….
Figure 5.15: An Illustration of an LC Model……..
Figure 5.16: An Illustration of A PA Model……
Figure 5.17: A Depiction of Path Diagrams……

Figure 6.1: Data Analysis Procedure……...
Figure 6.2: Gender and Race of the Respondents……
Figure 6.3: Age and Position of the Respondent…….

Figure 6.4: Education Level of the Respondent……..
Figure 6.5: Industry Sector and Number of Years Firm Has Been in Business……...
Figure 6.6: Ownership of Company and Listing of Firm on Stock Exchange……
Figure 6.7: Expected Outcome from Reliability and Validity Computation……..
Figure 6.8: CFA Model Analysis: Measurement of Reliability, Validity and Model Fit……
Figure 6.9: Output Path Model……
Figure 7.1: The Final Best Fit Model……..
Figure 8.1: Structure of the Report……..

Tables

Table 1.1: Manufacturing share of Gross Value Added in the Top Ten

Manufacturing Countries and South Africa from 2004 to 2010…….
Table 3.1: Summary of Main Empirical Studies on Corporate Governance Commitment to Green…….
Table 3.2: Summary of Main Empirical Studies on Corporate Governance in South Africa……...
Table 3.3: Summary of Main Empirical Studies on Green CSI……..
Table 3.4: Summary of Main Empirical Studies on Green Marketing Capability…..
Table 3.5: Summary of Main Empirical Studies on Green Human Resource Investment and Firm Performance……..
Table 3.6: Summary of Main Empirical Studies on Green Relationship Learning….
Table 5.1: Differences between the Research Paradigms……
Table 5.2: Features of Qualitative & Quantitative Research Methods……
Table 5.3: Advantages and Disadvantages of Quantitative Research Method……
Table 5.4: A Justification of Why SEM Was Selected for this Study……
Table 5.5: The Benefits of AMOS – Justification of the Choice of AMOS……
Table 6.1: How Raw Data Was Coded Prior To Analysis……..
Table 6.2: Coding for the Research Variables…….
Table 6.3: Mean and Standard Deviation Values of the Study Variables……...
Table 6.4: Sample Profile Characteristics……...
Table 6.5: General Descriptive Analysis…….
Table 6.6: Testing the Reliability of Constructs – Cronbach's Alpha…….
Table 6.7: Regression Output……
Table 6.8: Inter-Construct Correlation Matrix……
Table 6.9: Squared Multiple Correlations……...
Table 6.10: Accuracy Analysis Statistics……
Table 6.11: Factor Matrix Showing Discriminant Validity…….
Table 6.12: Model Fit Summary (CFA)……..
Table 6.13: Model Fit Summary (Path Modeling)……..

Table 6.14: Hypothesis Testing……...

Table 6.15: Standardized Regression Weights……

Table 6.16: Test for Homogeneity of Variances…….

Table 6.17: ANOVA for Descriptive Variables……..

Appendices

Appendix I: Survey Questionnaire…….

Appendix II: Ethics Clearance Certificate…….

Key Abbreviations/Acronyms

AMOS – Analysis of Moment Structures
AV – Availability
AVE – Average Variance Extracted
BRICS – Brazil, Russia, India, China, South Africa
CFA – Confirmatory Factor Analysis
CR – Composite Reliability
EC – Environmental Concern
EPSM – Equal Probability Selection Method
FIML – Full Information Maximum Likelihood
FCG – Firm Commitment to Green
FP – Firm Performance
FFP – Firm Financial performance
FMP – Firm Marketing Performance
GLS – Generalised Least Squares
GOF – Goodness of Fit
GUI – Graphical User Interface
GMC – Green Marketing Capability
GMCP – Green Marketing Capability Product
GMCS – Green Marketing Capability Sales
GHCI – Green Human Capital Investment
GCSI – Green Corporate Social Investments
GCSIS – Green Corporate Social Investments- Social Dimension
GCSIE – Green Corporate Social Investments- Economic Dimension
GCSIENV – Green Corporate Social Investments- Environmental
LGM – Latent Growth Modeling

MLE – Maximum Likelihood Estimation
PM – Path Modeling
SEM – Structural Equation Modeling

ASSUMPTIONS AND EQUATIONS

Assumptions of this Study

- The respondents of the chosen sample willingly shared their views on their firm's commitment to green, green marketing and firm performance
- The respondents provided **honest** and/or truthful responses
- The chosen sample size was large enough to produce meaningful and accurate results
- The sample will reflect the South African electronic sector'slevel of commitment to green, green marketing and firm performance (i.e. the entire population) and results will be generalised across electronic sector across the country

Equations

Equation 1: Data = Model + Error – The basic model in statistical modeling

Equation 2: Firm Financial performance = a *Firm Commitment to green + b *Green marketing capability+ c*Green Human Capital Investment + errori – Simple linear equation

Equation 3: Firm Marketing performance = a *Firm Commitment to green + b *Green marketing capability+ c*Green Human Capital Investment + errori – Simple linear equation

Equation 4: Green Corporate CSI = a *Firm Commitment to green + b *Green marketing capability+ c*Green Human Capital Investment + errori – Simple linear equation

Equation 5: y = i + Xb + e – Multiple regression equations

CHAPTER I

INTRODUCTION OF THE STUDY

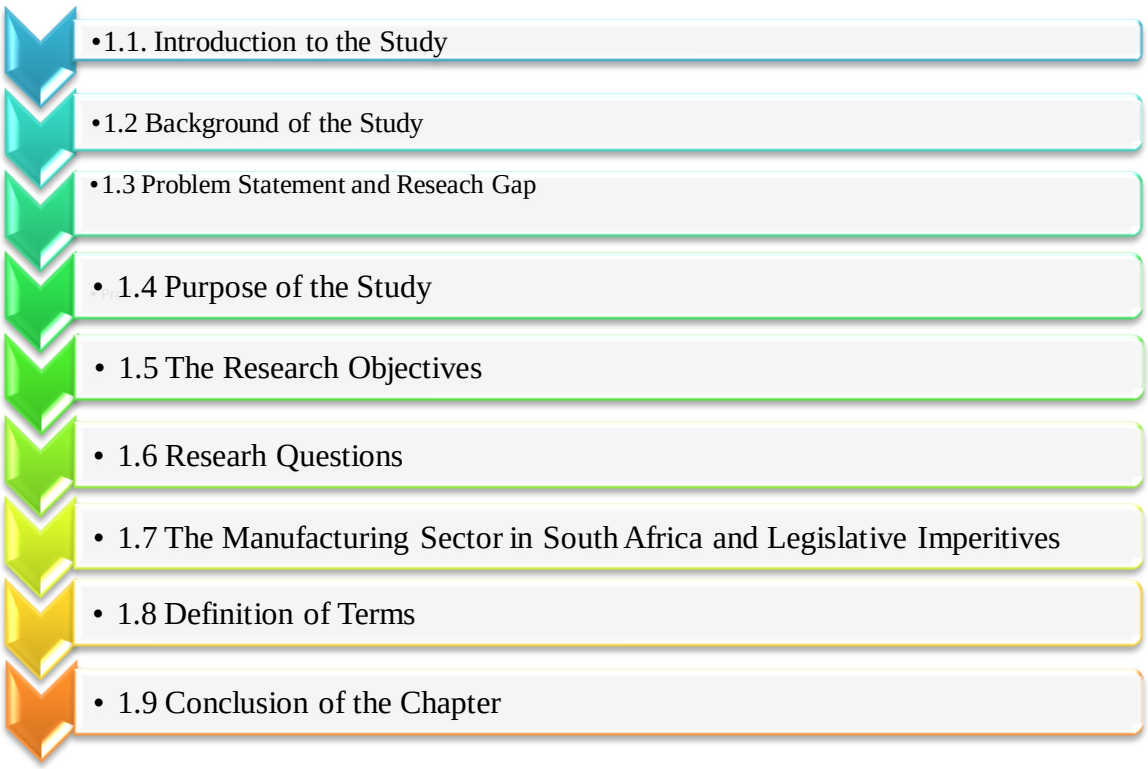
"There is only one valid definition of business purpose: to create a customer.... It is the customer who determines what the business is.... Because its purpose is to create a customer, any business enterprise has two -- and only these two -- basic functions: marketing and innovation".

-Peter F. Drucker

1.1 Introduction of the Study

The purpose of this research was to study the relationship between a firm's commitment to green, green marketing capability, green relationship learning, green human resource investments and firm performance for electronics manufacturers in South Africa. Despite the increased focus on on green marketing, there has been little focus on research relating corporate commitment to green and how it relates to green marketing capabilities and firm performance. This study fills this research gap by proposing and testing hypotheses relating firm commitment to green, green marketing capability, green relationship learning, green human capital investment and a firm's performance. This chapter presents the introduction to the study. It includes the background to the study, the problem statement, the research purpose and objectives, definition of concepts and, an introduction to legislations governing the electronics manufacturing sector in South Africa.

Figure 1.0 Structure of the Chapter



Source: this study (2017)

Following the postulation of the concept of sustainable development in the 1980s after the publication of the Brutland Report, titled "Our Common Future" by the World Commission on

Environment and Development (1987), researchers in various fields have been involved in research on how issues of sustainability relates to their areas of research. Marketing academics and practitioners are among researchers examining how the field of marketing relates to the natural environment. Issues studied in the field of green marketing include: green marketing and financial and environmental performance (Narayan, 2013); firm performance and green marketing (Matute, 2013); green innovation and firm image and firm performance, (Chen, 2008); environmental product innovation and performance (Amores-Salvad et al., 2014); the relationship between green pressure and green initiatives (Kushwaha and Sharma, 2016); how innovation theory applies to marketing (Vaccaro, 2009); how green manufacturing practices relates to performance (Digalwar et al., 2013); how stakeholders influence green marketing practices (Rivera-Camino, 2007); green marketing and performance through a grey marketing criteria (Zhi Jun Xu et al., 2015); the domains of green marketing construct in SMMEs (Hardeep Chahal et al., 2014); green packaging (Kassaye , 2001); human and organisational aspects of green adoption and how it relates to performance (Jabbour et al., 2015); factors influencing purchase intension (D'Souza et al., 2008); how green marketing innovations results in the development of green identity (Kumar, 2015); the state of green marketing research over a 25 year period (Kumar , 2016); the relationship between consumer demand and green innovation and firm performance (Lin et al., 2013); proactive and reactive sources of green innovation (Chen et al., 2012); the relationship between consumer and regulator pressure on green innovation (Huang et al., 2016). Despite the broad focus of existing research on various variables relation green marketing to performance, little research has been done relating corporate commitment to green, green marketing, and firm performance. However, issues of corporate governance have been topical in the South African economy since the transition to democracy in 1994. There is increasing research showing the importance of corporations to adhere to good corporate governance practices and the country's green laws. Researchers have studied various issues relating to corporate governance commitment to sustainability in South Africa. Issues studied on corporate governance and sustainability includes: the relationship between corporate governance commitment, corporate responsibility and corporate failure (Awad and Hegazy, 2016); how corporate governance practices in South Africa relates to indicators of corporate governance (Scholtz, 2014); corporate governance practices of the top 40 JSE listed companies (Barac and Molio, 2010); board composition and firm performance and sustainability

(Oosthuizen & Lahner, 2016); time series analysis of corporate governance practices of 230 companies listed on the JSE over an ten year period (Mans-Kemp, Erasmus & Viviers, 2016); sustainable business goals relationship to conscious leadership (Sukhdeo and Arnolds, 2016); how the second king report's recommendations live up to their expectation (Rossouw, 2005); how green suppliers and innovation relates to competitive advantage (Van den Berg, Labuschagne, & Van den Berg, 2013); how green initiatives have been implemented in the city of Tshwane Municipality (Mukonza and Mukonza, 2015); corporate citizenship, sustainability and sustainable reporting and the role of the board (Marx and van Dyk, 2011); frameworks for corporate governance and how they relate to HR governance, (Grobler, Bezuidenhout and Hyra, 2014). Despite the broad range of issues examined under corporate governance commitment to sustainability in South Africa, there is little focus on relating this to marketing despite the fact that marketing plays a key role in the implementation of green corporate commitment. This study fills this gap in existing research by relating corporate commitment to green, green marketing and firm performance in the electronic manufacturing sector in South Africa.

This study intends to determine whether there is any impact on firm performance as a result of companies incorporating green marketing and Green Corporate Social Investment (GCSI) in the corporate governance strategy of the firm. Determining the impact on firm performance as a result of green marketing and green corporate social investments will give manufacturers a better understanding on how to better channel their green marketing and green CSI efforts and to improve the returns on green marketing spend. The importance of such analysis in South Africa cannot be overemphasised. On the one hand, South African consumers are increasing demanding green products, and on the other hand, there is increasing pressure from government policies, corporate governance regulations, international regulations and internal pressure for firms to go green and be a good corporate citizen. To answer the research questions posed this study, the researcher started by examining the background to the study, together with important concepts related to the research study. These included: marketing, green marketing, corporate social investment, green corporate social investments, corporate governance commitment, marketing performance, firm performance. Secondly, the reason for the research and the research problem was stated. The research problem was then defined and clarified. That was followed by an explanation of the research methodology used to reach the anticipated objectives of the study.

This chapter ended with an outline of all the main components of the study and a research plan was outlined.

1.2 Background of the Study

The electronics manufacturing sector in South Africa is rapidly growing and expanding its footprints beyond South Africa. The growth in the sector could be attributed to various business strategies adopted by the sector and an increased demand for both industrial and household electronics products on the continent. While electronic manufacturers have over the years been committed to the production process of improving products and sales, these firms are now increasingly faced with a dual pressure. On the one hand, these manufacturers have to continue to improve firm performance in the long run. On the other hand, various stakeholders are pushing for electronics manufacturing firms to not only comply with environmental and sustainability norms of the country but to produce green products. Producing green products despite its attractiveness is complex, and it requires firms to invest in research and development, increase costs, change in organisational cultures among other factors (Kushwaha, Kesavan, & Gaur; 2016). Current research (Ar Ilker, 2012; Kushwaha, et al; 2016), shows that firms are moving on to adopting both green product initiatives and performance goals. Findings from Kushwaha, et al (2016) show that over and above traditional product attributes of functionality, durability, and price, many consumers, especially in developing countries are increasing concerned with energy consumption of electronic products, and environmental issues among others. Given these concerns, understanding the performance impact of green marketing is becoming of paramount importance to the management of electronic firms in South Africa. Commitment to green is also reinforced by legal requirements within the South African corporate governance framework (King Code of Governance for South Africa, 2009). South African companies are called upon to adopt ethical leadership in business and adopt a sustainability integrated reporting framework. In this light, many South African companies are now adopting and implementing green marketing not just as a regulatory requirement but also as a marketing strategy with a view to creating a positive impact on firm performance. There have been extant studies (Kushwaha, et al; 2016; Paswan, Guzmán, & Blankson, 2012; Chang, 2012) on a firm's commitment to green globally. However, most of the studies have looked at issues such as corporate governance commitment to green and firm performance (Munisi and Randøy, 2013); governance and marketing strategy (Paswan. et al, 2012), marketing strategy and marketing performance (Lamberti and Noci, 2013); governance and performance of listed companies (Zabri, Ahmad and Wah, 2016) among others. There has been little focus on integrating studies on corporate commitment to green, green marketing and how that relates to performance. It will be important for firms to understand how their commitment to green and green

marketing strategies/products impact on firm performance. Such understanding will help a firm to better allocate their resources better and better commit to green marketing in a sustainable and profitable way. This study, therefore, fills this research gap by examining how green corporate governance commitment, green corporate social investments, and green marketing relate to firm performance.

1.3. Problem Statement and Research gap

A firm's success largely depends on the strategic decisions of such a firm. Strategic decisions of firms are guided by firm's commitments from the board of directors. Therefore, firms that are committed to green on a board level can enable green marketing initiatives within the firm. Market environment has been identified as an important factor that influences strategic initiatives (Shaw, 2012). However, there seems to be scant research studies conducted to relate green marketing to firm's performance. There are also limited studies relating corporate commitment to green, green CSI, green marketing and firm performance. While some authors agree that the use of green capabilities by firms can result in competitive advantage (Ambec and Lanoie, 2008; Berchicchi et al., 2012, Clarkson et al., 2011; Molina-Azorin et al., 2009), these studies do not show how the use of green capabilities relates to other functional areas of the firm such asgreen human resources GHR investment and green relationship learning. Studies have further been silent on how enabling green capabilities in a firm can result in firm performance and green CSI. This study fills this gap in literature by examining how a firm's commitment to green relates green marketing capability, green relationship learning, and green HR and firm performance.

Most of the studies on green marketing and firm performance have been carried out in Western nations; therefore there is need for such studies in developing nations such as South Africa. The market environment has been identified as an important factor that influences strategic initiatives. However, (Delmas et al., 2011) postulated that given the divergent views of existing studies on corporate commitment to green, green marketing, and firm performance, academics are still interested in various unanswered questions on the subject. This is exercibated by the fact that apart from there being unanaserd questions, some of the answered questions have had divergent answers such as: does it really pay to be green? What organisational resources favour the implementation of proactive environmental strategies? Findings in China showed that there were differences in adoption of green in different manufacturing firms (Zhu, Sarkis & Lai, 2008b). Therefore, this study was focused on the electronics manufacturing sector in South Africa. Where studies on green and sustainability have been conducted in the electronics manufacturing sector, the focus has been on supply chain and not marketing and how it relates to performance (Hu and Hsu, 2010). Studies that have been focused on examining electronics firm's capabilities and performance have also been focused on understanding the green supply chain

management and on relating green commitment, green marketing and firm's performance (Shang. Lu and Li, 2010). However, green marketing came out as an important factor in the studies on firm's capability and firm performance among other factors such as green manufacturing and packaging, environmental participation, green supplier, green stock, and green eco-design. There is therefore need for focused research on green marketing, other business areas and firm performance.

In addressing the void towards studies on green corporate commitment, green CSI, green marketing, and performance, this study had nine theoretical and empirical objectives which were aimed at: First, investigating the underlying influence of corporate commitment to green, green CSI, green marketing and it's impact on firm performance for electronic manufacturing companies in South Africa. Second, the study sort to present an empirical investigation of the mediating role of green human investment and green relationship learning on performance. Finally, the study applied theories such as: The Resource theory of the firm; corporate governance theories like agency theory, stewardship theory and resource dependence theory; stakeholder theory, the Profit Impact of Marketing Strategy (PIMS) paradigm as well as the Market orientation model to provide strong theoritical grounding to the literature of this study. A review of the existing literature identified the following notable limitations and gaps:

First, a greater majority of the studies were focused on green marketing and firm performance and also a corporate commitment to green and firm's performance independently. Secondly, most of the studies carried out on the subject were mostly conducted in the Western countries. Therefore, this study investigated the impact of corporate commitment to green, green marketing and green CSI and its influence on business performance which is lacking in the entire literature. There was scant evidence of previous research related to the subject matter on electronic manufacturers in developing countries such as South Africa. The study filled this gap in literature on the relationship between the constructs developed in this study. Also, the findings of this study added new knowledge to the existing knowledge on corporate governance- Green Corporate Social Investment- Green marketing- performance management literature, particularly on electronic manufacturing and green marketing capability's effects on business performance in developing African countries. Finally, the study demonstrated how marketing practices are the pivots around which firm's performance revolve.The study of green marketing practices incorporated a combination of marketing capabilities, green product development, and innovation, for business performance (Shang, Lu, and Li, 2010).In considering the above aspects, this study aimed to investigate the influence of corporate commitment to green, green marketing and green CSI on firm's performance of electronic manufacturing companies in South Africa.

1.4. Purpose of the Study

This study had two main purposes: the study first analysed and explained the impact of corporate commitment to sustainability, green marketing and green CSI on a firm's performance of electronics manufacturing companies in South Africa. Secondly, the study tested for mediating factors impacting on the relationship between firm commitment to green and firm performance.

1.5. Research Objectives

The aim of the study is to investigate the influence of corporate commitment to sustainability, green marketing, and green CSI and its impact on firm performance.

1.5.1. Theoretical objectives:

The following theoretical/empirical objectives were set for this study:

- To review the literature on the impact of a firm's commitment to green.
- Review the literature on the impact of green marketing on a firm's performance.
- To review the literature on the influence of green marketing on green human capital investment.
- To review the literature on the influence of green marketing on green relationship learning.
- To review the literature on the impact of firm commitment to green on green corporate social investment.
- To review literature on green human capital investment on a firm's performance
- To review the literature on the impact of green relationship learning on firm performance.
- To review the literature on the influence of green marketing capabilities on firm performance.

1.5.2. Empirical objectives

The following empirical objectives were investigated in this study

- To investigate the influence of corporate commitment to green, green corporate social investment, green marketing and firm performance for electronic manufacturers in South Africa.

- To determine the impact of corporate commitment to green on firm performance for electronic manufacturers in South Africa.
- To determine the influence of the green relationship learning on firm performance for electronic manufacturers in South Africa.
- To ascertain the influence of green human capital investment on firm performance for electronic manufacturers in South Africa.

1.6. Research questions

The research was guided by the following questions:

- What is the impact of corporate governance commitment to green on firm performance for electronic manufacturers in South Africa?
- What impact does green corporate governance commitment on marketing capability for electronic manufacturers in South Africa?
- What is the impact of corporate governance commitment on green corporate social investments for electronic manufacturers in South Africa?
- What is the impact of corporate governance commitment to green on green relationship learning for electronic manufacturers in South Africa?
- What is the impact of green corporate social investment on firm performance for electronic manufacturers in South Africa?
- What is the impact of green relationship learning on firm performance for electronic manufacturers in South Africa?
- What is the impact of green human investment on green marketing capabilities for electronic manufacturers in South Africa?
- What is the impact of green human investment on firm performance for electronic manufacturers in South Africa?
- What is the impact of green marketing capabilities on firm performance for electronic manufacturers in South Africa?

1.7 The Manufacturing Sector in South Africa and Legislative Imperative

1.7.1 Legislations Promoting Green Manufacturing

This section presents some of the key legislations promoting green manufacturing in South Africa.

The Constitution of the Republic of South Africa, 1996

The Constitution of the Republic of South Africa stipulates that the state and private sector must protect, respect and fulfill their environmental obligations. This is amplified in Section 24 of the Bill of Rights which spells out that everyone has the right to an environment that is "not harmful to their health and well- being", furthermore citizens have the right to "have the environment protected for the benefit of present and future generations through reasonable legislative and other measures" (The Constitution of the Republic of South Africa, 1996).

The National Climate Change Response (NCCRP) White Paper, 2011

The South African government response to climate and the environmental challenge is captured in the National Climate Change Response White Paper of 2011. According to the vision of this white paper, the SA government has adopted a "long-term, just transition to a climate resilient and lower carbon economy and society." The focus of the white paper is to align social transformation and economic development alongside climate change priorities. This calls for all stakeholders in public and private sector to commit to green initiatives in their operations. Another important legislation is **the Integrated Resource Plan (IRP), 2010.** One of the main objectives of the Integrated Resource Plan is to determine the country's long-term energy needs. South Africa currently relies on 85 percent coal energy, and there is need to transition from this to more energy efficient energy according to the (IRP, 2010). There is a need for all sectors including manufacturing to ensure that their future energy use is sustainable. Other legislations and Acts of Parliament focused on green in the South African Economy include: Renewable Energy Strategy (2003), National Energy Efficiency Strategy (2005), National Energy Act, 2008: Long-term Mitigation Scenario, Industrial Policy Action Plan (IPAP) (2010), National Development Plan (NDP) (2010), Green Economy Accord (2011), Long-term Adaptation of

green economy (2012), Carbon Tax (implementation postponed to 2016) (2013), Medium Term Strategic Framework 2014-2019

According to the (Department of Environmental Affairs in South Africa, 2012), environmental assets and natural resources are valued, protected and enhanced continually. According to Section 24 of the Constitution, as implemented through the National Environmental Management Act (NEMA), "all South Africans have a right to an environment that is not harmful to their health or well-being and to have the environment protected for the benefit of present and future generations." The Constitution compels everyone to take reasonable steps to prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and the use of natural resources. Given the Constitutional imperative, priorities captured in the Millennium Development Goals (MDG), Johannesburg Plan of Implementation (JPOI), and National Strategy for Sustainable Development (NSSD1) and other key government socio-economic policies- the South African government passed the Environmental Protection Act to ensure that businesses operate sustainably. Within this background, electronics manufacturing companies in South Africa are governed by various legislations including the companies Act, the King Codes of good governance, the Environmental Protect Act, the constitution of South Africa among many other industry acts and frameworks. It is therefore imperative for electronics manufacturing companies in South Africa to commit to green in their manufacturing processes. However, given the costs involved in going green, the lack of full knowledge of the economic benefits of green, lack of empirical studies linking green commitment and company performance, it is not surprising that there might still be a lot of electronics manufacturing companies grappling with the commitment to green.

According to the Emerging Markets Research (2016), there has been a transformation in the South African economy from its traditional mining and agricultural dominated economy to a manufacturing and service based economy. Services have grown from less than 20 percent of the economy in 1994 to 62 percent of the economy's GDP in 2015. On the other hand, mining and agriculture decreased from over 40 percent in the 1990s to 10 percent jointly in 2015. The Manufacturing Sector alone according to Stats SA (2016) contributed 12.5 percent of GDP in the second quarter (Q2) 2015. The manufacturing sector in South Africa includes the following industries: cars, chemicals, metal and processed food, electronics and textile products.

According to the Small Enterprise Development Agency (SEDA, 2012), the US, China, and Japan are the top three in dominating the world manufacturing sector. Interesting from this report is that fact that while China contributed only 3 percent to world manufacturing in 1990, its manufacturing grew by over 600 percent to now 18.8 percent of world GDP in 2010. On the other hand, there has been a decrease in manufacturing activity in South Africa. Manufacturing in South Africa now contributes only 0.5 percent of world manufacturing, down from 0.61 in 1990. According to (Stats SA, 2016), compared to other sectors, growth in the manufacturing sector is slower, and its percentage contribution to GDP decreasing as services have continued to play a dominant role in the last decade. Manufacturing contribution to GDP is down from 19 percent of GDP in 1990 to 12 percent of GDP in 2012. The largest in the sector are petroleum products, chemicals, rubber, plastics, metals, electronics, food and beverages, and tobacco products. The focus of this study is in electronics manufacturing which contributes about 5 percent of the manufacturing sector and contributes billions of rand to the GDP and employs thousands of people in South Africa.

According to (SEDA, 2012), motor vehicles receive the highest amount of investments compared with other manufacturing sectors. Among exporters in SA manufacturing, the electronics manufacturing sector is a significant contributor while the motor industry imports about 70 percent of what they export. The Department of Trade and Industry in South Africa developed an industrial development plan-The New Growth Path, with an aim to create 5 million new jobs by 2020. With the current economic situation with the country is in a technical recession, this target is unlikely to be attained due to such challenges as slow economic growth; supply side constraints (power, rail networks and levels of education among others). The IPAP2 identifies among others 'green' and energy-saving industries, as important to creating the required jobs and sustainable economy by 2020. These demands places huge emphasis on the need for the manufacturing sectot to not only grow and expand but to do so in a sustainable way.

Following from these environmental legislations, firm's commitment to green should be a natural extension of the countries commitment. Current literature highlights the need for business to be conducted in a sustainable way or way that generates wealth for present generation without compromising the abilities of future generations to create their wealth (Daft, 2008). The benefits

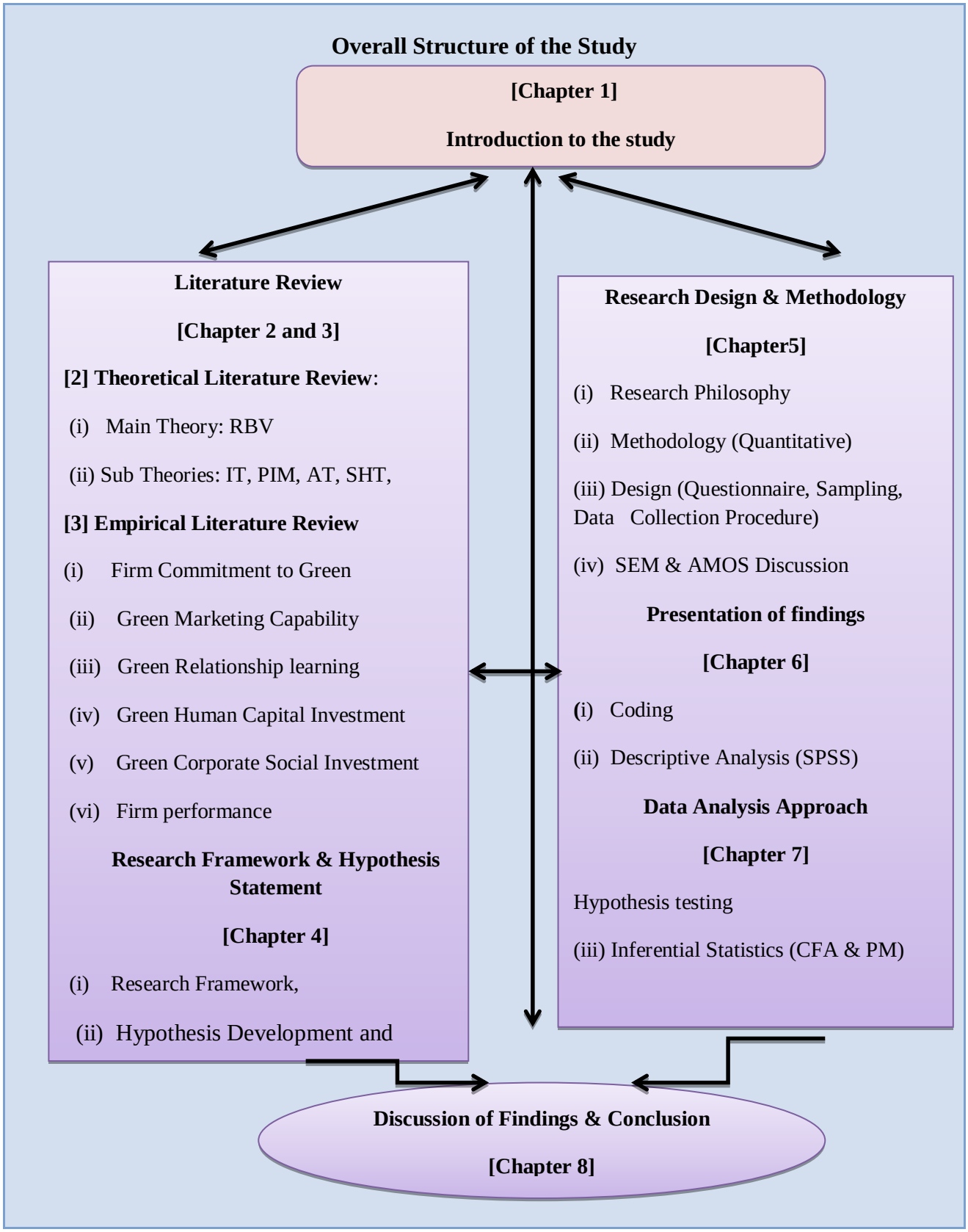
of committing to green have been highlighted in research: value for customers, protecting the environment, contribution to the bottom line and stakeholder satisfaction, financial cost effectiveness, tax incentives contributions and rebates, grants (Brammer & Pavelin 2006; Nidumolu, Prahalad and Rangaswani, 2009; Barstow and Watson, 2008). This study examined commitment to sustainability, green marketing and firm performance in the electronics manufacturing sector in South Africa.

1.8. Definition of Terms

This short section provides brief definitions of the terms used in the current study. Hence, it presents the definitions that were adopted in this study:

- **Antecedent** – A thing that exists before or rationally precedes another
- **Firm Commitment to Green (GCG)** – Firm commitment to green refers to the stands taken by organisations at corporate governance and implementation levels to conduct business in a way that caters not only for the company's profit but also for the environment and all other stakeholders.
- **Green Marketing Capability (GMC)** – Green marketing capability refers to firms' marketing capabilities that are environmentally friendly.
- **Green Human Capital Investment** – This refers to firm's investments in its employees to learn how to conduct business in an environmental friendly many ensuring the triple bottom line.
- **Green Relationship learning** – This refers to how firms learn from suppliers, consumers, other firms in the industry on green issues relating to the industry. Firms learn about new trends, consumer needs, and supplies among others.
- **Green Corporate Social Investments**– This refers to firm's investments in communities, in environment, in a sustainable manner.
- **Firm Performance**– This refers to the financial and marketing output of firms. This includes: sales, market share, profitability. The following figure provides the overall structure of the current study.

Figure 1.2: Structure of the Study



The above figure shows that this study has eight chapters. In chapter 1 the investigator provides an overview of the study. Also, in line with the figure above, the remainder of this study is structured as follows: Chapter 2 provides a review the theoretical literature on the underlying theory and the variables under study. In chapter three, the focus is on empirical literature on the different variables under study. In the same chapter, a discussion of the descriptive information is provided. Chapter 4 is dedicated solely for the conceptual framework and hypothesis development for the current study. Chapter 5 is focused on the research methodology – i.e., research philosophy and research design as well as other aspects. Chapter 6 presents the findings and data analysis approach that was used in the current study. Chapter 7 provides a discussion of the findings together with the limitations of the current study. Finally, Chapter 8 is set aside for the recommendations, conclusion and most importantly – future directions.

1.11. Conclusion of Chapter

This chapter provided an overview of the overall study. The researcher provided a comprehensive introduction to the study.The introduction to the study presented the constructs developed and investigated in the study. It further presented a introduction to the issues that have been researched related to the research constructs. After the introduction, the background of the study was provided. The background to the study gave some foundation that assisted in contextualising the research objectives and research gap filled by the study. Following the introduction and background to the study, the problem and research gap resulting in this study were stated. This was supported by literature review both theoretical and empirical that grounded the research gap and positioned the study. The purpose of the study is rooted on the problem and the identified gap. This resulted in the research objectives and research questions. This was followed by presenting and justifying the importance of the study. After that, a research process was presented followed by the overall structure of the current study.The next chapter provides a comprehensive account of the theoretical literature reviewed.

CHAPTER II

THEORETICAL LITERATURE REVIEW

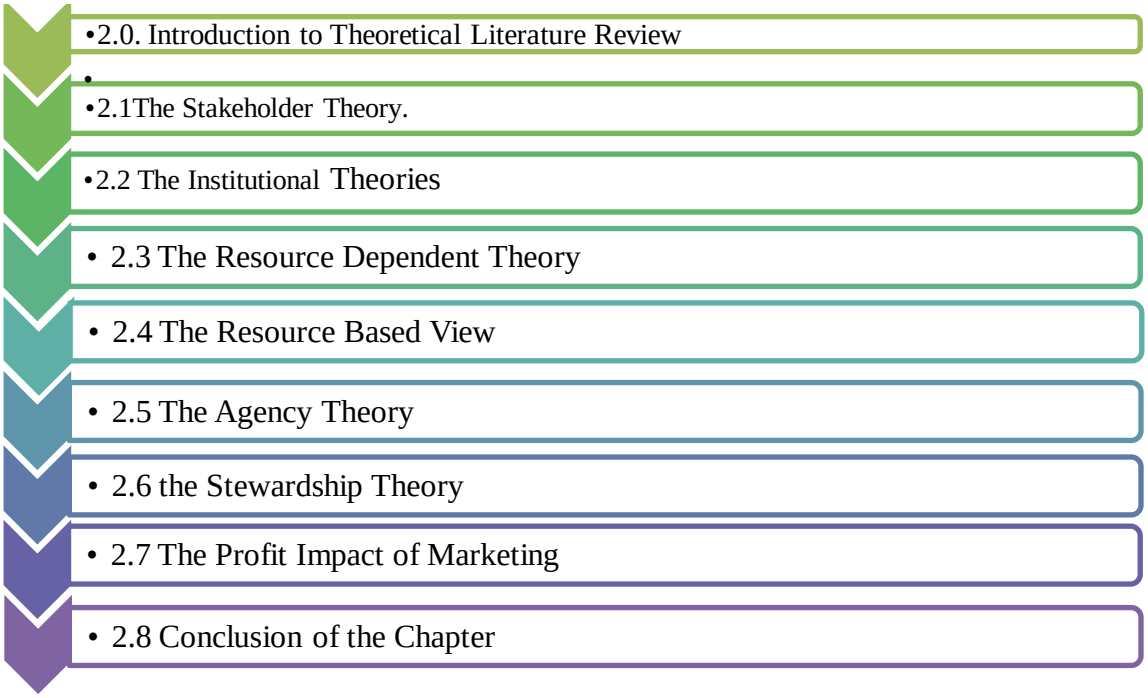
We are at a crossroad[s]; either we ground our research with proper theory or we lose to those who claim to read the wisdom of crowds.

– Steven Gittelman and Elaine Trimarchi, Mktg, Inc

2.0. Introduction to Theoretical Literature Review

This chapter presents the theories that were used to explain the constructs developed in this research. It starts by explaining what a theoretical framework is. It further identifies the theoretical frameworks that were adopted and used in this study. It explained what the frameworks were, how the theoretical frameworks related to the study constructs in the study and how the frameworks was used in the study. A theoretical framework refers to literature that helps a researcher to comprehend the concepts surrounding a study more broadly (Creswell, 1994). The following theories were used in this study: the resource-based theory of the firm, agency theory, stewardship theory, instrumental and resource dependence theory; stakeholder theory, and the Profit Impact of Marketing Strategy (PIMS).

Figure 2.0: Structure of the Chapter



Source: This study (2017)

Figure 2.0, presents the structure of chapter. This section details an introduction to theory and the use of theory in this study. Various authors in business and management have defined theory as "a statement of relations within a set of boundaries and assumptions between concepts" (Corley

and Gioia, 2011; Suddaby, 2014). On the other hand (Giddens, 1989) defined the concept as "a set of properties associated with each other in memory and thus form a unit." Therefore, one can conceptualise theoretical literature as literature based on the use of theory to explain real life situations or conceptual models. This study adopts both theoretical and empirical literature to explain the different constructs developed in the study relating corporate commitment to sustainability, green marketing, green relationship learning, green human resource investment, green corporate social investment and firm performance. This is in line with findings from Weick (1989), that deduction cannot be made from concepts alone, and that there is a need for the connections and relationships in the study unit to be highlighted, thus the importance of theory to explain such relations.

Frynas and Yamahaki (2016) explained that theory helps to maintain scholarly rigor and helps scholars make sense of the complexities of the real world, based on conceptual models, thus its pivotal role in academia. Therefore, the application of theory in marketing research can help explain various variables that might otherwise be ambiguous. In this study, the relationship between variables from different fields including corporate governance, Corporate Social Investment (CSI) and marketing would be better understood through the use of theory. For example, Mellahi et al. (2016) showed that before the use of theory to explain the relationship between corporate social investment and performance, findings from such studies resulted in ambiguous results. Therefore, the use of theory in this study assisted in resolving some of the ambiguity that may arise from trying to understand the variables without using theory. The use of theory in research as opposed to field-specific concepts is advantageous because such theory is applied to diverse fields. For example, in this study one of the theories used –stakeholder theory owes its origin to strategic management and is also applicable to other areas some of which are unrelated to green marketing. The resource dependent theory used in this study also owes its origin from sociology (Pfeffer & Salancik, 1978), agency theory from economics (Jensen & Meckling 1976). Therefore, it will be important to understand the basis and use of the different theories and their application in explaining the constructs in the theoretical model developed in this study and how valuable theoretical insights can be gained from the application of such theories in diverse fields.

Frynas and Yamahaki (2016) analysed 462 academic journal articles on both external and internal drivers of CSI over a twenty-year period (1994-2014). External theories studied include the stakeholder theory and the resource dependent theory, while internal theories include the resource-based view and the agency theory used to explain CSI over the years. Their findings emphasized the importance of both theory-driven explanation of CSI and the use of complementary theories. More than one theory was used because no single theory can fully explain CSI. Following from these finding, this study adopted a multi-theory approach to explaining the variables under study. To describe the external drivers of green CSI in our conceptual model both the stakeholder theory and the resource dependent theory were used. The internal drivers of green CSI were explained by the agency theory and the resource-based view. The concept of corporate commitment to green was explained using the stewardship theory. To explain green marketing capability and firm performance, the researcher used the profit impact of marketing theory. The following section examines each of the theories used in this study and their application to the study.

2.1.The Stakeholder Theory

2.1.1 Introduction to the Stakeholder Theory

The Stakeholder Theory first developed and used in business ethics and organisational management stipulates that a firm has stakeholders over and above shareholders or owners to whom management needs to be accountable to. Such stakeholders include employees, customers, suppliers, financiers, communities, government bodies, trade unions, among others. According to (Miles, 2011); academics seem to have divergent views of who constitutes a stakeholder of an organisation. There is increasing use of the stakeholder theory to study corporate governance and corporate social investment. According to the theory, communities and the environment are important stakeholders who cannot be ignored by corporate actions. In this study, the relationship between corporate commitment to green and green corporate social investment was investigated. This study examined how a firm's commitment to green impacted on its green corporate social investment and its affects on various stakeholders and performance of the firm.

Various authors (Ansoff, 1965; Freeman, 1984) defined stakeholders as groups that can either enhance or bring down an organisation, these includes contract based stakeholders such as employees, customers, suppliers and the broader public stakeholders such as government, NGOs,

interest groups, etc.). In this study, stakeholders included employees of electronics manufacturing companies in South Africa, environmental NGOs, suppliers to the industry, trade associations, and other broader interest groups, consumers of electronics products both industrial and households, the SA government.

2.1.2 Use of Stakeholder Theory in this Study

According to the stakeholder theory, corporate action emanates from pressure from different stakeholders, related to power dependents (Freeman & Reed 1983, Jawahar & McLaughlin 2001, Clarkson 1995) or legitimacy claim (Hill & Jones 1992, Langtry 1994). Following from this, one may postulate that green marketing capabilities in the electronics manufacturing sector in South Africa, emanates from a corporate commitment to green, pressure from interest groups including employees, green relationship learning and this can result in green corporate social responsibility and firm performance. Following from the stakeholder theory, Mitchell et al. (1997) suggested that the impact of different stakeholders is related to three main factors: Power, legitimacy, and urgency. Frynas and Yamahaki (2016) define the power of a stakeholder as its ability to impose its will on others to do something it will not ordinarily do. Legitimacy refers to the reason d'être of any stakeholder and its ability to use power to exercise claims made upon the firm, and urgency refers to the ability of any stakeholder to make claims that call for immediate action. Frynas and Yamahaki (2016), postulates that there have been various interpretations and groupings of the stakeholder theory by various authors for example (Steurer 2006, Egels-Zanden & Sandberg 2010, Garriga Cots 2011). However, there are only two main distinctions made on the stakeholder theory: descriptive and normative approach. According to the normative approach to stakeholder theory- the legitimate interest of all stakeholders should be taken into account by a firm or organisation. Frynas and Yamahaki (2016), labeled this the ethical approach to stakeholder theory. According to their interpretation of the ethical approach, stakeholder's interest are not silent as firms have a responsibility to all stakeholders. On the other hand, the descriptive approach assumes that a corporation is described by the stakeholder model and it is 'a constellation of co-operatives and competing interests' (Donaldson & Preston, 1995), and the management of stakeholder relationships by firms. This approach was termed empirical approach to stakeholder theory by Frynas and Yamahaki (2016) because the approach can be empirically tested. Following this perspective, firms can identify and rank stakeholder interest according to

importance. Therefore, some stakeholders can be silenced. In this study, the empirical approach to stakeholder theory was used to examine the relationship between internal and external stakeholders of electronics manufacturing companies in South Africa. The focus on green relationships learning and green human capital or employees' investment as they related to green marketing capability, green corporate social investment and firm performance. Given that calls have been made by various authors to ignore the normative stakeholder approach, given its little explanatory power (Gray et al. 1996), this study did not attempt to integrate both approaches in its analysis of stakeholders of electronics manufacturing companies in South Africa. Furthermore, in line with corporate social responsibility reviews, this study focused on the empirical and descriptive stakeholder approach in analyzing the electronics manufacturing sector in South Africa in line with such authors as (Frynas & Stephens 2015, Mellahi et al. 2016). Using the descriptive stakeholder approach assisted the researcher to understand whether green marketing commitment is a driver of firm performance and whether marketing capability, green relationship learning, and green human capital investment green are mediating factors to this relation. Current studies in the field of green marketing and CSI currently show how different stakeholders impact on CSI (Lamberti & Lettieri 2009, Surroca et al. 2013). However, there has been very little focus on how different stakeholders impact on green marketing capability and green CSI and firm performance. Using the stakeholder theory from an empirical approach to study these variables was significant to both academia and the manufacturing sector in South Africa as they grapple with understanding the various stakeholders in the electronic manufacturing sector and how their actions impacts on firm's commitment to green, green marketing capability, and firm performance. There has been a substantial focus in literature on the relationship between stakeholder pressure and firm commitment to green policies and strategies (Darnall et al. 2010), the disclosure of their environmental activities (Elijido-Ten et al. 2010) and green CSI (Elijido-Ten et al. 2010). Current literature is lacking in the application of the stakeholder theory to green marketing and especially relating it to green marketing capability and green CSI and firm performance. This study attempted to fill this void in literature by using the stakeholder theory to analyse the relationship between firm commitment to green, green marketing capability, green relationship learning, green human capital investment, green corporate social investment and firm performance. While current studies have also applied stakeholder theory from an empirical approach to various firms and found that firm size has an

impact on firms' commitment to stakeholder pressure, industry-specific studies are still lacking despite the fact that firms in different industries have different industry characteristics that can impact on their stakeholder relations. Filling this gap in literature, this study specifically focused on the electronics manufacturing sector in South Africa which is a sector increasingly being influenced by pressure from various stakeholders, including government, consumers, and NGOs demanding that these companies commit to green business practices. There is also agreement among scholars that different stakeholders impact firms differently and in sometimes conflicting ways (Darnall et al. 2010; Ehrgott et al. 2011). In this light, this study examined how the different variables investigated representing both internal and external stakeholders impacted on firm performance of electronics manufacturing companies in SA. This focus was in line with literature, showing that current studies on CSI and firm performance was mostly at a conceptual level (Barnett 2007, 2014). The empirical studies carried out have resulted in mostly, mixed, inconclusive or negative outcomes between the variables (Wang & Choi 2013, Oikonomou et al. 2014). There are a handful of studies in the field that have shown positive relationships between the variables. However, a majority of these studies were done in advanced economies (Wang & Choi 2013, cf. Mellahi et al. 2016). Thus, there was need for further empirical analysis of these relationships in a developing economy like South Africa. This study empirically examined these relations using hypotheses. Most existing studies assumed that investors and other stakeholders would generally, reward firms that commit to green (Frynas and Yamahaki, 2016). This assumption was made in the development of the conceptual framework used in this study.

2.2. Institutional Theory

2.2.1. Introduction to Institutional Theory

According to (DiMaggio & Powell 1983 cf Frynas and Yamahaki, 2016), the institutional theory proposes that because organisations cannot survive without a certain level of external social approval, there is a need for organisations to conform to the social norm in any given business environment. In the context of this study, the research examines the social environment in the electronics manufacturing sector in South Africa and norms like the King Codes of Governance, (Institute of Directors, 2008); environmental protection norms (department of environmental affairs, 2015); and other industry norms. In explaining why companies comply with these norms

in various industries- Scott (2001), asserts that they do so because of such practices as taken for granted as "the way things are done'. Examining institutional theory (Hotho & Pedersen 2012), identified three main focus areas: the economic approach, the sociological approach, and the comparative institutional approach. The economic approach focuses on the regulatory roles of institutions about their economic activities. In our case, we will be examining environmental protection regulations and corporate governance regulations that compel firms to commit to green. The sociological, institutional theory approach focuses on the legitimacy of these institutions. This relates to stakeholder theory as such legitimacy comes from stakeholder approval. The comparative institutional approach examines such comparative aspects as the business systems, economic interest, and regulation theory. This approach encompasses both the economic and sociological approaches to institutional theory. It addresses how differences in institutional arrangements affect the economic outcomes and competitiveness of firms. In our case, it would be interesting to apply this theory to see how firm's commitment to green and green marketing capabilities, green relationship learning, green human resources investments relate to green corporate social investments and firm performance.

2.2.2 The Application of Institutional Theory in this Study

Current literature shows an extensive application of institutional theory in studies on Corporate Social Investment (CSI) (Jennings & Zandbergen 1995, Doh & Guay 2006, Campbell 2007, Matten & Moon 2008). Despite the extensive use of institutional theory in the field of CSI, there has been a little application of this theory to studying green marketing and firm performance despite the close connection between the variables. This study would apply institutional theory to the study of a firm commitment to green, green marketing capability and firm performance in the electronics manufacturing sector in South Africa. Given that the electronics manufacturing sector serve two main sectors: industrial and households consumers, it would be interesting to know if such institutions are arranged differently to target these different segments of the market and how this relates to their commitment to green, green marketing capability, and firm performance. Current literature has also identified the institutional arrangement factors that impact on various aspects of a firm. These include ethical behaviour (Campbell, 2007; and Jackson & Apostolakou, 2010); impact on corporate social investment (e.g., Montiel & Husted, 2009) on environmental management and practices (Zenget al. (2012) and on disclosure. However, still lacking in current

literature is how such institutional arrangements impact of green marketing capabilities and firm performance. This study seeks to fill the identified gap in the literature by applying the institutional theory, following the comparative approach to electronics manufacturing companies in South Africa. We would examine how firm's institutional arrangements and commitment to green relates to green marketing and firm performance.

According to an analysis of the current literature on the application of institutional theory, (Frynas and Yamahaki, 2016), postulated that 'institutional isomorphism' – the belief that strategies and practices of firms in a given industry will become similar, given that these firms are faced with similar pressures and compliance requirements. Following this approach, studies have been carried out on various subjects including CSR to find out such similarities among firms in the same industry, or national context (Holder-Webb & Cohen 2012, Fransen 2013, cf Frynas and Yamahaki (2016). Various authors have postulated from a comparative institutional approach that differences in CSR result from differences in location and industry of the firm (Sison 2009; Xu & Yang 2010; Jamali & Neville 2011; Avetisyan & Ferrary 2013). In this study, the researcher also tested whether industry location, industry, the size of firm impacts green CSI and firm performance for electronic manufacturers in South Africa. Despite these findings in the literature, there has been the little application of the institutional theory to examine the relationship between firm's commitments to green, green marketing, and CSI and firm performance especially in developing economies like South Africa. This study fills the identified vacuum in the literature by extending the application of institutional theory to green marketing and firm performance in the electronics manufacturing sector in South Africa. Current literature also identifies the fact that given that certain firm's especially multinational companies operate in different institutional settings with different legislations and consumer pressure which are sometimes conflicting. It will be interesting to find out if these differences in institutional pressures result in different practices and commitment to green in the electronics manufacturing sector in South Africa. This sector is made up of both local and multi-national companies. Literature also shows that firm's commitment to green sometimes differs from the green practices within a certain organisation (Jamali 2010b; Holder-Webb & Cohen 2012; Bjerregaard & Lauring, 2013). Within this context, it will be interesting to see if there are any such gaps between commitment to green and green marketing capabilities, green relationship learning,

green human capital investment, green corporate social investment and firm performance within the electronics manufacturing sector in South Africa. Frynas and Yamahaki (2016), analysed current literature on the application of institutional theory and concluded that while institutional pressures cause some firms to commit to green, it causes others to resist. Applying this theory in the context of this study, it will be interesting to examine the differences in commitment to green in different electronics manufacturing companies in South Africa. An important advantage of the use of institutional theory is the fact that it allows certain aspects of an organisation to be studied independently as fields on their own. For example, it can be applied to green marketing and green CSI as a specific mode of governance within the corporate governance field. Following this postulation various authors have examined institutional theory and its application to CSR from different perspectives: it complements or fails to complement existing corporate governance theories (Amaeshi& Amao 2009, Kang &Moon 2012); CSR as an institution complements other social solidarity institutions in society (Kinderman 2012). It would be interesting to extend the application of institutional theory not just to CSR but green CSI and green marketing in the electronics manufacturing sector in South Africa. This is in line with the proposition from Frynas and Yamahaki (2016), CSR scholarship could be potentially expanded to embrace other fields such as marketing, sociology and political science if it is treated as an institution within the broader societal governance systems. This study aims to broaden the application of institutional theory to both green marketing and green CSI.

2.3 Resource Dependence Theory

2.3.1. Introduction to the Resource Dependent Theory

According to the resource dependent theory, the success of organisations is directly linked to their dependence on their environment and surroundings for the supply of key resources needed for the firm (Pfeffer & Salancik (1978). We would apply this theory to complement the institutional and the stakeholder theory as we analyse the relationship between firm commitment, green marketing capability, green relationship learning, green human resource investment and how these relate to green CSR and firm performance. We assume that electronics manufacturing companies in South Africa are dependent on its environment to supply technological, human and other resources that are needed for the survival of these institutions. Given these resources are

finite; there is increased pressure for organisations to commit to green in its use these resources. In this light, Frynas and Yamahaki (2016), postulated that the demands of the environment must be attended to by organisations that depend on this environment for their survival. Literature shows that the resource dependent theory was initially formulated to analyse the relationship between organisations and its different units. However, its use has now been extended to examining the relationship between firms and other institutions and stakeholders (Julian et al. 2008).

2.3.2. The Application of the Resource Dependence Theory in this Study

In this study, we would apply this theory to analyse the relation between electronics' manufacturing companies in South Africa and various institutions such as environmental laws, Green NGO pressure, consumer pressure that cause firms to commit to green, actors such are employees, industry associations, and how this impacts on green CSI and firm performance. Though the resource dependent theory is closely linked to the institutional theory, it differs from the institutional theory in that it allows for a strategic decision. In the case of this study, the strategic decision to commit to green. This is an important decision as it guides resource mobilization and allocation to building green marketing capability, green relationship learning, green human resource investment that can result in green CSI and firm performance. A firm's commitment to green depends partially according to the resource dependent theory on the firm's ability to identify which social demands on society to prioritize. According to the resource dependent theory, the needs of actors who control critical resources will be prioritized. For example, companies that have a high dependency on female staff pay more attention to work-life balance issues (Ingram & Simons 1995). It would then be prudent that firm in the electronics manufacturing sector targeting consumers who care about the natural environment will pay attention to committing to green and green marketing capabilities at a strategic level. The role of the board of directors in ensuring that important resources (knowledge, personal ties or legitimacy), flow within the organisation is emphasized by the resource-dependent theory. In this light, this study will also highlight the role of boards of electronics manufacturing companies in South Africa to ensure that the firm commits to green and hence green marketing capability enablement. Following from this perspective (Frynas and Yamahaki, 2016), found that various

recent studies using the resources dependent theory highlighted the role of the board (de Villiers et al. 2011, Ortiz-de-Mandojana et al. 2012, Hafsi & Turgut 2013, Mallin et al. 2013). Current research also shows that the composition of the board would impact the type of commitments the firm would make. One would, therefore, argue that it is not surprising that organisations with board members who care about the environment are more likely to commit to green willingly without being compelled by legislation. Similarly, organisations with female board members are more likely to also commit to issues of gender parity than those with board members being only male (Hafsi & Turgut, 2013). An organisations corporate social investment is directly positively impacted by a diverse board according to (Hafsi & Turgut, 2013). The role of the board of directors in enabling the firm's commitment to green was emphasised by (Ortiz-de-Mandojana et al., 2012). In this study, it was also assumed that that firm commitment to green would directly be related to the composition of directors within the company, the environmental laws of South Africa and pressure from both consumers and lobby groups on green issues. More importantly to this study is the findings from research on resource dependent theory which shows that firms with high interaction with outside stakeholders have better environmental performance (Kassinis & Vafeas 2006, Ortiz-de-Mandojana et al. 2012, Ramanathan et al. 2014). In the case of this thesis, this will be used to analyse the relation of mediating factors such as green relationship learning on green marketing capability and how this relates to green corporate social investment and firm performance for electronics manufacturing companies in South Africa. This approach in applying the resource dependent theory is supported by current literature where environmental performance gains were linked to relation to the local community, stakeholder pressure, economic pressure and environmental regulations (Ramanathan et al., 2014). This study will apply the resource dependent theory to the understanding of the relationship between electronics manufacturing companies in South Africa and its environment especially key stakeholders as environmental NGOs, employees, industry associations, government legislations, etc. This will enable us to understand the commitment to green and how it impacts on green marketing capability and firm performance.

2.4 Resource-Based View

2.4.1.Introduction of the Resource-Based View

The resource-based view was first proposed in the groundbreakings works of (Penrose, 1959). In her study, she showed that firms were fundamentally different when it came to their strategic and resource capabilities and their abilities to explore and maximize these resources to develop a sustainable economic advantage over the competition. This theory will be used in this study to complement the resource dependent theory, the stakeholder theory and the institutional theory which is more outward looking regarding analyzing the firm. This approach will enable us to fully contextualize the marketing resource capability within electronics manufacturing firms in South Africa and to examine how these relate to firm performance and green corporate social investment.

The focus of the resource based view is on how firms can acquire firm-specific resources that can give these companies a competitive edge over the competition. It proposes that firms can acquire extra benefits when they have valuable, rare and inimitable resources (e.g. Wernerfelt 1984, Barney 1991, 1997, cf. Kraaijenbrink et al. 2010). Following from the works of (Penrose, 1957), a framework was developed to help firms understand their competitive advantage by asking a series of questions as to whether the set of resources owned by an organisation are valuable, rare, costly to imitate and are being used by the firm to its advantage (Barney, 1997). This framework was named the VRIO framework. Following from this theory and framework proposed. This study suggests that electronics manufacturing companies in South Africa possess, valuable, rare, inimitable resources that when exploited properly gives the firm a competitive advantage. We further apply this theory to specific resources: green marketing capabilities, green relationship learning, and green human capital investments. These resources when fully exploited by the electronics manufacturing companies will give the firms a competitive advantage and will result in green corporate social investments and firm performance.

Current studies in the field of CSI from a resource-based view have proposed that investing in CSI can lead to firm economic performance (e.g. Hart 1995, Russo & Fouts 1997, McWilliams & Siegel 2011). However, lacking in current studies is focused research on the mechanism through which these corporate social investments are realized. My study will broaden the

application of this theory to understanding how firm's commitment to green results in firms is deliberately building green marketing capabilities, which when combined with green human capital investments, and green relationships learning can result in green corporate social investments and firm performance (Frynas and Yamahaki, 2016). We would add to existing literature on the application of the RBV by going beyond economic performance to include both marketing and financial or economic performance for electronics manufacturing firms in South Africa.

2.4.2 The Use of the Resource-Based View in the current study

Justifying the investment in green is still an issue for various electronics manufacturing companies in South Africa. However, current research links investments in corporate social investments to firm's competitive advantage and performance (Frynas and Yamahaki, 2016). Building on current literature, we would propose that the justification for firms to commit to green and invest in green marketing capabilities, green relationship learning, and green human resource investment is the fact that, such investment will result in both green CSI which gives the firm a competitive advantage and also financial and economic performance. Therefore, the resource-based view of the firm will help us to understand the importance of corporate commitment to green and how this translates to green corporate social investments and firm performance through the building and exploitation of green marketing capabilities. This is in line with a proposition by (Chen et al. 2006) that capabilities or resources developed by firms to realize firm performance and green CSI can include green innovations capabilities. Building from this proposition, stakeholder relations management and strategic innovations have also been identified in the literature as adding to firm competitive advantage and performance (Torugsa et al. 2012). Following from this, we also propose, that green relationship learning and green human capital investment will positively enable green marketing capabilities that will result in green CSI and firm marketing and economic performance. Another key area identified in the study of CSI is that of a reputation for sustainable leadership ((Lourenco et al. 2014). Examining current literature on the empirical application of RBV to CSR, the focus has been on statistically testing social and environmental performance and economic performance (Russo & Fouts 1997, Menguc et al. 2010, Ben Brik et al. 2011). Current research also points to the fact that the

resource-based framework has been applied superficially in various sectors in studies linking green capabilities to performance framework (Falkenberg & Brunsael 2011, Peters et al. 2011). Recent studies call for the need to integrate studies on CSI with other technical parts of a business to realize more sustainable competitive advantage (Huang et al. 2015). This study answers this call by not just linking firm commitment to green to green CSI and firm performance but, examining the mediating role of technical capabilities such as green marketing capabilities, green human resource investments and green relationship learning to a firm's performance and green CSI. Given that no single theory can adequately contextualize, the relationship between, these internal and external resources, the use of multiple theories complements each other in explaining these relationships.

This study will define and relate the resource theory of the firm to electronic manufacturers in South Africa. Extant literature relating a firm's resources and performance exist in various marketing and management studies (Morgan & Autry 2009, Zott, 2003, Krasnikov & Jayachandean, 2008, Newbert 2007, Sun, 2010). These authors have shown that a firm's resources influence performance (Krasnikov & Jayachandran 2007; Newbert 2007, Sun, (2010). Sun (2010), made his assertion in line with previous authors that companies with superior resources in IT, marketing, operations will have a better competitive advantage and thus do better than competitors in the market. This was exploited further by (Vorhies, Morgan and Autry, 2009), who showed that resources, when converted to capabilities have a greater impact on performance including customer satisfaction and shareholder value. Though studies have shown the importance of Marketing capabilities, human resources capabilities and green relationship learning relate to firm performance independently, literature that shows how these combines to impact performance is surprisingly scarce (Sun, 2010).

Given that the relationship between marketing and human capital investments and green relationship learning are increasing, filling this gap is important in advancing knowledge in the field of marketing. Particularly, this study examines marketing capabilities, human resource investment and relationship learning and how they relate to each other and performance. This study seeks to propose a better understanding of these variables and how they contribute to businesses in the electronic manufacturing sector in South Africa. Marketing capabilities rely on

gathering market knowledge, identifying consumer trends, organizing marketing resources, and satisfying consumer needs (Krasnikov & Jayachandran, 2008).

2.5. Agency Theory

2.5.1 Introduction to the Agency Theory

The agency theory came out of the works of (Berle & Means, 1932), and was first used to examine the relationship between owners and managers in big companies. Today its application has been broadened to include small companies and the relationships analysed broadened and now include other stakeholders such as employees, suppliers, and buyers (Eisenhardt, 1989). The focus of the agency theory is to analyse the relationship between "principals" (individuals or firms that employ others to carry out a specific work responsibility) and "agents" (the ones that do the job). Our study is focused on electronics manufacturing companies in South Africa, some of which are run by principals and others by agents. This study would seek to see whether there is a difference in commitment to green between firms run by principals and those run by agents. In our case, the relationships under study will include managers, owners, employees, and industry associations.

According to the agency theory, governance mechanisms are required to resolve the agency problem- a problem resulting from any conflict between principals and agents, or the inability of principals to effectively monitor the work of agents to implement the required policies (Spence & Zeckhauser 1971, Jensen & Meckling 1976, Amihud & Lev 1981, Eisenhardt1985).

There is empirical literature arguing that commitment to green and CSI are self-serving initiatives of managers seeking approval from external stakeholders but hurts the owners (principal) as this result in lower profits Friedman (1962). This view is supported by various studies which found a negative relationship between corporate philanthropy and firm financial performance (Galaskiewicz 1985, Atkinson & Galaskiewicz 1988, Werbel & Carter 2002, Barnea & Rubin 2010, Faleye & Trahan 2011). For example, studies show that managers commit to green to either gain external, private reputation benefits through their CSI activities (Barnea & Rubin, 2010) or invest in green employees training and other HR friendly activities to get away with their managerial excesses (Faleye & Trahan, 2011). However, there is increased pressure both on principals and agents in the electronics manufacturing companies in South

Africa today to commit to green. It would be important to understand how the use of green marketing capabilities, green human resource investment, and green relationship learning can result in a firm's performance and green CSI.

4.5.2 The use of the Agency Theory in This study

It would also be interesting to understand if there is any difference in commitment to green among firms run by managers (agents) and those run by owners (principals) and how this relates to firm performance in the electronics manufacturing sector in South Africa. This position is supported by current studies pointing to the fact that there is a positive relationship between commitment to green and firm performance. However, lacking in current literature is the mechanism by which such commitment translates to financial and nonfinancial performance and green CSI. We, therefore, propose the application of the agency theory to complement other resource-based theories in our study to understand the critical difference in commitment to green between agents and principals in electronics manufacturing companies. We further examine the mediating role of marketing capabilities, green human capital investments and green relationship learning as mechanisms through which firms can realize green CSI and firm performance.

Literature, also show that foreign investors also support commitment to green and prefer to invest in responsible firms to avoid various risks including reputation and financial risks (Oh et al., 2011). Despite this strong proposition, studies applying the agency theory to understand a firm commitment to green and firm performance in South Africa are scarce. This study, therefore, fills that gap in the literature by proposing and testing hypothesis relating firm's commitment to green and firm performance in South Africa, using various theories including the agency theory to examine if the type of ownership of the company determines firm commitment to green. The Agency Theory has various limitations such as its inability to provide a full explanation for either green CSI or firm performance (Eisenhardt, 1989). In this study, the Agency theory would be used together with stakeholder theory, resource-based view, and institutional theory to fully analyse the variables that relate to firm performance and green CSI as a result of a firm's commitment to green in the electronics manufacturing sector in South Africa.

2.6 The Stewardship Theory

2.6.1. Introduction of the Stewardship Theory

According to (Donaldson and Davis, 1991), the main thrust of the stewardship theory is that having the same board chair as the CEO will maximize shareholder value. According to the stewardship theory, with its roots in sociology and psychology, employees are pro-organisational and can be trusted (Davis, Schoorman, and Donaldson, 1997). These authors further assert that the stewardship theory was designed to analyse instances where an executive playing the role of a steward is motivated to act in the best interest of owners or principals. The theory assumes a model of a man who is a steward and whose behaviour is structured such that pro-organisational, collective behaviours have higher utilities than individualistic, self-serving behaviours. Following from this, the behaviour of a steward will be in line with that of the organisation. Therefore, the organisational good will be prioritized over personal self-serving behaviour by a steward, even in instances where personal interest conflicts with organisational interest. As explained by (Donaldson and Davis, 1991), this is because the steward places higher utilities on corporate interest over personal interest. This is considered rational behaviour in line with the steward theory. Given that the steward seeks to realize organisational goals such as sales, profitability, and growth over self-interest, the steward's behaviour is collective according to the stewardship theory. In the context of my study, I would assume that managers and executives of manufacturing companies in South Africa, acting as stewards will act in the best interest of principals. Managers will commit to green in line with the profits, sales and growths objectives of principals. They will not put any personal interest over corporate interest. In line with the stewardship theory, managers of electronic manufacturing companies will place higher utilities on corporate goals such as firm performance, green CSI over personal goals.

2.6.2 The Use of the Stewardship Theory in this Study

According to (Donaldson & Davis, 1989, 1991), the underline premise of the stewardship theory is the fact that relationships are based on behavioural premises. Within this context, manager's motivations are aligned with the objectives of the organisation and not personal interest, as they act as stewards of the organisation. Therefore, following from this theory, one would expect managers of electronics manufacturing companies in South Africa to act as stewards of these

organisations and committing to green in line with the regulations of the South African constitution and legislations on green and in the interest of the company's profit and other corporate social investments interests. The steward's utility functions are maximized when they seek and maximize stakeholder and shareholder interest of profitability, corporate social investments, etc. Given that the SA electronics industry is made up of many shareholders and stakeholders with multiple interests, the stewardship theory holds that managers-stewards in these organisations will act in the best interest of the firm. Most stakeholder groups are satisfied when a steward acts in the best interest of the organisation as a whole. Such best interest can be to commit to green, profitability, green CSI, green marketing, and improved customer satisfaction, etc. Given the limitations of the agency theory discussed above. We would use the stewardship theory to get an understanding and interpret the behaviour of managers in manufacturing companies in South Africa as they commit or nor commit to green. Empowering structures rather than those that promote monitoring and control are the focus of stewardship theory. Given the risks in businesses, the approach or theory used by owners when contracting with managers will depend on some risks they are willing to shoulder. Risks-averse owners will rather use the agency theory approach in contracting while high-risk owners will prefer the stewardship approach or any other approach in between when contracting with managers. As a result of these findings in research, it is clear that no single theory is sufficient to explain the behaviour of managers when it comes to commitment to green within the electronics manufacturing sector in South Africa. We would, therefore, use various complementary theories including the stewardship theory, agency theory, resource dependency theory to explain corporate commitment to green by managers in various electronics manufacturing companies in South Africa.

2.7. The Profit Impact of Marketing Strategy (PIMS) Paradigm

2.7.1 Introduction of the Marketing Strategy (PIMS) Paradigm

The Profit Impact of Marketing Strategy (PIMS) paradigm was introduced by (Buzzel and Gale, 1987) as a hybrid of management practice, industrial organisation economics, strategic management and strategic marketing. The PIMS programme started in 1972 as an internal project at General Electric (GE) and was used for many years as a tool for corporate and business

planning. The theory states that competitive position and strategy towards a market structure will have interactive effects on the strategic business performance (PIMS) paradigm will form the theoretical underpinnings of this study.

2.7.2. The use of the Marketing Strategy (PIMS) Paradigm

The current study will use marketing capabilities as the competitive strategy towards the external dimensions from the predictors. What it means is that, once the green marketing capabilities are strongly developed, then there is the likelihood that a firm's strategic objective of improved performance can be realised. Market orientation model developed by (Jaworski and Kohli, 1993) explained that market orientation leads to business performance which is in the form of profits, sales volume, market share and sales growth.Many researchers like: (Akroush and Al-Mohammad, 2010); Griffith, Yalcinkaya, and Calantone, 2010; Parnell, 2011); Varadarajan, 2011) all agreed that there is a correlation between marketing tactical capabilities and firms' performance.

A meta-analysis approach was also used in a study that was conducted by (Morgan, Katsikeas, & Vorhies, 2012); Bolton, 2004) and revealed that there were relationships between marketing capabilities and performance. The current study is grounded on the theory that market orientation or marketing capabilities of an organisation lead to firm performance. This assertion is evident from the theory as well as the empirical literature that, when an organisation becomes marketing oriented, there is a high probability that it could lead to high company's performance.

2.8 Chapter Summary

In this chapter, the researcher reviewed the different theories that are used to explain the variables used this study. Theories used in this study, included the stakeholder theory, the agency theory, the resource dependent theory, the profit impact of marketing theory. For each of the theories reviewed, this study defined it; explain the application of the theory to interpret relations proposed in the research model in this study and how the theory will apply to the findings of this study. Each theory reviewed presented different perspectives and how the theories have been applied in different areas. It was realised that most of the theories adopted had been applied in different business areas before nut not in marketing. It was interesting to apply these theories to marketing. The follwong chapter will discuss the empirical literature review.

CHAPTER III

EMPIRICAL LITERATURE REVIEW

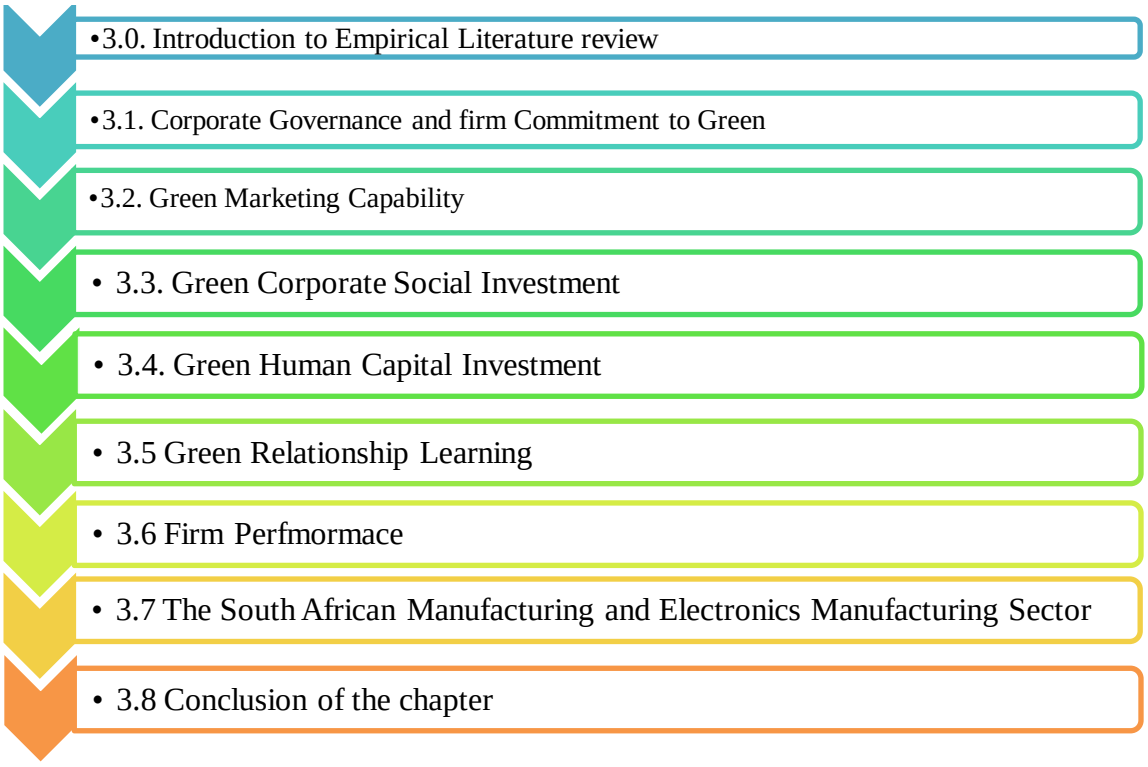
We are at a crossroad(s); either we ground our research with proper theory or we lose to those who claim to read the wisdom of crowds.

– Steven Gittelman and Elaine Trimarchi, Mktg, Inc

3.0 Introduction to Empirical Literature Review

The following section discusses the empirical literature for the individual variables under study. This chapter introduces each of the constructs under investigation. The constructs are defined; existing empirical literature on each of the constructs reviewed. The process of reviewing the literature highlight the existing debates and issues investigated by prior researchers on the constructs developed in this study. Following the discussion on current issues investigated by previous authors, the research gap is contextualised and the need for the current study established. The constructs of corporate commitment to green, green marketing capability, green relationship learning, green human capital investment, green corporate social investment, and firm performance are defined and clarified. This is followed by detailed literature review on the constructs to present the existing debates and issues researched. This chapter also presents literature on the electronics manufacturing sector in South Africa.

Figure 3.0: Structure of the Chapter



Source: This study (2017)

Section 3.2 presents literature on corporate governance. This is followed by section 3.3 that presents literature on firm commitment to green. Section 3.4 presents literature on green marketing capability. Section 3.5 presents literature on green human capital investment. Section 3.6 presents literature on green corporate social investment. Section 3.7 presents literature on firm performance. Section 3.8 presents literature on the manufacturing and electronics manufacturing sector in South Africa. Section 3.9 is the conclusion of the chapter. The following section presents detailed discussions on the the different sections in this chapter.

3.1. Corporate Governance

3.1.1 Definition of Corporate Governance

Corporate governance could be defined as a system that comprises of rules, practices, and processes through which a company is directed and controlled. In order words, it involves balancing the interests of a company's many stakeholders, such as shareholders, management, customers, suppliers, financiers, government and the community.

The Business Dictionary defines corporate governance as the framework of rules and practices by which a board of directors ensures accountability, fairness, and transparency in a company's relationship with all its stakeholders (financiers, customers, management, employees, government and the community). The corporate governance framework comprises of three main components. They are: (1) explicit and implicit contracts between the company and stakeholders for the distribution of responsibilities, rights, and rewards, (2) procedures for reconciling the sometimes-conflicting interests of stakeholders in accordance with their duties, privileges and roles, and (3) procedure for proper supervision, control and information-flows to serve as a system of checks and balances. Corporate governance put in place rules and policies to dictate corporate behaviour. According to (Crow, 2015), corporate governance is the "act of steering, guiding and piloting and organisation- the duty of a board of directors. While all stakeholders of an organisation are important none- is corporate governance or can be used as a proxy for it. It is what the board of directors do to steer, guide and direct the firm." Shleifer & Vishny, (1997) defined corporate governance as accountability to providers of capital; it is could also be defined as how investors get the managers to give them back their money. Corporate governance was further looked at from the perspective of dealing with conflicts between stakeholders and how

companies are directed and controlled (Goergen, 2012). Corporate governance "the whole set of legal, cultural, and institutional arrangements that determine what public corporations can do, who controls them, how that power is exercised, and how the risks and return from the activities they undertake are allocated" (Blair, 1995).

Following from these definitions (Goergen and Renneboog, 2006), defined a corporate governance system, to be a total of mechanisms that management (agents) runs the firm for the benefit of one or several stakeholders (principals). Interested parties, in this case, includes: shareholders, creditors, suppliers, clients, employees and other parties with whom the firm conducts its business. Legally corporate governance refers to the combination of legal and non-legal principles and practices affecting control of publicly held business corporations. However, corporate governance affects not only who controls publicly traded companies and for what purpose but also the allocation of risks and returns from the firm's activities among the various participants in the business, including stockholders and managers as well as creditors, employees, customers, and even communities. In broad terms, "corporate governance refers to the way in which a corporation is directed, administered, and controlled. Corporate governance also concerns the relationships among the various internal and external stakeholders involved as well as the management processes designed to help a corporation achieve its goals. According to (Baker and Anderson, 2010), of prime importance are those mechanisms and controls that are designed to reduce or eliminate the "principal-agent problem".

In this study, both the business and the legal definition of corporate governance were adopted. The statutory definition of corporate governance was adopted regarding the King Codes of Corporate Governance in South Africa, and various other legislations governing businesses concerning commitment to green. The use of the King Codes of governance was complimented with current research by academics in the field of corporate governance especially how it related to a corporate commitment to green in manufacturing companies in South Africa.This study examined the topic of corporate governance in the electronic manufacturing sector in South Africa on the rules put in place to direct corporate behaviour concerning commitment to green.

Globally, various issues have been studied relating to corporate governance. These include: agency problem (Denis, 2001), issues of ownership structure and voluntary disclosure (Eng and Mak, 2003), culture and governance (Haniffa and Cooke, 2005), maximising shareholder value

(Lazonick & O'Sullivan, 2000), ownership and its relationship to governance (Daily, Daltin and Rajagopalan, 2003), ethics and CSR (Christesen, Peirce and Hartman (2007), corporate governance and firm profitability (Joh, 2003), a stakeholder approach, shareholder value the role of antitakeover measures, board structure, capital market governance, compensation and incentives, debt and agency costs, director and officer labour markets, fraud, lawsuits, ownership structure, and regulation (Stuart, 2006). Despite the vast range of issues studied concerning corporate governance, there are limited studies directly linking corporate governance to a corporate commitment to green. These limited studies on the subject are despite the fact that various stakeholders in organisations are increasingly calling on firms to commit to green. This study filled this gap in existing literature by first linking corporate governance to a firm commitment to green in South Africa and then relating it to green marketing capability, green relationship learning and green human resource investment and showed how these relate to green CSI and firm performance. The following section examined corporate governance in South Africa and related it to a firm's commitment to green.

3.1.2 Firm Commitment to Green

Increased global warming, rising environmental degradation and its impacts on humans have led to a new kind of consumer today, a customer that demands more from firms and vote with their buying power (Chamorro and Bañegil, 2005). These types of users are increasing the world over, and businesses can no longer ignore their concerns. There is also an increased regulatory framework such as environmental agreements signed by governments and governance codes such as the King 3 code of governance for South African companies (Institute of Directors, 2008). These regulations compel companies to comply with integrated reporting and to ensure that needs of stakeholders especially consumers and communities are catered for by businesses. In this light, going green or committing to green has become prevalent in businesses the world over. According to (Graci and Dodds, 2008) various industries have now focused on understanding the business case for green. Businesses have moved beyond being committed to green for the sole purpose of being green because of consumer pressure, civil society pressure, the press or complying with regulatory requirements. Firms have over the years realized the strategic importance of green. The realisation of the vital importance of green has resulted in more companies being committed to green. This study contextualised the literature on firm's

commitment to green the world over and focused on company's commitment to green in manufacturing especially the electronics manufacturing companies. The study reviewed literature that clarified the extent of commitment to green in the electronics manufacturing sector in South Africa. The study further reviewed literature linking commitment to green with green marketing, green relationships learning, green human capital investment and firm performance.

Table 3.1: Summary of main Empirical studies on Corporate Commitment to green

Author	Objectives	Finding	Relation to Current Study
Patricia Martínez (2015)	Examining how green marketing relates to customer loyalty: green trust, green satisfaction and green overall image.	Green overall image was positively related to green trust, green satisfaction and green loyalty.	Current study is focused on green marketing from firm perspective while this study focuses from consumer perspective.
Chen (2010)	The relationship between green brand equity and its driver: brand trust, brand satisfaction, brand loyalty is explored in the study.	According to findings from the electronics sector in Taiwan, green brand image, green satisfaction, and green trust are positively related to green brand equity.	The study was conducted in the electronics industry in Taiwan and the current study was conducted from a firm's perspective in the Electronics manufacturing sector in South Africa.
Narayan (2013)	The paper was aimed at showing the relationship between commitment to green and marketing, environmental and financial benefits.	Findings used case studies to show the importance of green marketing in various sectors, especially the food sector.	The paper is related to the current study as it proposes to some extend a theoretical relationship between green marketing and performance. However, the study does not develop any empirical model but based its findings on a few case studies in the USA.
Chang and Fong (2010)	The study develops a model relating green customer satisfaction and green customer loyalty.	The findings showed the following. (1)green product quality ispositively associated with green customer satisfaction and green customer loyalty; (2) green corporateimage is positively associated with green customer satisfaction and green customer loyalty; and (3) green customer satisfaction is positively associated with green customer loyalty.	While this study introduced new green conception and proposed model to measure consumer loyalty, the current study proposes new conceptualization of the relationship between firm commitment to green, green marketing, firm performance and green CSI.

Author	Objectives	Finding	Relation to Current Study
Fraj-Andre, Martinez-Salinas and Matute-Vallejo (2009)	Focus was on the relationship between environmental marketing and firm performance.	Findings showed a positive relationship between environmental marketing and firm performance. Firms with environmental marketing strategy have a better competitive advantage.	This study focuses on environmental marketing; however, the current study examined green markeing and firm commitment to green and how it related to firm performance.
Khare (2015)	The study examines the relationship between consumers' past environmental attitudes, socialand personal environmental norms, social influence, and green self-identity and greenbuying behaviour.	According to the findings green self-identity, peer influence, and past green buying behaviour relates positively to purchase of green product.	While this study focusses on consumer behaviour relating to green, the current study examined green in relation to performance from the firm perspective.
Noonan and Coleman (2013)	The paper focuses on sustainability, and green marketing particularly marketing to green communities.	According to the study there is a need for firms to shift their marketing strategies to reach the needs of green consumers.	Given the recommendations from the study for marketing strategy to be shifted to meet the needs of green consumers. It would be interesting to find out from this current study whether firms are actually committing to green in the electronics manufacturing sector in South Africa and how this relates to firm performance.

Author	Objectives	Finding	Relation to Current Study
Banerjee, Gulas, and Iyer (1995)	The study carries out a content analysis to understand the structure of green advertising.	According to the findings, green ads could be classified into three: according to the sponsor-private/public, NGO; focus of the ad, and dept of the ad.	The focus of this article on green advertising is related to green marketing construct in the current study. This construct in the current study goes beyond green advertising to involve green products and green marketing capability in general.
Leonidou (2011),	The paper examines the trend of green advertising in international firms in a 20 year period.	Findings showed various interaction effects among various dimensions of green advertising.	This study relates to the green marketing capability construct developed in the current study.

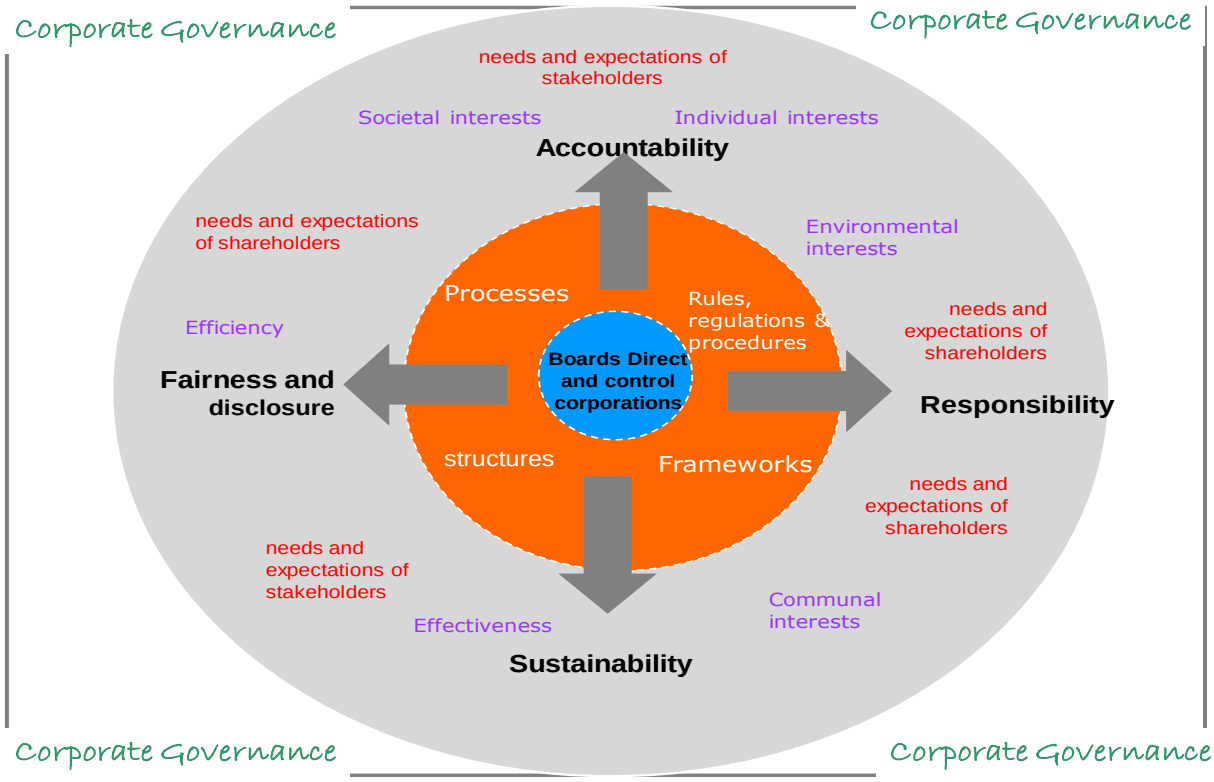
3.1.3 Corporate Governance in South Africa

Research in corporate governance in South Africa has over the years focused on various issues. Issues researched on included: using corporate governance to pursue the triple bottom line (Sukhdeo and Arnolds, 2016); corporate governance and the Company's Act, (King, 2009); corporate governance and ethics in the context of the second King Report (Höver, 2005); corporate governance and CSI on SMMEs in South Africa, (Swanepoel, Strydom & Nieuwenhuizen, 2010); advances in corporate governance on the Johannesburg Stock Exchange (Mans-Kemp, Erasmus & Viviers, 2016); board diversity and sustainability (Oosthuizen & Lahner, 2016); assessing reporting on corporate governance in South African firm (Barac and Molio, 2010); corporate governance compliance (HE Scholtz, 2014). While current research on corporate governance in South Africa relates the subject of corporate governance to various variables, such as business ethics, corporate reporting, firm performance, board diversity, board size, accountability among others, there is little focus in current literature that relates corporate governance to company's commitment to green. However, issues of sustainability and green have been raised as key issues (Oosthuizen & Lahner, 2016) in current corporate governance literature in South Africa. This study, filled the void in existing literature, by introducing the concept of corporate commitment to green to corporate governance literature and then related it to green marketing and firm performance. The following paragraphs focused on the development of corporate governance principles and advances in corporate governance research in South Africa.

There is increasing evidence (Van den Berghe & De Ridder 1999; Liu and Taylor, 2008; Ghisseli and Deale, 2006) that like in many parts of the world, corporate governance in South Africa originated as organisations tried to solve the agency problem. Following, the transition to democracy in 1994 and the need to ensure that businesses are run with the best interest of all stakeholders and to attract international investors into South Africa, the King Commission was established in 1994 to develop a framework for corporate governance (IoD, 2002). There was a need for enhanced transparency, accountability, responsibility, social responsibility, independence, ethical executive culture, including ethics, honesty and corporate leadership among firms in South Africa (Pretorious, 2012). Following from this, the King Commission defined corporate governance thus "a system by which companies are directed and controlled."

They further recommended that a part of risks management function of businesses should include compliance (King, 2006). This was aimed at ensuring legal requirements on companies. The proposed framework by the king Commission is summarised in the figure below. The core of driving corporate governance in the firm is the board of directors.

Figure 3.1: Corporate Governance framework adapted from King (2006)



Source: adapted from King (2006)

The first King report on corporate governance in South Africa focused on issues relating to the board of directors and shareholders (IoDSA 1994). This report was directly in line with earlier proponents of corporate governance aimed at solving the agency problem. This report also failed to examine issues of sustainability among its many other failures. Due to changes in the regulatory environment in South Africa, with new regulations including the South African Labour Relations Act (No. 66 of 1995) and Employment Equity Act (No. 55 of 1998). There was the need for the modification of the king report to reflect the legislative reality in the country. Thus, the King, two reports came into play in 2002 according to (Mallin, 2007). Various authors (Naidoo, 2002; Mallin, 2007), suggest that that the recommendations and outlook of the King 2

report were innovative. The report dealt with such issues as the composition of the board, risk management, remuneration and sustainability (IoDSA 2009). Following the new company's Act Companies Act (No. 71 of 2008) publication, there was need to amend the King report (IoDSA 2009) to reflect these changes. Thus, the king three reports on corporate governance in South Africa. Even though the King 3 report calls companies to do integrated reporting and to comply or explain (Malan 2010), it does not require companies to commit to green. There is no requirement for businesses to commit to the triple bottom line that is related to green and yet the report calls for integrated reporting, including sustainability and nonfinancial reporting (PwC 2009). Current research calls for sustainability reporting to be viewed as a business imperative, and not just a compliance requirement. Within this context, we introduce the concept of corporate commitment to green as both a legal and business imperative.

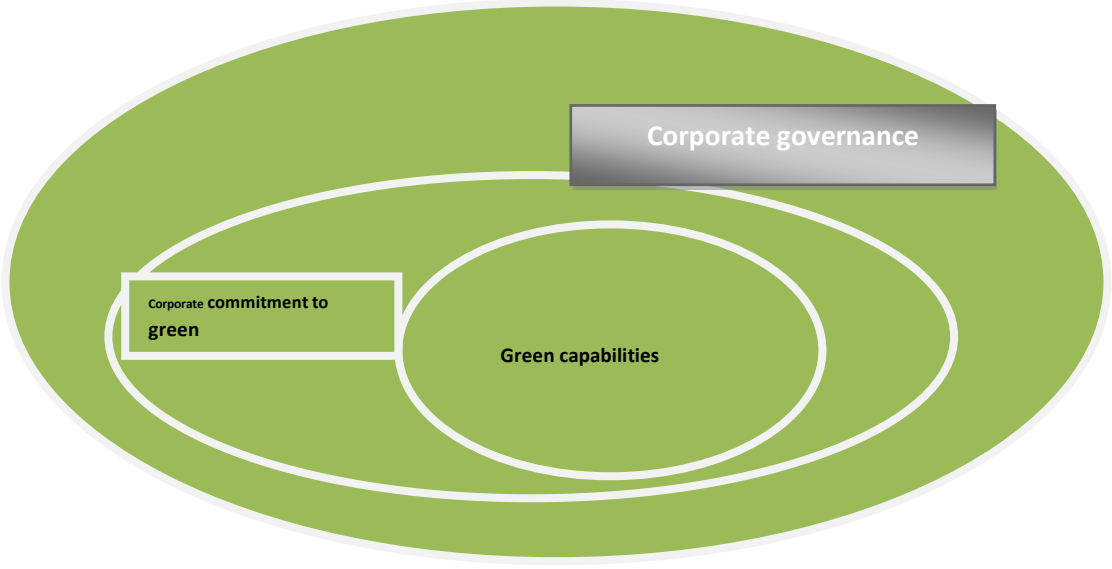
There are increasing calls for companies to commit to green from various directions including government, consumers, environmental activist, and other stakeholders. The calls for businesses to commit to green has been increased by the increasing impact of climate change, pollution and natural resource depletion that has raised concerns about the environment and green issues (Douglas, 2006). This has led the South African government along with many governments worldwide committing to green through various policies. For example; the Constitution of the Republic of South Africa, 1996. According to the constitution, both the state and the private sector must protect, respect and fulfill its environmental obligations. This is amplified in Section 24 of the Bill of Rights which spells out that everyone has the right to an environment that is "not harmful to their health and well- being", furthermore citizens have the right to "have the environment protected for the benefit of present and future generations through reasonable legislative and other measures" (The Constitution of the Republic of South Africa, 1996).

3.1.4 Corporate commitment to green business

According to (Zsolnai, 2002), a firm that adopts the concept of environmentalism across all its business functions is a green business. This definition was broadened by (Morebusiness.com, 2009) which defines a green business as that which uses less natural resources and use sustainable methods and materials such as recycling of paper, plastic, and electronics and sell sustainable products (recycled, plant-based or organically-grown). Following from this definition, this study defined a business that commits to green as a business that adopts policies,

business principles and practices of green. These includes, written down policies on green and practical green activities across its business value chain and thus offering green products and services and protecting the environment.

Figure 3.2 Relationship between Corporate Governance and firm commitment to green



Source: This Study (2017)

A business that commits to green replaces its natural resources use with alternatives which have positive outcomes for both the business and the environment (Dallas 2008). According to (Gunningham, Kagan & Thornton 2003), companies that commit to green must do so by having among other things green vision with strategic plans based on long-term objectives and not on short-term goals only. There must be a focus on greening the core business functions spelled out in the long term strategic business plan. Current research on green business in South Africa has focused on greening business services (Sperks and Smith, 2012). There has been little focus on relating green business functions to the corporate commitment to green, green marketing, and firm performance. This study contributed to existing literature by comparing corporate commitment to green with green marketing and company's performance in electronic manufacturers in South Africa.

Table 3.2: Summary of main Empirical studies on Corporate Governance and Green Business in South Africa.

Author	Objectives	Finding	Relation to Current Study
Awad and Hegazy (2016)	The paper seeks to answer the question of what are the implications of corporate governance commitment and corporate social responsibility on corporate failure.	The results showed a significant relation between accounting variables and CSR. However, the results showed conflicting outcomes for the relationship between CG and CSR.	Following the conflicting results obtained from the relationship between CG and CSR, it will be necessary to conduct further research on this relationship in specific industries. This study analysed the relation between CG commitment to green and CSI. While current literature has focused on CSR this study took the discussion further to develop and use the construct of GCSI.
Scholtz (2014)	Focus was to discuss corporate governance practices in South Africa and develop indicators against which to measure compliance in the study. Indicators included: the boards of directors, audit committee, the governance of risk and information technology and the internal audit division.	Findings showed variation in rates of adoption of individual recommendations. Two areas namely IT governance and internal auditing had low adoption rates.	The findings of this research was significant for the current study as it layed the framework used to interrogate the relationship between corporate governance commitment to green and firm performance in the electronics manufacturing sector in South Africa.

Author	Objectives	Finding	Relation to Current Study
Barac and Molio (2010)	Objective was to analyse corporate governance practice of top 40 JSE listed companies based on 2006 annual reports.	Findings showed most of the top 40 JSE listed companies adhered to the corporate governance principles except in cases where appointment of external auditors and dealing with whistle blowers was an issue.	The findings of this study were important for the current study as it layed the foundation for corporate governance practice in South Africa. However, the current study was specifically focused on corporate commitment to green and how this related to firm performance for electronic manufacturing firms in South Africa.
Oosthuizen & Lahner (2016)	The focus was to describe the characteristics and composition of boards and how they related to performance and sustainability of the firm. Specific characteristics examined included; ethnicity, race, gender, business background among others.	The findings suggested that diverse boards with non- executive directors with no business background were directly related to sustainability. However, the study was an exploratory study and there is need for more detailed study.	The findings for this stud are also relevant to the current research as it was important to see if board or top management composition relates to commitment to green and firm performance.
Mans-Kemp, Erasmus &Viviers (2016)	Examine corporate governance practices of 230 companies listed on the Johannesburg Stock Exchange over the period 2002 to 2010 by examining scores from annual reports.	Findings showed increase compliance towards 2010.	The findings for this study are significant for my research as this may mean many companies now commit to green given the increase commitment to corporate governance towards 2010 as shown in the study.

Author	Objectives	Finding	Relation to Current Study
Sukhdeo and Arnolds (2016)	Examine the role of conscious leadership in the achievement of sustainable business practices.	Results showed that Conscious leadership as an important part of corporate governance, and conscious corporate governance is directly related to employee wellness and firm sustainability.	The results of the study are related to the current study in that it related corporate governance to HR wellness. However, this study examinedcorporate commitment to green and showed how it related to green HR investment and firm performance and green CSI.
Rossouw (2005)	Examine the second king report of corporate governance from a philosophical perspective. Also examine how the recommendations of the king report live up to its philosophical premise.	The findings found some disconnect between the recommendations of the code and its philosophical premise.	The significance of this study to the current research is the fact that the various stakeholders of the firm are highlighted and the role of the firm towards them also shown and the importance of sustainability reporting. The current study used these foundational corporate governance standpoints to analysis of the findings of this study.
Van den Berg, Labuschagne, & Van den Berg (2013)	The study focused on how greening suppliers and innovation relates to competitive advantage and sustainable development.	Study found that green innovation process was positively related to environmental performance. All variables tested had a positive relation.	The study's findings are important for the current study as the emphasised the importance of green on company performance through competitive advantage.

Author	**Objectives**	**Finding**	**Relation to Current Study**
Mukonza and Mukonza (2015)	The focus was to examine the implementation of green initiatives in the Tswane municipality.	Findings showed green initiatives such as green buildings, green transport (a Re Yeng Bus Rapid Transit System) and green procurement have been implemented in the municipality.	Commitment to green is the basis of analysis in the paper. The current research examined such commitment to green in electronics manufacturing companies and examine how that related to firm performance.
Marx and van Dyk (2011)	The aim of the paper is first to provide a brief overview of the development of corporate citizenship, sustainability and sustainability reporting and the board's role in this regard; and, secondly, to provide evidence regarding the board's commitment to sustainability as disclosed in a company's sustainability reporting.	According to findings, despite the huge literature on sustainability, companies report a commitment to sustainability, but that these reports lack specific detail concerning the board's responsibility for and commitment to sustainability.	The findings of the paper regarding companies committing to sustainability /green are relevant to the current research. However, the current research went beyond commitment and examined how commitment resulted in building green marketing capability, green relationship learning and firm investment in green HR. The study further examined how these related to firm performance.
Grobler, Bezuidenhout and Hyra (2014),	The study focused on examining current studies on corporate governance, HR governance and HR governance frameworks and to recommend an HR governance framework that can be implemented by South African organisations.	Findings showed that HR governance framework that articulates the areas of focus based on strategic, operationaland functional accountabilities was recommended.	The study's findings are important for the current study as it highlights the need for strategic governance for any functional business area. In the case of the current research, the relation between strategic governance commitment and green marketing capabilities, green HR investments, and green relationship learning and how this relates to firm performance.

3.2 Green Corporate Social Investment (CSI)

Various authors define CSI as those business practices and commitment of firm's resources that improve society's well-being (Du et al., 2010; Kotler and Lee 2005). CSI can either be internal to the workplace benefiting employees and internal stakeholders or external to the place of work helping the community as a whole Kiessling, Isaksson, and Yasar (2016). Internal CSI may include such things as a day care center within a workplace for employees, recycling, and environmental improvement programmes, etc. External CSI can add support for a community center, local businesses, support of green causes, support for women's issues and other minorities, etc. Research in Corporate Social Investment (CSI) and Green Corporate Social Investment (GCSI) shows that there has been increased environmental legislation the world over in recent years. Most of these legislations have been focused on eco-design and energy efficiency regulations. Besides these regulations companies are increasingly trying to build not just CSI initiatives but green CSI initiatives (Lueckefett and Binder, 2015). This study reviewed past literature on CSI and GCSI. According to research corporate social investment has its roots in 19th Century. At the time, firms were seen to be organically linked to their societal environment (Heald, cited in Frederick, 1994). The concept of CSI has evolved since the 1910s after the role of directors of businesses was viewed to be narrowly focused on shareholder interest (Bing-xue, 2011). This author further stipulates that even in the 1930s companies were educated to be socially and environmentally aware and responsible. However, the due to the increase in size and power of US Corporation, the modern concept on CSI was born. In line with the above definition, the concept of CSR was examined in this study from the perspective of investment, and not a responsibility only. Thus, this study focused on CSI; we defined CSI, examined the literature on CSI and green CSI by companies. In 1953, CSR was defined as "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable regarding the objectives and values of our society."

Various authors agree that due to increased pressure from different stakeholders, Corporate Social Investment is becoming increasingly important to firms the world over (for example O¨ bersederet al. 2011; Saeidi and Sofian, 2014; Wang and Hus, 2011; Rashid Khalid and Rahman, 2015). Literature (Kiessling, Isaksson and Yasar, 2016) further shows that the realization of companies' objectives can no longer depend on traditional marketing approaches as the customer and broader stakeholder community have become more active participants in the market for

goods and services. Consumers among many stakeholders now also care about the CSI role of companies (Appiah-Adu and Singh 1998; KPMG 2011). Recent research by Kiessling et al., (2016), shows that academic findings on whether CSI is beneficial or a cost to organisations has mixed results. Their study further recommended that studies be carried out to show how firms can create mutual benefits for both themselves and stakeholders including consumers (Bondy et al. 2012; Harrison et al. 2010). According to research by (Nielsen and Thomsen 2010; Ziek 2009), CSI can provide such mutual benefit. Despite these findings, fewer studies exist to show how firm commitment to green can relates to improved green CSI and firm's performance through value adding to their customers (Lee, 2008). With technological developments like social media such as Facebook and Twitter, the pressure for businesses to be involved in green CSI has increased like never before (Kiessling et al., 2016). The pressure for businesses to go green has led to firms incorporating CSI as a key determinant of their long-term performance and success (Ramchander et al. 2012; Stainer, 2006). Green consumers have continued to increase pressure on firms not only to be involved in CSI but also to participate in green CSI. Despite this pressure, there is little literature on green CSI and firm's performance despite CSI being prioritized by over 70 percent of CEOs the world over (Porter and Kramer 2006, Carroll and Shabana, 2010). Current literature also suggests that there is the need for firms to move away from the just corporate social responsibility to a more business function corporate social investment (CSI) (Carroll and Shabana 2010; KPMG 2011; Luo and Bhattacharya 2009). Despite this suggestion, there is little research on how firms have committed to green or are involved in CSI and how this relates to a firm's performance. This study filled this gap in research by, first proposing and introducing the concept of green CSI. Further, the study related this to a firm's performance and showed how a firm's commitment to green can result in green CSI and firm performance through the mediating role of green marketing capability, green human capital investment and green relationship learning. We tested our theoretical model on the electronics manufacturing sector in South Africa.

Table 3.3: Summary of main Empirical studies on Green Corporate Social Investment

Author	Objectives	Finding	Relation to Current Study
Saeidi and Sofian (2014)	The authors proposed a model relating Corporate Social Responsibility (CSR) to firm performance based on reviewed literature.	They found the following: (1) most studies relating CSR to performance were in advanced economies. (2) a majority of findings showed positive relation between CSR and firm performance, however some studies showed negative relation and others were inconclusive-there is need for further research.	Based on the findings from this author, the current study first moves beyond the definition of CSR to CSI- proposing that firms should view their engagement in society as an investment and not merely a burden for responsibility. This research study in response to the call for more research in the area in developing economies, develop and test the conceptual model in the electronics manufacturing sector in South Africa.
Wang and Hus (2011)	Based on the CSI definition the study constructs a CSR index to measure relation between CSR and firm performance from a stakeholder approach.	Findings showed positive relation between CSR and firm performance. The study concluded that firms that are good corporate citizens can also do well financially and in non-financial areas of performance.	The findings are significant for the current studies as it would be interesting to see if the same outcome is obtained in the electronics manufacturing sector in South Africa. The conceptual model in this study proposed a positive relation between GCSI and firm performance.
Khalid and Rahman (2015)	The paper examines dimensions of ECSR and its potential impact on consumer loyalty to firm and firm performance.	The study found that environmental CSR is positively related to firm performance through consumer loyalty.	it would be interesting to find out how environmental GCSI relates to firm performance from the perspective of firm commitment to green and green marketing capability.

Author	**Objectives**	**Finding**	**Relation to Current Study**
Vilk et al., (2014)	The focus was to analyse gender and CSR in terms of so called 'big wins' for business and society.	According to findings, lately CSR paradigm had been taken into particular trend of debate on gender issues, most often examined in relation with corporate philanthropy.	The relation of this study to the current research was in the scope of analysing commitment to green from a gender perspective and to see how it relates to firm performance.
Arikan and Gunner (2013),	The objectives were to examine how CSR relates with traditional variables such as company identification and product quality to consumer loyalty.	Findings shown that improving customer psychological attachment to a company can serve as a strategic tool for enhancing the effect that CSR and service quality have on customer satisfaction and customer loyalty.	These findings are important for the current study, as the current research examined whether firm commitment to green can improve green CSI and firm performance.
Bohas and Poussing (2016),	Focus to examine how CSR relates to the adoption of green IT strategy.	Findings showed that CSR is a driver of green IT adoption.	Followings from the findings from this study, it would be interesting to find out whether firms commitment to green influences green CSI and firm performance for electronic manufacturers in South Africa.

3.3. Green Marketing Capability

3.3.1 Green Marketing

One of the definitions of green marketing used in this study was adopted from (Kotler and Armstrong, 2009). According to (Kotler and Armstrong, 2009), green marketing is "marketing that meets the present needs of consumers and businesses and preserves or enhances the ability of future generations to respond to their needs." This definition follows from the agreement among most marketing scholars that green marketing gets its roots from an understanding that marketing has an impact on the environment and society as a whole. Building on this definition Lu et al., (2013) asserted that green marketing is not a static field but has grown to be known as that corporate philosophy enabling the development and communication of a firm's environmental orientation and thus resulting in better brand image and performance of the firm.

Various authors have explored studied green marketing with focus on different issues such as: manager awareness and green marketing implementation of green concepts in the company's marketing mix (Osman, Othman, Salahudin and Abdullahl, 2016), green marketing's role in building corporate image (Ko, Kwang and Kim, 2012), green marketing strategy and firm performance (Hasan and Ali, 2014), the strategic management of green marketing (De-Shan and Shi-Hua, 2008), enterprise green marketing competence (Jian-Zhong, Jun and Dan, 2010), marketing characteristics and strategies of organic wines (Castellini, Mauracher, Procidano, and Sacchi, 2014). Despite the fact that current literature has focused on green marketing, there has been little focus on relating this to a corporate commitment to green. Other research in the area of green marketing has gone a step further to specifically look at green marketing capability. Such studies have been focused on issues such as: the state of green marketing research over a twenty five year period (Kumar, 2016), differences between proactive and reactive green decisions as the sources of green innovation capabilities (Cheng, Chang and Wu, 2012), green product innovation as a result of market demand and how it impact firm performance (Lin, Tan, and Geng 2013), how external marketing success depends on internal marketing capabilities (Greene, Walls and Schrest, (1994), corporate strategy and green product innovation (D'Souza, Taghian and Peretiatkos, (2006), examining human and technical capability in relation to green product development and performance (Jabbour, Jugend, Sousa, Gunasekaran, and Latan (2015), the dilemma of green as it relates to planning and marketing intelligence (Kassaye, (2001), green

marketing of cosmetics (Johri and Sahasakmontri, (1998), how green marketing orientation can be conceptualised and validated (Ramesh and Raina, 2014), the use of theory to analyse green marketing activities(Lui, Bai and Hu, 2015), using a stakeholder perspective to examine green marketing strategy (Rivera-Camino, 2007), use of the innovation theory of competitive advantage to explore business to business green marketing (Vaccaro, 2009), examining how sustainable development can be realised in the automobile industry through the use of green innovations (Kushwaha and Sharma, 2016), the foundations of capability theory Claassen & Düwell (2013), the use of the resource based theory of the firm to examine green marketing in business to business organisations (Martínez and Matute, (2013). These current studies on green marketing capability reveal that the resource based theory of the firm has been used in previous research to analyse green marketing capability and firm performance. However, lacking in previous literature is how green marketing relates to other firm capabilities such as human resources, green relationship learning and how these relate to green corporate social investment and firm performance. This study attempted to fill this gap in literature by examining the relationship between corporate commitment to green, green marketing capability, green relationship learning, green human resource investment and how this related firm performance and green corporate social investment.

Findings from current literature on green marketing have revealed the following: a review of 161 articles on green marketing showed that currently, green marketing could be classified across four main themes: including green-orientation, green marketing strategy, green marketing functions and green marketing consequences (Prashant Kumar, 2016). Kumar, (2016) attempted to identify and group current literature on green marketing, highlighted both the advances and gaps in green marketing research. Though various themes such as eco-orientation has been covered in current green marketing research by various authors (Cheng, Chang and Wu, 2012; Kushwaha and Sharma, 2016; Lui, Bai, and Hu, 2015), lacking in the subtheme of green eco-orientation, is an analysis of how corporate commitment to green explains why firms chose to be eco-oriented and building green marketing capability. Further, literature on the sub-theme of green eco-orientation is silent on the interaction between green marketing capability, green human resource investment and green relationship learning and how these relate to firm performance and green corporate social investment. This study contributes to existing literature on green marketing by examining how corporate commitment to green, impacts on a firm's

performance and green corporate social investment with green marketing capability, green relationship learning and green human capital investment as mediating factors.

The second area of focus of green marketing in the past 20 years as revealed by Kumar, (2016), is a green marketing strategy. Findings from research under this sub-theme show that for companies to be green, there is need to focus on internal marketing capabilities are they were found to have a more positive relationship to green innovation than external factors such as regulations and consumer advocacy (Cheng, Chang and Wu, 2012). However, lacking from current literature in this area of green marketing is how in this internal green marketing capability can be enhanced by green human capital investment and green relationship learning. More so, current literature looking at green marketing strategy also fails to examine how corporate commitment to green can impact internal green marketing capabilities and firm performance. Furthermore, though research has highlighted the fact that green marketing has moved from response to consumer pressure or legislative push to becoming a tool for competition (Mostafa, 2009). However, literature is silent on how marketing capability relates to other areas of business such as human resources or relationships learning to build these core marketing capabilities that can offer firms this competitive advantage. This study filled such gap in current literature by bringing in these variables: a firm commitment to green, green marketing capabilities, green relationship learning, green human capital investment and how these relate to a firm's performance and green corporate social investment.

The third area of research on green marketing as identified by current research is green marketing function or the marketing mix (Kumah, 2016). This can be broad, examined to include studies in green products development, green, pricing, distribution and green marketing promotion. Substantive research has been carried out in the area of green marketing functions including research on green product innovation (Jabbour et al., 2015, Lin et al., 2013), green advertising and promotion, green branding (Kwang et al, 2012), sustainability (Kushwaha and Sharma, 2016) and green international marketing (Martínez Jorge Matute, (2013). Despite the availability of research in the area of the green marketing function, current literature still has a gap of not relating marketing function to other functional areas of the business such as HR when examining green marketing function. Yet current research highlights human resources as the main driving force of green initiatives in any organisation. This study responded to this void in

current literature, by focusing on green marketing capabilities, green human capital investment and relationship learning and how these relate to firm performance.

The fourth area of research on green marketing is focused on green marketing consequences or green marketing outcomes. This can be further broken down into effects of green marketing activities (Bowers, 20110; Lin et al., 2013; Papista and Krystallis, 2013) and consequences of green marketing strategies (Rolland and Bazzoni,2009; LeCren and Ozanne, 2011; Richey et al., 2014). These effects include economic, marketing, environmental, operational, and social outcomes (Kumah, 2016). While authors have researched in these various areas of results of green marketing, most research on the results of green marketing has been done on specific outcome variables independently. Studies that have included more than one outcome have done so using mostly green marketing specific input variables. There is a void in current literature in the area of integrating other fields such as HR and corporate governance commitment in the study of green marketing. This is despite the fact that these variables have been shown to impact on marketing capability. More so, studies on green marketing outcome variables have mostly been carried out in advanced countries and not in developing economies like South Africa. Therefore, this study contributed to current research by using the input variable of corporate governance commitment and mediating variables of green marketing capability, green relationship learning, and green human resources engagement in the study of green marketing outcome variables of firm performance: economic and marketing and also a green corporate social responsibility.

3.3.2 Green Marketing Capabilities

Marketing capability is the firm's ability to "integrate, reconfigure, gain and release" resources (Eisenhardt & Martin, 2000). Vorhies, Morgan, and Autry (2009) took the definition further by asserting that marketing capabilities are "business strategy facilitators" that enable a company to implement its strategy and superior archive performance in the market. Given the importance of marketing capabilities to businesses in South Africa today, this thesis partly focused on such capacities. It went beyond marketing capabilities and examined green marketing capabilities. The literature on marketing capabilities and green marketing capabilities was reviewed. The research then studied how green marketing capabilities related to firm performance, how it related to green human capital investments, and green relationships learning. Despite the

importance of marketing capability and their relationship to performance and shareholder value, such relationship has only been recently tested in marketing research (McAlister, Srinivasan and Kim, 2007). Newbert (2007) analyzed 55 research papers all dealing with capabilities and the resource based theory of the firm. His studies concluded that none of the previous studies examined the relationship between capabilities and financial market performance. To fill this vacuum in the theoretical and empirical analysis in marketing, Sun (2010) focused on the relationship between marketing capabilities and financial market performance and shareholder value. However, his study did not explore the link between marketing capabilities, green human capital investments, and green relationships learning and how they related to performance. This study filled that gap. Filling this gap was important because marketing capabilities today are intertwined and could complement each other or supplement as they relate to firm performance. McAlister (2007) noted that there is a growing expectation that companies need to be more focused on stakeholder value. Therefore, identifying and developing capabilities that influence stakeholder value will enhance the success of businesses in South Africa.

This thesis developed and tested a conceptual model relating firm commitment to green, green marketing capability, green human capital investments, and green relationships learning to firm performance. Extant marketing research has shown that there is a positive relationship between marketing capability and firm performance (Vorhies and Morgan, 2005). Therefore, managers need to concentrate their efforts to build those capabilities that influence performance, as they are closely watched by current and potential investors and all other stakeholders. Despite such evidence, within the South African economy, literature linking marketing capabilities with firm performance is surprisingly scant.

This study filled that gap by developing a model that linked Marketing Capabilities, green human capital investments, and green relationships learning to firm performance. The motivation to relate marketing and green human capital investments and green relationships learning to firm performance was inspired by the works of Luo and Bhattacharya, (2009), who found out that a company's resources interact with each other and affect performance. Thus, this research takes the further step of linking marketing and green human capital investments, and green relationships learning to firm performance. The performance drivers analyzed here are marketing capabilities, green human capital investments, and green relationships learning.

This study attempted to analyse whether marketing capabilities enhance green human capital investments, and green relationships learning, and vice versa and how this relates to performance. The importance of this relationship confirmed the broad role of marketing in companies in line with various studies in marketing (Sun, 2010). This study strengthened the knowledge of company's marketing and green human capital investments, and green relationship learning and how they relate to performance in South Africa. It provided theoretical and practical implications. The table below presents a summary of min empirical studies on green marketing capabilities.

Table 3.4: Summary of main Empirical studies on Green Marketing Capabilities

Author	Objectives	Finding	Relation to Current Study
Matute, (2013)	Analyse the impact on firm performance as a result of green marketing strategy for business to business firms. How firm resources contribute to environmental management.	Findings showed that both management and internal environmental performance influence firm performance.	The study was conducted using structural equation modeling that was was also used in this study. The outcomes and limitations of the study are important for this research as one of the limitations points to the lack of focus on firm capabilities which was covered in this study.
Yu-Shan Chen (2008)	In examining the positive effect of green innovation and green image on firm performance, the study proposed the used of the construct green core competences.	Findings showed a positive relation between green core competences and innovation and performance.	The findings from this study is important for this study as they highlight green core competences, in this thesis, green marketing capabilities, green human resources investments and green relationship learning was used as green core competences and mediators in the relationship between corporate commitment to green and firm performance.
Amores-Salvad et al., (2014)	The study examined the moderating role of green corporate image in the relationship between environmental product innovations and firm performance in 157 Spanish metal firms.	The findings showed that the green image of the firm needs to be efficiently managed to promote firm performance.	Following from the importance of the green image of the firm analysed in this study, the current research looked at green marketing capability and resources that mediate the relationship between firm commitment to green and performance and also how these relates to green CSI.

Author	Objectives	Finding	Relation to Current Study
Kushwaha and Sharma (2016)	The focus was to examine how green initiatives could be build by firms in auto mobile industries given increasing environmental pressure. It further examined how such green initiatives related to performance.	Findings showed a positive relation between green initiatives such as green marketing, green supply chain management and firm performance. There was also a positive relation between green initiatives and sustainability development goals such as green CSI.	The findings here are important for the current study as they highlight one of the main mediating variables in the current research, green marketing capability. The study also touches on two outcome variables green CSI and also firm performance. However, the study fails to look at other important variables such as firm commitment to green, green relationship learning and also green HR that might impact the outcome variables. Such variables were examined in the current study. The study was an exploratory study and thus lays the foundation for the current study which proposed and tested hypotheses based on some of the variables proposed in the study.
Vaccaro, (2009)	Purpose was to study the application of the innovation theory to green marketing to realize the triple bottom line of economic, financial and social or environmental.	Five propositions were developed to reflect the relationship between green marketing innovation and firm triple bottom line. The study did a conceptual analysis which found seven areas of B2B proactive green marketing strategies related to the diffusion of innovation characteristics.	This was a conceptual study relevant to the current study as some of the conceptual relations highlighted here such as marketing capability, firm performance were tested in the current study in the electronics manufacturing sector in South Africa.

Author	Objectives	Finding	Relation to Current Study
Digalwar et al. (2013)	Focus was to examine the performance measures for the green manufacturing practices in the Indian manufacturing industries.	The findings identified the following performance measures: top management commitment, knowledge management, employee training, green product and process design, employee empowerment, environmental health and safety, suppliers and materials management, production planning and control, quality, cost, customer environment performance requirement, customer responsiveness and company growth.	Following from the findings of this study, a majority of the performance measures identified were tested in the current study in the electronics manufacturing sector in South Africa. It would be interesting to find out how firm commitment to green, green marketing capability, green relationship learning and green human resource investment all identified as measure of green performance relate to firm performance and green CSI.
Rivera-Camino, (2007)	The aim was to study how green marketing strategy is influenced by stakeholders.	Findings showed that stakeholders impact on firm marketing strategy and this impact is moderated by firm economic sector and industry characteristics.	The findings here forcused on stakeholders and have an implication for the currnet study that examined green relationship learning and how it impacts green marketing capability, and firm performance and green CSI. The findings that the stakeholder impact differs by sector and firm characteristics are also important for the current study that focused on the electronics manufacturing sector in South Africa and firm characteristics within the industry were tested in the current study.

Author	Objectives	Finding	Relation to Current Study
Xu et al. (2015)	The focus of the study was to introduce a grey multiple criteria decision-making methodology to investigate the relationships between green marketing activities and performance outcomes (environmental and business performance).	Findings showed that there is need for synergy in green marketing activities for there to be a significant impact on performance. No single green marketing activity should be independently carried out for performance purpose. The study also proposed further studies.	This research recommended further studies in the area of green marketing. The current study proposed and tested a model that involved green marketing capabilities, green human resource investment, green relationship learning as mediators in the relationship between firm commitment to green and firm performance and green CSI.
Chahal et al. (2014)	What are the domains of green marketing construct in SMMEs in India, secondly, how do these domains of green marketing construct impact performance of the firm.	The following domains were identified: greening the process, green supply chain management, green strategic policy initiative, proactive energy conservation and green innovation of green marketing. Secondly, there was a positive relationship between these domains ad firm performance. There was a also a stronger impact of the green marketing domain on employee retention and customer satisfaction.	This study highlights the domain of green marketing policy, in the current study this was extended to include commitment to green from board. Green marketing as identified here was extended in the current study to include green marketing capabilities and other functional areas like green human resource investment and green relationship learning was included in the current study and how they relate to firm performance was examined.

Author	Objectives	Finding	Relation to Current Study
Kassaye (2001)	Examine the green packaging actions, attitudes and plans of firms in the USA.	The findings showed that firms green actions are based on both consumer demands and their economic interest.	These findings are significant for the current study as green marketing initiatives in electronics manufacturers in South Africa were tested against firm performance or economic interest.
Jabbour et al. (2015)	The study aimed to present and test a conceptual framework that describes the technical aspects (TA), human/organisational aspects (HOA) of the adoption of green product development (GPD) practices and the effect of these practices on firms' environmental (EP), operational (OP) and market performance (MP).	The following findings were realised (1) there was an adequate goodness of fit statistics obtained from the proposed framework. (2) the adoption of green product development was influenced by technological factor. (3) one of the study's hypotheses is not validated, indicating that the relationship of human/organisational aspects to GPD must be further analysed.	The study proposed need for further studies to examine the human and organisational aspects of the proposed hypothesis. These were examined in the current study through the examining of organisational commitment to green, and the human factor of green human resource investment and green relationship learning and how these relates to performance.

Author	**Objectives**	**Finding**	**Relation to Current Study**
D'Souza et al. (2008)	How multiple factors influence purchase intensions for consumers in Australia.	Findings showed that consumers past experiences positively influenced their purchase intension of green products. Secondly, customers' corporate perception with respect to companies placing higher priority on profitability than on reducing pollution and regulatory protection were the significant predictors of customers' negative overall perception toward green products.	The findings of this study relate to the current study as green capability is aimed at meeting consumer needs through the green products and services designed. Understanding consumer perceptions help to shape products to meet the needs of consumers.
Kumar (2015)	The focus was to explore how small firms in India develop green identity through the development of green marketing innovation.	The study identified six categories of green marketing innovation: marketing compliance, marketing strategic partnership, marketing environmental commitment, marketing green team, marketing benchmarking and marketing (environmental) ethical behaviour.	The study identified variables such as marketing strategic partnerships- in the current study relationship learning of such partnerships and stakeholders was analysed in relation to firm performance and green marketing capability. The study also identifies marketing environmental commitment; in the current study firm commitment to green was used as a predictive variable of firm performance and green CSI.

Author	**Objectives**	**Finding**	**Relation to Current Study**
Kumar, (2016)	The focus was to review and analysed literature on the state of green marketing research over a 25-year period from 1990 to 2014.	The following four categorizations of green marketing research were made: eco-orientation, green marketing strategy, green marketing functions and green marketing consequences. The contributions and implications for green marketing of the works under each sub-category were identified and highlighted.	This categorization is important to the current study as it assisted the researcher to position the study under the identified categorisations.
Lin et al. (2013)	The impact of consumer demands on green product innovation and firm performance.	The study found a positive correlation between market demand and both green innovation and firm performance.	While this study focusses on the consumer demand and how they relate to firm performance, the current study focused on the firm perspective to see how firm commitment to green impact firm performance.
Chen et al. (2012)	Understanding sources of green innovation: proactive and reactive.	The results show that both internal origins – environmental leadership, environmental culture, and environmental capability and the external origins – the environmental regulations and the environmentalism of investors and clients – can generate reactive green innovation. According to findings, the internal origins alone can facilitate proactive green innovation.	The current study is mostly focused on internal origins of green innovation and green marketing capability development as it focused on firm commitment to green and how this relates to firm performance.

Author	Objectives	Finding	Relation to Current Study
Huang et al. (2016)	How do external pressure from both consumers and regulators pressure firms to implement green innovations?	Findings showed a positive relation between both customer pressure and regulatory pressure on green innovation of firms.	This study is related to the current study as it sets the stage for further analysis carried out in the current study to understand how firm commitment to green relates to firm financial and marketing performance.

3.4.1 Green Human Capital Investment

Human capital remains the cornerstone of businesses to realise their objectives. With constant legislative and social changes in the business environment, there is a need for companies to continue to invest in their human capital in ways that enable these businesses to realise their objectives. Companies that commit to green need the right human capital investment for their green marketing initiatives to be realised. This study reviewed the literature on green human capital investments (GHCI) and related it to marketing capabilities and firm performance. The analysis of green human capital was grounded in the human capital theory of the 1960s (Sweetland, 1999) when the theoretical and empirical foundations of the human resources field were articulated and established. This was then applied to the electronics manufacturing sector in South Africa in our model.

Human Resources (HR) remain a key to corporate success. They are involved in the transformation of organisational goals through the use of technical and administrative skills to realise products and services for consumers. With an increased business case for green and the shift in various organisations to go green (Ambec & Lanoie, 2008), there is a need for the HR functions to be aligned to the green vision and policies of the organisation. Research shows that despite the fact that many firms have developed policies in green HR, there is need to transform these into practice (Jackson & Seo, 2010). Various authors have carried research on green HR with a focus on different aspects. For example, aligning Human Resource Management (HRM) policies, systems, and practices with environmental management (Jabbour, 2013a). However, green HRM has focused on managing human resources from a green perspective- that is ensuring that the company's HR policies and practices are aligned to green. However, (Haddock-Millar., Sanyal & Müller-Camen, 2015) proposed that this requires that HR function is aligned to the strategic view of the firm. For companies to realise their environmental goals, various functions need to be green. (Marcus & Fremeth, 2009), showed that the extent to which the performance management system of an organisation has green HR integrated to it shows a firm's commitment to green. Further literature by (Harvey, Williams, & Robert, 2013), shows that employees are more inclined to green practices where there is policy commitment to green. This led (Haddock-Millar et al., 2015) to conclude that the achievement of high environmental outcomes by firms is directly related to the greening of their HRM. The importance of the commitment of employees

to green and green output has been broadly studied by authors including (Aragon-Correa, Martin-Tapia, & Hurtado-Torres, 2013; Renwick, Redman, &Maguire, 2013). The importance of green HRM has also been studied with a focus on for example strategic, cultural, and operations dimensions and how this relates to green outcomes (Haddock-Millar et al., 2015). Various authors have carried out studies in different countries (Chen & Chang, 2013; Hofer, Cantor, & Dai, 2012; Jabbour, Santos, & Nagano, 2010, 2012; Jabbour, 2013b; Paille´, Chen, Boiral, & Jin, 2014; Tatoglu, Bayraktar, Sahadev, Demirbag, &Glaister, 2014; Teixeira, Jabbour, & Jabbour, 2012) and the global setting (Haddock-Millar et al., 2015). However, missing in this literature is literature on green HR investment and how this relates to firm performance. Furthermore, the research on the subject of green HR shows that most studies have been qualitative, and focused on HR practice and employee engagement practices (Haddock-Millar et al., 2015). How such engagement, relates to green HR investment by the firm is silent in literature.

Thirdly, studies in green HR in manufacturing have been mostly concentrated in advanced economies (Jabbour et al., 2012, 2015; Teixeira et al., 2012). There is a need for such studies to be carried out in developing economies such as South Africa as the settings and policies regulating the sector differ. This study is focused on the electronics manufacturing industry in South Africa to fill the identified gap in the literature.

Current research in Green HR is interdisciplinary drawing from various fields: strategic management, organisational performance, performance management, organisational culture, employee management, staff development (Haddock-Millar et al., 2015). However, how this relates to marketing capabilities and firm performance is missing from the current literature. Our literature on Green HR Investment focused on the main themes that have been studied in the field of green HR with a focus to contextualise the research gap. Issues considered in green HR included the following: the positioning and alignment of green HR, HR function, and HR management.

3.4.2 Green HR Function

Current literature shows that for businesses to reach their sustainability goals, the HR function is critical (Cohen, Taylor, & Muller-Camen, 2012). However, (Haddock-Millar et al., 2015) argue that if HR managers do not view themselves as strategic drivers of the firm's green goals and

policies- the implementation of such policies may be lacking. They, therefore, suggested that the strategic positioning of the greening of the HR function is critical to realise the sustainability goals of the firms. This can be realised through three main approaches: value based on principles and passion for the company's leadership and employees; strategic route involving corporate rebranding/ change of business model and a defensive course aimed at introducing policies and practices to meet legal requirements (Cohen et al., 2012). According to (Brio et al., 2007), there is need to generate capacities that focus on integrating the organisation functions with green. However, this literature is silent on how this integration relates to green HR investment. The research also suggests that such strategic alignment gives firms a competitive advantage. Research also shows differences between green HR talk and Green HR action (Prasad &Elmes, 2005). Recent studies on green HRM demonstrate how green HR talk relates to action (Jabbour, 2011). However, this literature did not go far enough to show how this relates to firm performance and Green CSI.

Current research shows a gap between a firm commitment to green and various HR functions including job evaluation, selection, performance management, training, and reward appeared. Literature also classifies current approaches to green HR to be reactive, proactive or preventative depending on the level of greenness of the firm. The literature further relates success in green initiatives to green HR (Paille´ et al., 2014). The study that related green HR to firm performance focused on such factors as firm size, certification and stakeholder interest and pressure (Jabbour et al., 2015). Literature relating investment in green HR and firm performance is lacking despite the fact that current research shows that a firm's investment in different strategic areas results in performance. This study filled this gap in the literature by relating Green HR investment to a firm's performance and green CSI. Current research has further shown the importance of employee involvement in green initiatives in the firm (Renwick et al., 2013), This can be through three main ways: pulling employees' technical knowledge, getting employees engaged and involved in making suggestions on greening the firm, and through the development of the workplace culture that promotes green. Current empirical studies also identify training and green leadership as keys to successful green HR, yet how firms invest in green HR to ensure efficient and effective green employee involvement is not explained by current literature. This study filled that gap in current literature by examining firm investment in green HR as it relates to marketing capability, green CSI and firm performance for electronics manufacturing firms in South Africa.

Table 3.5: Summary of studies on green human resource investments and firm performance

Author	Objectives	Finding	Relation to Current Study
Wu et al. (2008)	Examine what core resources enable Environmental Management Systems (EMS) to give firms a competitive advantage from a resource based view of the firm. It further examined firm's core resources from a contingency point of view.	Top management's strategic perception, cross-functional cooperation, and environmentally responsible supplier's help firm's operational performance.	Model tested using Structural equation modeling as in current study, the role of management and stakeholders highlighted and current study looks at corporate commitment to green and also relation with stakeholders through relationship learning. Study also used resource based theory which is one of the theories used in current study. Study linked capabilities to operational performance, however our current study links capability to financial and marketing performance.
Jackson et al (2011)	Focus on stimulating the field of HRM to expand its role in the pursuit of environmentally sustainable business. Discuss advances in HR issues including: performance management; training, development, and learning; compensation and rewards; and organisational culture.	There are opportunities for research on the role of HR in green business.	This study highlights opportunities in HR for green business research. The current research filled one of such gaps by examining the role of green HR investment on green marketing capability and firm performance.

Author	Objectives	Finding	Relation to Current Study
Stock et al. (2014)	Study the relationship between capital and human resource investment on performance.	Study showed positive relation between human resource investment and outcomes in hospitals.	This study shows the importance of HR investment on performance. The current research expanded this by examining the relation between green HR investment and firm performance.
Chen, (2008)	explore the positive relationship between green intellectual capital and competitive advantages of firms.	Findings show three types of green intellectual capital - green human capital, green structural capital, and green relational capital - had positive effects on competitive advantages of firms.	Results show that investment in green intellectual capital gave the company both good reputation with authorities and also competitive advantage. This study did not relate green HR investment to marketing capability and firm performance- which is covered in the current study.
Jabbour and Jabbour (2016)	Focused on integrating supply chain management with human resource management based on current lack of integration in literature.	Study showed need and implications of integrating these fields for scholars, managers, and practitioners in the areas of organisational sustainability and truly sustainable supply chains.	Following from this finding the current study aimed to integrate, corporate governance, green marketing, green human resource investment and green relationship learning and see how these relates to firm performance and green corporate social investment.

Author	Objectives	Finding	Relation to Current Study
Jinxia and Bao, (2015)	Focus relating both high performance human resources and enterprise human resources systems to performance.	Findings showed positive relation between high performance human resources and firm performance mediated by innovation.	Structural equation was used in this study and was also adopted and used in the current study. The study also links HR to performance as in the current study however the current study included investment in HR and linked it to marketing capability and firm performance and green corporate social investment. Human resources are used here as a predictor variable but was a mediating variable in the current study study.
Rasool and Shah (2015)	Focus on analyzing 33 high performance work systems/ firm performance studies from 1994 to 2013 based on a Proquest and Google Scholar Database.	Developed a new model to measure an HPWS called the Total Strategic ResourceApproach. Model used three theories: universalistic, contingent and resource based view. Balancedscorecard approach to firm performance measurement was recommended, structural equation modelling was recommended for similar studies.	Our study also used structural equationmodelling and various theirs including both resource based view and contingency theory suggested here. However, unlike just looking at HR we looked at green HR investment and integrate it to other variables including marketing capabilities and green relationship learning and showed how this relate to firm performance and green CSI.
Wang, Shieh, And Wang (2008)	The relationship between HR investment and firm performance and firm culture and HR investment was investigated.	Study showed positive relation between HR investment and firm performance.	Following from this the current study examined green HR investment and firm performance.

Author	Objectives	Finding	Relation to Current Study
Delery and Doty (1996)	Argues that strategic human resources literature draws on three dominant modes of theorizing: universalistic, contingency, and configurational perspectives.	Found that theoretical arguments can be structured based on each of the perspectives.	The contingency approach used to develop theoretical argument here was also used to frame part of the theoretical argument in the current study.
Chen and Chang (2011)	The focus was to use green HR as a mediating factor in the relation between green relationship learning and firm innovation.	Study carried out in the Taiwanese manufacturing sector showed positive relationship between HR as a mediating factor on green innovation.	In this study HR was studied as a mediating factor while green relationship learning a predictor. In the current study green relationship learning and human resource investment were mediators in the relationship between corporate commitment to green and firm performance.

3.5 Green Relationship Learning

The subject of relationship learning has been of interest in marketing and management research for decades. Various authors have developed and defined the concept of relationship. Relationship according to Lin and Chang (2008) is the connections and networks that exist between businesses, firms and consumers, companies and suppliers or with any other stakeholder. In South Africa, various relationships exist within the electronics manufacturing sector, between manufacturers and other manufacturers through industry associations and other informal ties, relationships between manufacturers and suppliers, relationships between producers and consumers, relationships between manufacturers and government and legislators, relationships between producers and other stakeholders. Over the years academics and practitioners have been interested in the value of these relationships. There is agreement among various scholars that relationships are a source of learning for firms and enabling companies to get a competitive advantage. According to Lin and Chang (2008), quality and reliability of services and products offered by businesses can be improved through targeted relationship learning. Electronic manufacturing businesses in South Africa can exchange information and knowledge with suppliers, consumers, government, communities and other stakeholders and learn more from these interested parties and improve the services and products offered in the sector. For example, relationships are considered a source and target of firm learning (Lukas et al. 1996). Following from this conceptualisation, various authors have examined the relationships between firms and different stakeholders, supplier, consumers, government, communities as sources of learning for the organisation. For example, Selnes and Sallis (2003), developed a theory to show how firms can develop competitive advantage from effective and efficient relationship learning with supplier and consumers. Literature indicates that information exchange, developing shared learning focus, and behaviour of firms and stakeholders can be improved through Relationship Learning. Given that knowledge cannot be legislated within the customer-supplier relationship, there is a need for organisations to develop a learning and collaborative culture with various stakeholders. This leads to the development of relationship trust and competitive advantage for the firm. According to (Choe, 2004) the most valuable resource for an organisation is knowledge, and such knowledge lies within and outside an organisation. Today, firm's stakeholders such as consumers, suppliers, government, communities carry lots of knowledge that can enable the firm's ability to deliver its products or services more efficiently and effectively to meet the needs of consumers (Singh et al., 2008). Various authors thus agree

that success of organisations today is positively and directly related to organisations competitive advantage and performance (Ho, 2008, Singh et al., 2008; Choe, 2004). Despite the importance of relationship learning to firm's performance as highlighted in the literature, there is little focus in current research on relationship learning in South Africa. Most of the literature in relationship learning has been in advanced economies. There is currently, lack of academic research on the subject of green relationship learning despite the increased focus on various sectors of the economy to go green both as a result of government and consumer pressure. Understanding green relationship learning and how to derive value from it would add competitive advantage to firms and improve firm performance. This research asked such questions as: (1) are electronics manufacturing companies in South Africa involved in green relationship learning? (2) If yes, how are electronics manufacturing firms in South Africa involved in green relationship learning; (3) how does green relationship learning relate to firm performance?

In this study, the research introduced the construct of green relationship learning (GRL) to the theoretical and empirical model. In this study Green Relationship Learning (GRL) was defined in line with (Chen and Chang, 2011) who described GRL as learning activities about environmental management that are facilitated by business relations, information exchange, developing shared learning focus and updating corporate action accordingly from suppliers, customers, partners, and stakeholders. The thesis postulated that electronic manufacturing firms in South Africa have relationships with the different suppliers, consumers, partners, and other stakeholders. These firms can learn about environmental from these the various stakeholders. They can learn the type of green needs of consumers, the kinds of green materials from suppliers, the current green legislations from governments, and how to enhance green within the industry from different partners. There is extant literature on how learning capability within a firm enhances relationship learning (Parker & Hine, 2014). Current research also highlights the importance of relationship learning and firm innovation (Sheng and Chien; 2016).

Despite the relevance and benefits of relationship learning to organisations, relationship learning is costly and time consuming for today's organisations (Cheung, Kong, and Kong; 2010). Therefore, firms need to understand how to optimally gain value from relationship learning (Wong, Cheung, and Fan; 2009). The question of how to gain both marketing and financial benefits from relationship learning remains an academic puzzle. With increasing calls for the firm to go green with the electronics manufacturing sector, the question of

optimising green relationship learning is yet to be fully understood by both academics and industry.

Therefore, in this study, the researcher, proposed the construct of green relationship learning and how it relates green marketing capability and firm performance. In the context of this study, the research examined how relationship learning relates to green marketing capability and firm performance. The more knowledge a firm gets from suppliers, and consumers about different green needs of consumers and available resources, the more a firm implements green marketing capability through the development new green products, green business process and green marketing communication and sales. However, current literature is silent on how green relationship learning can be enhanced within a firm. In this study, the research proposed that green relationship learning enhances green marketing capability and firm performance. This was in line with the suggestions by the learning capability theory that suggest that firm's internal learning capability enhances its learning ability and firm performance.We postulate that electronics manufacturing companies with management that commits to green, well skilled and trained employees, and green operating systems, and green marketing capability that enables relations with suppliers, consumers, and other stakeholders, have high green relationship learning ability and if fully maximised will enhance the organisations green marketing capability and firm performance.This is supported by (Luo and Bhattacharya, 2009), who found out that a company's resources interact with each other and affect performance. Recent studies by (Akgün and Kirçovali; 2015) suggests that there is a positive relationship between firm's relationship and its wisdom and performance. Therefore, this thesis postulated that there is a positive link between green relationship learning and firm performance- with green relationship learning being an important performance driver.

Table 3.6: Summary of main Empirical studies on Green Relationship learning

Author	Objectives	Finding	Relation to Current Study
Parker & Hine, (2014)	The focus was on the role of knowledge intermediaries on firm learning and innovation capability.	The findings showed that both internal and external intermediaries impact on learning capability of a firm	Given the positive relationship between knowledge intermediaries and firm learning from this study. The current study looked at how green relationship learning from such knowledge intermediaries as suppliers, consumers, industry players among others will impact on firm ability to build green marketing capability and firm performance
Li and Roslow, (1999)	The relationship between market driven learning and new product market success the case of export market	The findings showed positive relation between customer learning, competitor learning, expert learning and new product success	Deducing from the findings of these study, the currrent study looked specifically at how green relationship learning relates to firm performance in electronics manufacturers in South Africa.
Carter, (2005)	The relationship between purchasing social responsibility and firm performance was studied	Though there was no positive relationship between purchasing social responsibility and firm performance, relationship learning was found to have a positive relation on performance	Given that this study found positive relation between relationship learning and firm performance, the current study extended on this by examining the relationship between green relationship learning and firm performance which is lacking in most current literature

Author	Objectives	Finding	Relation to Current Study
Sheng and Chien (2016)	Studied the relationship between learning orientation, relationship learning and innovation	Findings were mixed though in one of the case studies high level learning orientation related positively to lower level learning and innovation	Though this study did not directly relate learning with firm performance as in the current study, its findings of different results in different sectors assisted the current study to focus on the electronics manufacturing sector in South Africa
Akgün and Kirçovali, (2015)	They studied the relationship between firm wisdom and performance	Their study showed that actual practical organisational learning and wisdom positively impacts performance	This study shows yet another positive relationship between wisdom, learning and innovation and firm performance. The current study study extended this by focusing specifically on green learning, green wisdom and see how it relates to marketing capability and firm performance.
Cheung , Kong and Kong , (2010)	The focus was to study how external organisational learning impacts on firm innovation in the ICT sector in Hong Kong	The results showed a curvilinear relationship between learning and innovation. It further showed that knowledge base and ability to absorb positively impacts innovation	The current study did not focus on innovation but on firm performance and green

Author	Objectives	Finding	Relation to Current Study
Wong ; Cheung and Fan (2009)	Focus was to examine how firm learning styles related to performance of projects. Three main learning styles identified in literature: single loop learning-detecting and correcting errors without changing underlying assumptions about performance requirements, double loop learning- improvement actions taken to respond to changes in underlying assumptions of a project and Deutero Learning which ensure the establishment of a system which propels continuous learning	Findings showed a positive relation between project performances double loop learning. It was also found that the process of single learning was facilitated by Deutero learning	This study was tested using structural equation modelling in the engineering sector. The current study was also tested using structural equation modelling in the manufacturing sector. The findings of relating learning types to performance in the study relates to proposed hypotheses in the current study to examine the relationship between organisational relationship learning and firm performance. However, the current study did not focus on learning types as is the case in this study. The current study further related learning to other functional areas like green human resource investment, green marketing capabilities, and firm performance which are not fully explored in current literature
Mirvis et al. (2016)	The focus was to examine how tacit knowledge learned from external stakeholders relates to innovation in CSI	According to their findings, tacit knowledge developed from shared interaction with stakeholders comprise much of the knowledge used for innovation in CSI	The current study expanded on the findings from this study by testing this relation between learning and green CSI and further relate this to firm performance

Author	Objectives	Finding	Relation to Current Study
Marques et al. (2008)	The study aimed to examine how knowledge sharing behaviours related to performance	The findings showed that performance was positively related to knowledge sharing behaviour	Following from this study our research examined how green relationship learning relates to performance and also green CSI. This study was tested on social networks and the current research was tested on stakeholder networks for electronics manufacturers in South Africa. While this study was tested using network analysis, the current research was tested using structural equation modelling
Akgu¨ na et al. (2007)	The study examined the relationship between emotional learning capabilities and firm product innovation	The study found the following: (1) learning capabilities: managerial commitment, systems perspective, openness and experimentation, and knowledge transfer and integration of a firm is positively related to its level of emotional capability: the dynamics of display freedom, experiencing, reconciliation, and identification constructs (2) product innovation of a firm is positively related to emotional capability through learning capability; and (3) firm performance is influenced by learning capability and innovation.	Following from this study learning and product innovation were related to performance. This is related to our study as extended the current debate by discussing relationship learning, green marketing capability and showed how it related to not only performance but also green corporate social investment

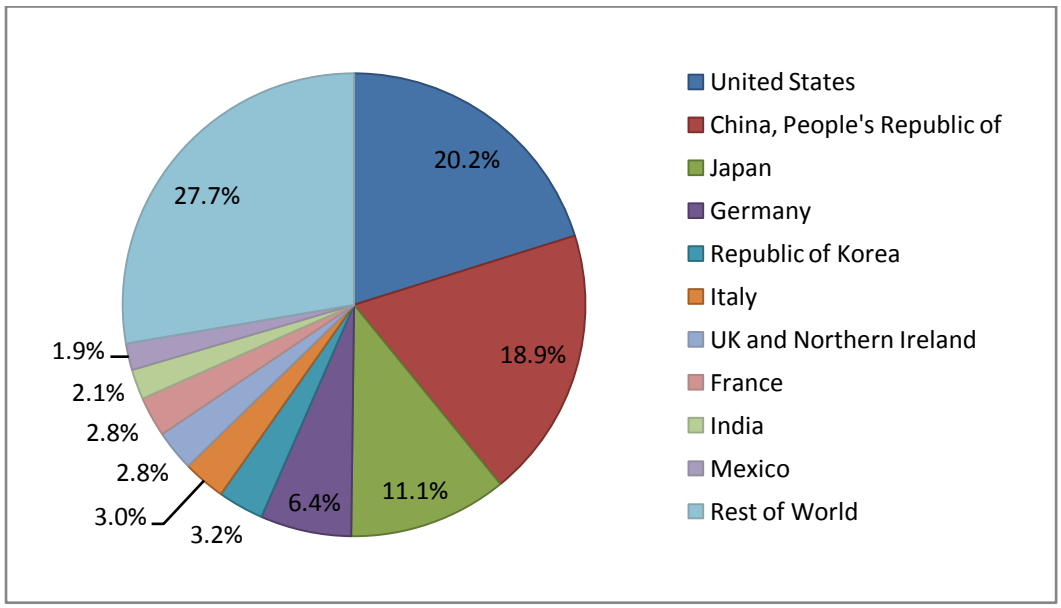
Author	Objectives	Finding	Relation to Current Study
Han et al. (2013)	The paper examined the relationship between market orientation, learning orientation and innovation corporate social investment	While the study found both market orientation and learning orientation positively related to corporate social investment, the relation between innovation and CSI was not found to be positively related as proposed in the model	The identification of market and learning orientation in the study are related to the use of marketing capability and relationship learning in the current study. While this author related these variables to CSI, the current study model related them to green CSI and firm performance. This study was tested in the paper packaging industry and the current research was tested in the electronics manufacturing sector
Qiu et al. (2014)	The study examined how supervised learning from firm'sannual reports related to firm performance	Findings showed that the more information was available to analyst through annual reports, the better their predictions of firm performance	This study identifies the important variable of learning and firm performance. However, the study focused on supervised learning while the current research examined relationship learning and relate it to firm performance. While this study was limited to financial performance, the current research examined both financial and marketing performance

Author	Objectives	Finding	Relation to Current Study
Yap and Rashid (2011)	The focus was on the relationship between competitive intelligence such as customers, competitors and the economy and firm performance	The findings showed that competitive intelligence related positively firm performance. Firms with better intelligence will be better at decision making for capacity expansion, new product development, and strategic	From this study, intelligence which is gathered through communication, and relationships. This relates to our proposed model to relate relationship learning and firm performance. The current study also proposed a relationship between green relationship learning and green marketing capability and green CSI
Goerzen (2007)	The focus was to examine the relationship between alliance networks especially repeat relations and firm performance.	The findings showed a negative relationship between repeat alliance networks and firm performance	This finding is important as it is contrary to findings by other others on the subject. Therefore, the current research is significant to resolve this academic puzzle in the electronic manufacturers in South Africa
Witajewski-Baltvilks et al. (2015)	Focused on applying the learning curve, which has been used in research and practice for forecasting costs of renewable technologies in integrated assessment model.	Their findings proposed an upward revision in the learning curve for solar PV while technologies the curve be left the same.	This study though carried out in the renewable energy cost estimation sector, it has implication for relationships learning in manufacturing sector which is the focus of the current research.

3.7 The South African Manufacturing Sector

The manufacturing sector in South Africa is broad, and it will be important to briefly present it to appreciate the electronics manufacturing sector in the context of the entire manufacturing sector. While the services sector has been classified as wealth consuming, manufacturing is wealth creating, and the foundation of most economies in the world today (Friedman 2006). The 2010 United Nations (UN) data shows that the US remains the largest manufacturer in the world, 20.2% of the world's manufacturing, with China at 18.9%. Japan is third with 11.1% of manufacturing and Germany fourth with 6.4%. The report shows that the top 10 countries in the world manufacture 72.3% of the world's manufacturing.

Figure 3.3: Share of Worlds manufacturing of the top 10 manufacturing economies in

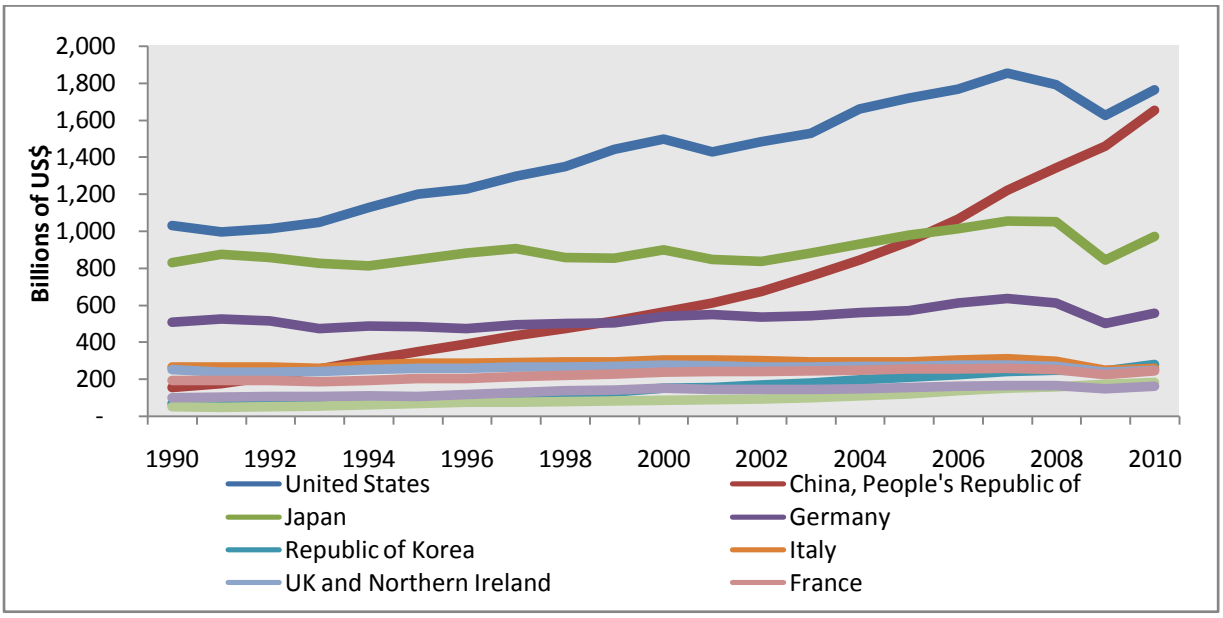


Source: United Nations, 2010

According to Figure 3.3, the top ten manufacturing countries in the world include; USA, China, Japan, Germany, Republic of Korea, Italy, UK and North Ireland, France, India, and Mexico. According to the UN data, there has been an over 600 percent increase in the manufacturing output of China from $153.2 billion in 1990 to $1.6 trillion in 2010 (at constant 2005 prices). On the other hand, in the percentage of world manufacturing terms, there has been no significant change in the US manufacturing within this period as it moved

from 20.3 percent in 1990 to 20.2 percent in 2010 but has increased from $1 trillion in 1990 to $1.7 trillion in 2010.

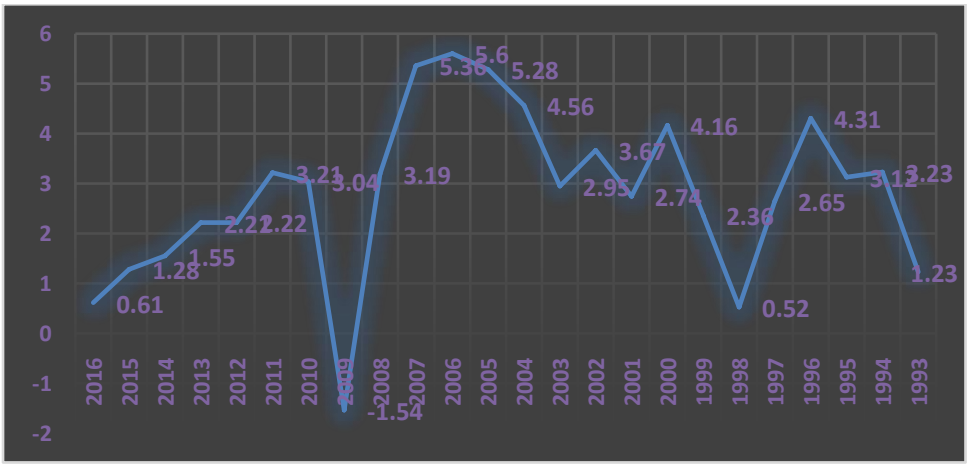
Figure 3. 4: Trends in manufacturing output in the top 10 manufacturing countries (US$, constant 2005 prices)



Source: United Nations, 2010

According to the (United Nations, 2010) manufacturing in South Africa has increased from $30 billion in 1990 to 44 billion in 2010 (in constant 2005 prices), but the SA share of world manufacturing output has decreased from 0.61% in 1990 to 0.5% in 2010. The output decrease has been in line with the decline in South African Gross Domestic Product (GDP) growth.

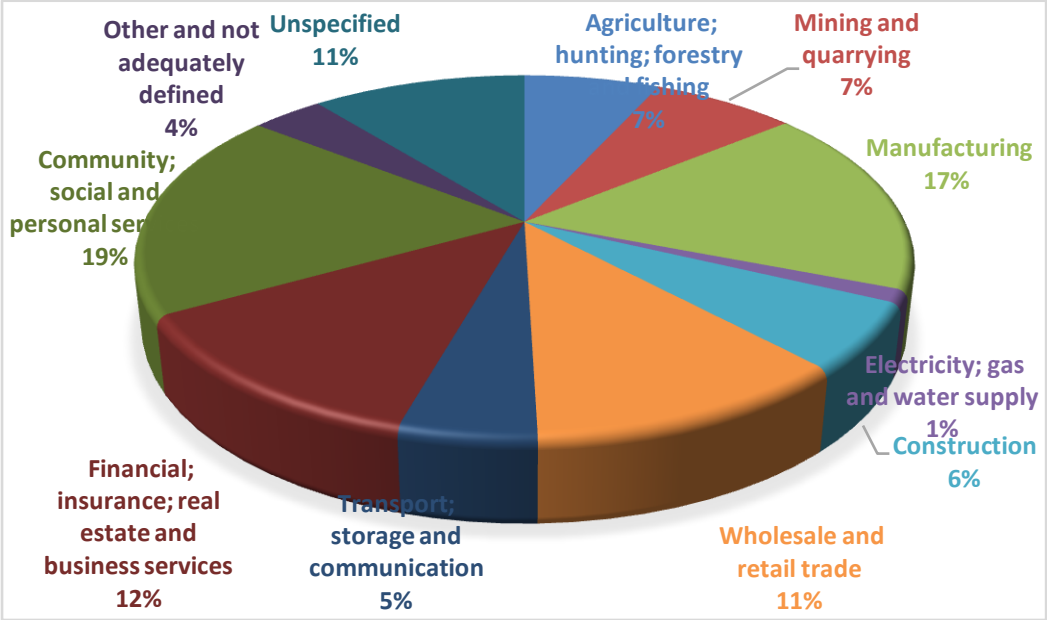
Figure 3.5: South African Gross Domestic Product Growth Rate 1993-2015



Data Source Stats SA, 2017

According to figure 3.4, the Gross Domestic product (GDP) growth rate, of South Africa decreased from 1.23 percent in 1993 to 0.61 percent in 2016. Many sectors of the economy have suffered contraction accordingly. The manufacturing in South Africa plays a crucial role in the GDP of South Africa. This study is specifically focused on the electronics manufacturing sector which contributes about 17 percent of the value added to SA economy according to the DTI. The following section will examine the contribution of the manufacturing sector to GDP in South Africa.

Figure 3.6: Gross Value Added by Different Sectors to South African Economy



Data Source: Stats SA, figure this study,2017

According to Figure 3.6, community, social and personal services contributes 19 percent value added to the South African Economy. This is immediately followed by manufacturing with 17 percent, wholesale and retail 11 percent among other sectors. Given the strategic role of the manufacturing sector, this study is focused on the electronics manufacturing sector which comprises of a significant portion of the manufacturing sector. It would be interesting to understand how these electronics manufacturers commit to green and how this relates to marketing capabilities and firm performance.

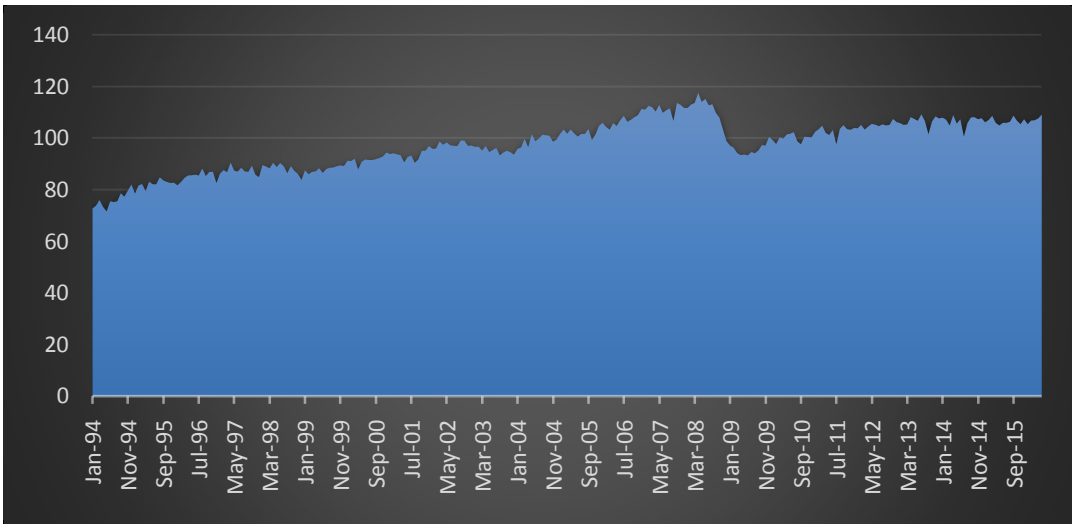
Table 3.7: Country Manufacturing Output as Share of GDPfor the Top Ten Manufacturing Global Manufacturers and South Africa from 2004 to 2010

	USA	China	Japan	Germany	Korea	Italy	UK and North Ireland	France	India	Mexico	South Africa
2004	13.6	41.6	20.1	22.4	27	18.7	13.6	13.2	15.4	18.7	18.3
2005	13.7	41.8	20.6	22.7	27.5	18.5	13.3	13.2	15.6	18.7	18.5
2006	13.7	41.8	21.1	23.5	28.3	18.7	13.1	13	16.2	18.8	18.7
2007	14	42.1	21.6	23.6	28.8	18.8	12.8	12.9	16.4	18.4	18.6
2008	13.6	42.2	21.7	22.4	28.9	18.1	12.4	12.5	16	18	18.4
2009	12.6	42	19	19.4	28.3	16.2	11.7	11.4	16.1	17.2	16.7
2010	13.4	43.1	20.8	20.8	30.4	16.6	11.9	12.3	15.9	17.8	17.1

Source: United Nations, own calculations

The total gross fixed capital formation for the top ten manufacturers in the world including South Africa is illustrated in Table 3.7. One obvious observation from the table is the fact that amongst the BRICS countries, china's economy is made up of a very significant manufacturing sector with manufacturing composing 43.1 percent of its gross value formation in 2010.The Republic of Korea also has a high manufacturing share of 30.4% in 2010 (up from 27% 2004). Germany and Japan have got manufacturing shares of GVA of above 20%. South Africa and Mexico are below 18%. However, manufacturing remains critical to the South African economy as it employs over 1.3million people according to (Stats. SA, 2016). For manufacturing to continue to play a key role in the South African economy, there is need to understand the growth in the manufacturing sector. The following section presents the growth in the SA manufacturing sector.

Figure 3.6: Volume of Production - Manufacturing Production 1994-2015 in Rand Millions



Data Source: Stats SA, figure- this study (2017)

According to figure 3.7, the manufacturing sector in South Africa has continued to grow since the transition to democracy in 1994. However, the rate of growth has continued to decrease, after the deep in manufacturing production experienced since 2008, following the global economic contraction. South Africa is in a second recession following the 2008 economic contraction.

3.8 The South African Electronics Industry

Manufacturing is a process that involves equipment and human resources to develop products and services for use or sale as semi-finished, or as final products, either locally or globally. Manufacturing can also, be used to describe various human endeavours (labour, entrepreneurship, and innovation), and used together with material equipment to produce final products or intermediaries. According to Statistics South Africa (StatsSA, 2017) manufacturing is classified under the major division 3. It includes the manufacturing of food products, beverages and tobacco (301, 302, 303, 304 and 305) and ends with the production of furniture and N.E.C (that includes categories like jewellery, musical instruments, sport goods, other manufacturing like crayons, chalk, pens, and pencils, and recycling) (subcodes 391 and 392).

According to the South African Electronics Export Council (SAEEC, 2016), The South African Electrotechnical sector has a local value of US$58 billion encompassing electrical engineering, electronics, information technology and telecommunications. According to the

Department of Trade and Industry (DTI, 2016), the sector contributes in the region of 12.5% to the South African gross domestic product (GDP). The sector covers a diverse range of goods and services that each contributes directly to the industry itself as well as the broader manufacturing and value-added technology sector in South Africa. The industry produces a range of products including software development and micro-assemblies, household electronics, Information, and Communication Electronics, equipment, communications technology, security and related technology and ultimately power and electrical engineering products. Given the broad range of products in this sector, and increasing pressure on the industry to comply with green policies in line with the constitution, various regulations and acts, and consumer pressure, it would be revealing to understand; the degree of commitment to green in the industry. This examined if there was a difference in commitment across different product segments, company size, ownership and various other variables.

According to the South African Electronics Export Council (SAEEC, 2016), the electronics manufacturing sector in South Africa has played an important role both in the development of manufacturing in South Africa and ensuring that South Africa can compete at a technologically advanced level on the global stage. It has further been the backbone of various other sectors that are crucial to the development and success of South Africa globally.South Africa's strong defense and mining history give a competitive advantage to the electronics manufacturing sector, given the fact that the government has over the years invested in the sector for strategic research and development. It is not surprising that the sector produces world class products and innovations adhering to high standards. It would be important to analyse if such high standards have led to the sector committing to green. Given the sector's elevated levels of entrepreneurship and product design, it would be interesting to see how this relates to the development of green products.

The South African Electronics Export Council (SAEEC, 2016), postulates that companies operating in the sector have solid engineering and integration capabilities gained from working as prime contractors on complex projects in satellites, missiles, and radar tracking. Also, a majority of companies have, as a minimum, ISO 9000 certification and are thus capable of providing cost-effective solutions that meet international standards and specifications both regarding design and quality. In this study, this quality was measured against environmental or green imperatives to see the level of compliance to green. A conservative estimate of export from the sector (i.e., excluding sub-systems or components which are exported in finished products such as motor vehicles) of electrotechnical goods to

the rest of the world totaled US$3.7 billion in 2014 (SAEEC, 2016). This figure does not include service exports which are an integral and important aspect of the sector.This exclusion is also relevant for our studies as we focus on green commitment and how it relates to green marketing capability and firm performance in the production of physical electronic products.

The sector does not only manufacture a huge proportion of export-oriented goods, but such exports have been growing over the years. For example, there has been a 50 percent growth in export from the sector over a five-year period ranging from 2010 to 2014.The biggest market for electronic products from South Africa is Sub-Saharan Africa which constitutes 68 percent of export from the sector in 2014. (SAEEC, 2016), also shows that South Africa is home to many multinational electronics manufacturing companies given the big market in Sub-Saharan Africa. It was interesting to find out differences in commitment to green between local electronics manufacturing companies and foreign ones. Electronic products account for 55 percent of exports in the broad category of electrotechnical products, the rest of the 45 percent comprises of technical products and ICT products.

The electrical engineering manufacturing sector in South Africa generates revenues of about US$11.6 billion per year and is constantly changing to meet customer and regulatory requirements. It was interesting to evaluate how such dynamism had led to green commitment. According to (SAEEC, 2016), South Africa is recognized within this sector as a world leader in SMART metering and pre-payment metering. Given that most of the design work on these products were carried out in South Africa, it was interesting to analyse whether there are any commitment and implementation of green product design in these commodities. Given the large scale of export to over 60 countries in the sector, green relationship learning and Green HR investment can also influence the supply of green products from South Africa. It was interesting to analyse if the offering of such services as design, project management, contracting, manufacturing, operation, implementation, training and maintenance to various clients involves green commitment and green marketing. Electronic technical products are offered in the following focused areas: • Energy management, monitoring and • 'Green Building' energy efficiency systems. Many multinational companies have set up in South Africa given the state of the art production facilities developed in South African electronics manufacturing. The needs of developing countries are considered when developing electronics products in South Africa. It was important to evaluate the extent of recognition and commitment to the needs of other stakeholders like government and the environment. To

localize production (SAEEC, 2016), reports that capacity building and sales support are key components of the product offering. We examined whether the green human capital investment is part of the skills development in the sector.

Specifically, South Africa has production facilities to Generate and transmit; • Mini substations; Three-phase step-up and step-down transformers up to 500 kV, 800 MVA; • the only manufacturer of transformers larger than 200MVA in Africa; • Switchgear; • Cables; • Transmission line components; and • Lighting – road and area, industrial. At the core of the South African electronics sector is a contract manufacturing industry that utilises a wide variety of technological platforms to serve high-tech and mixed technology markets. The firms in this sub-sector have developed a competitive advantage due to the demand for a wide range of sophisticated products from their customers, with solutions ranging from defense, aerospace, medical and security through to mining, measurement, and monitoring. The electronics sector also manufactures sub-systems which are integrated into complex solutions. Companies have invested in South Africa's capacity to deliver high quality – high technology services such as BAe Systems, Johnson Controls, Samsung, Sony, LG Electronics, Boeing, Airbus, and Alcatel.

The customers of the South African electronics sector range from large multinationals to specialised local clients in a wide variety of industries. What these clients have in common are sophisticated demands regarding performance, flexibility, and quality of electronic manufacturing services. The global market for EMS is estimated to reflect annual growth rates of around 6% for the next 3 to 5 years despite a global slowdown in global outsourcing. Th South African electronics manufacturing sector is positioned to provide superior quality, professional, and efficient services based on specific customer needs with the flexibility to ensure satisfaction and reliable delivery. The South African electronic contract manufacturing sector is equipped with high-tech design, manufacturing, assembly and testing facilities that are certified to meet strict standard and performance criteria. South African contract manufacturers are known for their strong systems engineering competencies that include the understanding of different technology platforms and the ability to integrate solutions into larger systems. Electronic products manufactured in South Africa can withstand demanding operating environments, including those encountered in the aerospace, medical and mining sectors. The South African electronic product manufacturers are described by foreign buyers as trustworthy development partners who seek to fully understand the needs of their customers. South African manufacturers can provide high-quality products at lower prices

than are possible in other parts of Africa and Europe. Services and platforms range from throughhole and ultrafine pitch surface mounts technology to ball grid arrays. Automated pick-and-place technology and hand assembly are combined when required. Most manufacturers can provide automated optical inspection services as well as in-circuit and functional testing. In the design and systems engineering arena, the industry offers practical problem-solving skills as well as digital design, simulation, testing, post-manufacturing and consulting services. South African firms provide original design products, thereby saving OEM customers significant non-recurring engineering costs associated with product development.

The electronics manufacturers are certified to international standards such as ISO 9001:2008. The production line staffs are trained to the IPC610 quality standard. The manufacturers that serve the aerospace market are also regularly subjected to and pass audits to manufacture for clients that require the AS9100 certificate. Manufacturers that serve the medical and automotive markets have the relevant quality standards in place. South Africa boasts a strong, internationally recognized standards, quality, and metrology and accreditation system. South African companies can meet the strict audit requirements to meet the conformity mark directives for products destined for the European or US markets including the CE and UL marks.

Conclusion of Chapter

This chapter presented the empirical literature review of this study. The chapter reviewed literature of the different constructs used in the study such as corporate governance, green markting capability, green human capital investment, green relationship learning, firm performance, the South African manufacturing and electronics manufacturing sector and conclusion. The fist section presents the introduction to the literature review with presentation of important concepts reviewed. The literature review presented a historical perspective of research on the different concepts to present the debates and issues studied so far related to the different concepts. Section 3.1 presented an introduction to the chapter, section 3.2 presented and discussed corporate governance and firm commitment to green, section 3.3 presented literature on green marketing capability. This was followed by section 3.4 that presented literature on green corporate social investment. This was followed by section 3.5 that presented literature on green human capital investment, section 3.6 presented literature on green relationship learning. This was followed by section 3.7 that presented

literature on firm performance. Section 3.8 presented the South African manufacturing and the electronics manufacturing sector, the final section presented the conclusion to the chapter. This chapter attempted to show the current issues researched in different context on the constructs developed and highlighted the research gap and the role of this thesis to fill this research gap. This chapter finally established that despite the existing literature of research on the constructs investigated in this study, there was scant literature that could be used to explain the relationship between firm commitment to green, green marketing and firm performance. The situation was further compounded by the fact that even the scant literature that existed, none of the studies was situated in the electronics manufacturing sector in South Africa.

CHAPTER IV

CONCEPTUAL MODEL DEVELOPMENT

&

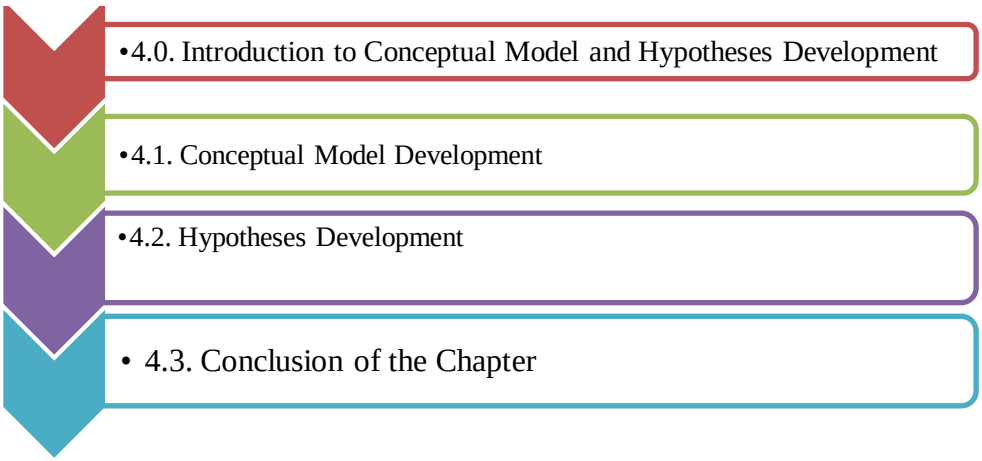
HYPOTHESES STATEMENT

“If you build up the soil with organic material, the plants will do just fine”. ― John Harrison

4.0. Introduction to Conceptual Model and Hypotheses Development

This chapter presents the conceptual model developed and tested in this thesis. It further presents the hypotheses developed and tested in this study. The conceptual model presented is based on literature reviewed and the research gap identified. The theoretical literature reviewed also contributed to the development of the conceptual model. This chapter intends to develop and present a conceptual framework and hypotheses to explain the relationships between firm commitment to green, green marketing capability and firm performance. This chapter has two main sections: the conceptual model section and the hypotheses development section. The first section presents an overview of the proposed model to underrated and explain how firm commitment to green, green marketing capability are predictors of firm performance and green CSI. It presents important constructs that constitute building blocks of this model. One of the goals of this study is to investigate how firm commitment to green impacts on firm performance. Therefore the second section of this chapter is dedicated to explaining the proposed hypotheses relating the different constructs. The second section in particular synthesizes and discusses the theoretical debates on the different constructs. The research gap is highlighted and how the proposed model fills the research gap is presented using operational concepts. Each hypothesis is developed and presented. The chapter ends with a conclusion based on the development of the conceptual model and hypotheses.

Figure 4.0: Structure of the Chapter



Source: This study (2017)

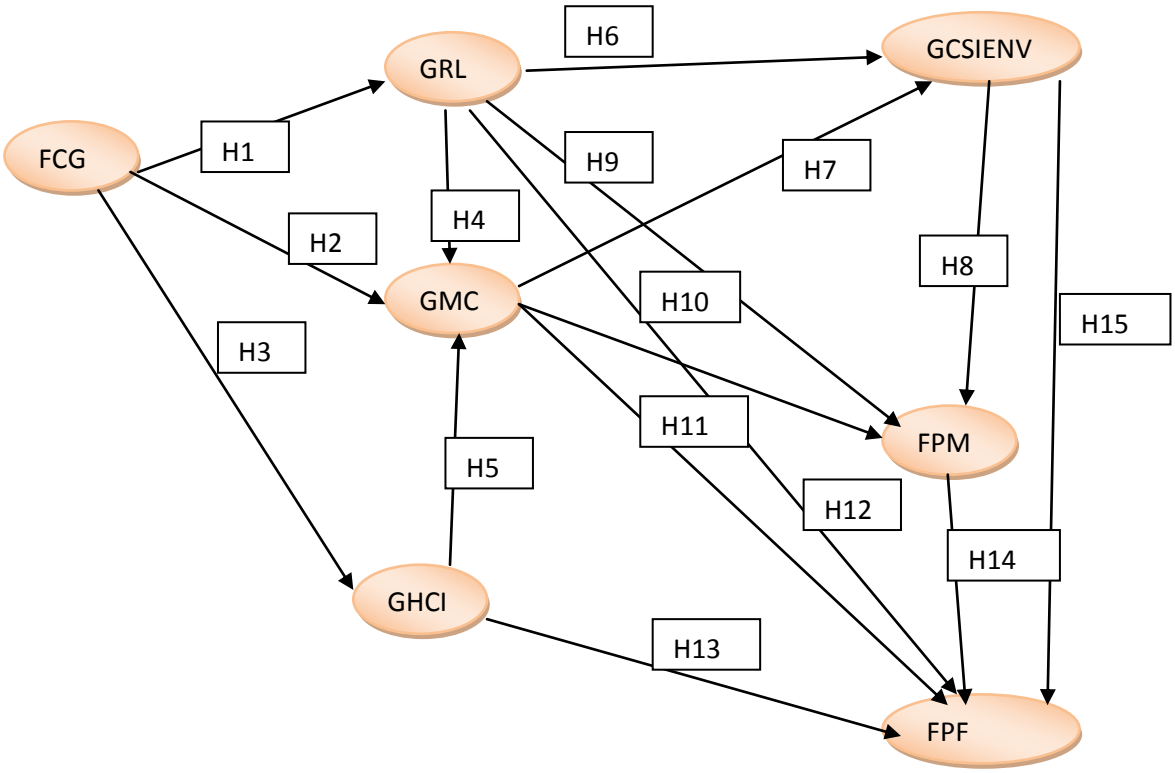
Figure 4.0 presents the structure of this chapter. The chapter consist of two main sections: the conceptual model development and the hypotheses development. The following sections present a detailed discussion of the different sections.

4.2 Conceptual Model Development

Various authors (Miles & Huberman, 1994; Robson, 2011) have defined a conceptual framework as the collection of concepts, assumptions, expectations, beliefs and theories that supports and informs a research study. For example according to Miles and Huberman (1994), a conceptual framework is a visual or written product used to explain either using diagrams or narratives, the main constructs or variables under investigation and the proposed relationships among them. In this study the researcher used a conceptual framework to explain the relationship among the core variables under study. The core variables investigated in this study included: Firm Commitment to Green (FCG), Green Marketing capability (GMC), Green Relationship Learning (GRL), Green Human Capital Investment (GHCI), Green Corporate Social Investment (GCSI), Firm Performance Financial (FPF), and Firm Performance Marketing (FPM). Arrows were used to illustrate the proposed direction of the relationship among the constructs. The use of a conceptual framework in this research is supported by various studies pointing to how conceptual frameworks guide a research process (Ravitch and Riggan, 2011). The conceptual model developed in this study attempted to present and explain some of the constructs used green marketing research literature and how this study sees the relationships.

In this conceptual model, corporate commitment to green, green corporate social investment and green marketing were the predictor variables. Green relationship learning and green human capital investment were the mediating variable while firm performance was the outcome variable. In the conceptual model developed in this study, it is proposed that the various green corporate social investment and green relationship learning are likely to have effects on green marketing practices which will also influence firm performance. At the same time, it is proposed that corporate commitment to green might have an impact on Green Relationship Learning and Green Human Capital Investment. Figure 1 presents a conceptualized research model. This was followed by a discussion on the proposed relationships between the constructs of the research were discussed hereafter.

Figure 4.1: A conceptual Model of the Study.



Source: This study, 2017.

Key to the conceptual Development Model

1. FCG- Firm Commitment to Green
2. GMC- Green Marketing Capability
3. GRL- Green Relationship Learning
4. GHCI- Green Human Capital Investment
5. GCSIENV- Green Corporate Social Investment
6. FPF- Firm Performance -Financial
7. FPM- Firm Performance -Marketing

4.3. Hypotheses Development

The proposed relationships between the research construct are discussed hereafter.

4.3.1. Corporate Commitment to Green and Marketing Capabilities

Following the publication of the Brutland Report on Sustainable Development titled "Our Common Future," there has been increased pressure both from consumers and other stakeholders on firms to commit to green. It is not surprising that both the South African Constitution and various other legislations require businesses to commit to green. This legislative requirement has led companies to develop various green marketing capabilities to enhance their green image and attract more green conscious consumers. The relationship that has existed between corporate commitment to green and green marketing capabilities has been widely researched marketing literature (Kushwaha and Sharma, 2016; Belz, 2005; Baker & Sinkula, 2005). The direction of causality within the studies have not been made clear, in the sense that corporate commitment to green could affect marketing capabilities both in a positive sense and an in a negative sense. This has been reinforced by findings from current studies which are inconsistent on the reasons firms commit to green. While some authors hold that firms commit to green on the grounds of reducing the threat of liabilities and cost of compliance, others hold that it is about management of resources and creation of environmental sustenance. However, both academic views agree that the use of green capabilities by firms can result in competitive advantage (Ambec and Lanoie, 2008; Berchicchi et al., 2012, Clarkson et al., 2011; Molina-Azorin et al., 2009). According to (Kushwaha and Sharma, 2016) firm commitment to green will impact positively on green marketing capabilities. The researcher developed the conceptual model with the construct of firm commitment to green directly and positively related to green marketing capability in the electronics manufacturing sector in South Africa. The research proposed following from current literature, that for firms to derive more value from their commitment to green, they will develop green marketing capability. This will involve, green their production process, greening their products, and greening their marking strategies to add green value to consumers and thus deriving more value from their commitment to green. Deducing from the discussion aboveand the empirical evidence, it could be posited that:

H 1: Firm commitment to green positively affects green marketing capabilities.

4.3.2. Firm Commitment to Green and Green Corporate Social Investment

Firm's commitment to green continues to be increasing area of research among academics and practitioners (for example Patricia Martínez (2015); Chen (2010); Baranchi Narayan (2013); Chang and Fong (2010). The increase in firm's commitment to green has been accelerated by both pressures from consumers and legislators. Researchers agree that increased environmental and sustainability concerns the world over, have enhanced institutions moving from implementing Corporate Social Investment (CSI) to now implementing Green Corporate Social Investment (GCSI) (Isa, 2012). Current research examining firm commitment to green and green CS have focused on the following issues: implications of corporate governance commitment and corporate social responsibility on corporate failure (Awad and Hegazy, 2016); corporate governance practice of top 40 JSE listed companies based on 2006 annual reports (Barac and Molio, 2010); characteristics and composition of boards and how they related to performance and sustainability of the firm (Oosthuizen & Lahner, 2016); corporate governance practices of 230 companies listed on the Johannesburg Stock Exchange over the period 2002 to 2010 (Mans-Kemp, Erasmus &Viviers, 2016); Examine the role of conscious leadership in the achievement of sustainable business practices (Sukhdeo and Arnolds, 2016); Despite this move to both commitment to green and the implementation of green corporate social investments, there is scarce research explaining the relationship between firm commitment to green and GCSI. The understanding of the understanding of GCSI has become more and more significant in the era of growing environmental concerns. For example, electronics manufacturing companies in South Africa would need to know how to optimise their green CSI initiatives both to add value to consumers and stakeholders and to improve the marketing and financial performance of the firm. According to (Vuontisjärvi, 2004), the organisation being socially responsible is not only fulfilling legitimate expectations but also going beyond compliance, investing more in human capital, the environment and relations with stakeholders. Many firms are committing to green in their governance policy. Research also shows that CSI is a way business use to demonstrate their commitment to society and the environment. We, therefore, propose that commitment to green by electronics manufacturing companies in South Africa is directly and positively related to green CSI by the firm. Such green CSI will be used to put into practice the commitment to green made by the enterprise in policy. This will directly impact on the firm's stakeholders such as communities, environment, government, etc. Deducing from the discussion above and the empirical evidence, it could be posited that:

H2: A firm's commitment to green positively affects green corporate social investment

4.3.3. Firms Commitment to Green and Green Human Capital Investments

Current research shows that Human Resources (HR) remains a key to corporate success. Human resources are involved in the transformation of organisational goals through the use of technical and administrative skills to realise products and services for consumers. With an increased business case for green and the shift in various organisations to go green (Ambec & Lanoie, 2008), there is a need for the HR functions to be aligned with the green vision and policies of the organisation. Various authors have shown that companies are increasingly committing to green today due to increased environmental degradation the world over (Kock et al., 2012; Madsen, 2009; Nejati et al., 2014; Walker and Wan, 2012; Zou et al., 2014). Pressure from stakeholders including employees is pushing companies to respond to this in various ways including committing to investing in green human capital (GHRI). There is also an increased regulatory framework such as environmental agreements signed by governments and governance codes such as the King 3 code of governance for South African companies (Institute of Directors, 2008). These regulations compel companies to comply with integrated reporting and to ensure that needs of stakeholders especially consumers and communities are catered for by businesses. In this light, going green or committing to green has become prevalent in businesses the world over. According to (Graci and Dodds, 2008) various industries have now focused on understanding the business case for green. Businesses have moved beyond being committed to green for the sole purpose of being green because of consumer pressure, civil society pressure, the press or complying with regulatory requirements. Firms have over the years realized the strategic importance of green. Some of the areas covered in research focused on firm commitment to green and green human capital investment include the following: examining current studies on corporate governance, HR governance and HR governance frameworks and to recommend an HR governance framework that can be implemented by South African organisations (Grobler, Bezuidenhout and Hyra, 2014); overview of the development of corporate citizenship, sustainability and sustainability reporting and the board's role in this regard; and, secondly, to provide evidence regarding the board's commitment to sustainability as disclosed in a company's sustainability reporting (Marx and van Dyk, 2011); examine the implementation of green initiatives in the Tswane municipality (Mukonza and Mukonza ,2015); focused on how greening suppliers and innovation relates to competitive advantage and sustainable development (Van den Berg, Labuschagne, & Van den Berg, 2013). Despite the icreased regulatory framework and the call

for firms to go green, there has been little focused research on firm commitment to green and how it relates to green human capital investment. Given the strategic role of human resources to ensure that the green commitment of firms is implemented. This research proposed that the more firms commited to green the higher the likelihood that they were going to invest in green human capital. This study assumed a direct and positive relationship between firm commitment to green and green human capital investment. Therefore, we state hupothesis three as follows:

H3: A firm's commitment to green positively affects green human capital investment

4.2.4. Firms Commitment to Green and Green and Green Relationship Learning

The increase in global warming, increased environmental degradation and its effects on humanity and other creatures the world over have resulted in a new kind of consumer today. A customer that demands more from companies and the government and vote with their buying power (Chamorro and Bañegil, 2005). Research evidence points to the fact that these types of consumers are increasing globally and businesses can no longer ignore their concerns. There is need for businesses to learn about their needs. There is also an increased regulatory framework such as environmental agreements signed by governments and governance codes such as the King 3 code of governance for South African companies (Institute of Directors, 2008). Businesses need to increase their learning and understand of these regulations. These regulations require companies to comply with integrated reporting and to ensure that needs of stakeholders especially consumers and communities are catered for by businesses. In this light, committing to green has become prevalent in businesses the world over. According to (Graci and Dodds, 2008) various industries have now focused on understanding the business case for green. This means that they need to increase the understanding not just of these terms, but also what it means for different stakeholders: consumers, suppliers, government, environment, civil society and any other interested party. In order for businesses to understand and know the needs and interest of their stakeholders in relation to green, they need to learn from different relationships and marketing touch points within the organisation. The term "relationship" has been defined by various authors as the connection and networking between one and the others, for example, connections between companies and their suppliers, clients, customers and other stakeholders. Following from this and (Chen and Chang, 2011), defined green relationship learning as learning activities about environmental management that are facilitated by business relations, information exchange,

developing common learning areas and updating corporate action accordingly from suppliers, customers, partners, and stakeholders. Chen, (2008) postulated that companies should learn from their relevant partners to improve the quality and reliability of the product. Information sharing through relationship learning can help organisations update their information on green and enhance compliance to green commitment. Green relationship learning and technology transfer result in firms producing more green products and improves environment-friendly practices (Luthra et al., 2011).Therefore, information gained from suppliers and one another as a result of their commitment to green. Therefore this study proposes a direct and positive relationship between s firm's commitment to green and green relationship learning. We suggest that the more firms are committed to green, the more likely they will want to learn about the green interest of the different stakeholders of the organisation: consumers, supplier, distributors, government, civil society, the environment and other interest groups. Therefore, we state hypothesis four as follows:

H4: A firm's commitment to green positively affects green relationship learning

4.2.5. Green Marketing Capabilities and Green Corporate Social Investment

Kotler and Armstrong, (2009), defined green marketing as "marketing that meets the present needs of consumers and businesses and preserves or enhances the ability of future generations to respond to their needs." In line with this definition, many marketing scholars agree that green marketing gets its roots from an understanding that marketing has an impact on the environment and society as a whole. In this light, (Lu et al., 2013) asserted that green marketing is not a static field but has grown to be known as that corporate philosophy enabling the development and communication of a firm's environmental orientation and thus resulting in better brand image and performance of the firm. Following from this, firms are increasing building green marketing capability. Green marketing capability in this context, include both green business process, green producs and services, and greening the price, product, distribution channel and greening sales, promotion, and advertising. This reserch define "green product" as a product that is developed through green commitment, green process, and eco-innovation. In this study, green marketing capability will be defined in line with (Kammerer, 2009). This author used five determinants to define green marketing capability i) environmental attributes of products in marketing, ii) voluntary environmental targets for products, iii) a systematic environmental analysis of products, iv) product developers' training in environmental issues, and v) a certified environmentally friendly management system.There is increased the relevance of environmental sustainability and CSI

issues both among practitioners and academics (Garzella and Fiorentino 2014). Various authors have shown the positive impact of green management competitive and organisational strategy (Siegel, 2009; Clarkson et al., 2011). Most previous studies on the subject have relied on theories such as the socio-institutional and resource-based theories of the firm (Bowen, 2007). This study will incorporate additional theories such as the profit impact of marketing theory, and the stakeholder theory to show green marketing capabilities relates positively with green corporate social investment. This study proposes that there is a direct and positive retionship between green marketing capability and firm performance. The research argues that a firm that builds more green marketing capability is more likely to be engaged in green corporate social investment initiatives. Therefore, we can postulate that:
H5: Green marketing capabilities positively impacts on Green Corporate Social Investment

4.2.6. Green Corporate Social Investment and Firm Performance

According to research corporate social investment has its roots in 19th Century (Bing-xue, 2011). At the time, firms were seen to be organically linked to their societal environment (Heald, cited in Frederick 1994). The concept of CSI has evolved since the 1910s after the role of directors of businesses was viewed to be narrowly focused on shareholder interest (Bing-xue, 2011). This author further stipulates that even in the 1930s companies were educated to be socially and environmentally aware and responsible. However, the due to the increase in size and power of US Corporation, the modern concept on CSI was born. In 1953, CSR was defined as the duty of companies to follow policies, and make decisions, or follow lines of action which are desirable regarding the goals and ethics of communities. In line with the above definition, CSR means company's resolutions and activities carried out to enhance the total value and good to society above company's profit or other interest. According to Davis and Blomstroan (1969) as cited in (Carroll, 1999) Business, have obligations to society over and above economic and legal obligations. There is a need for businesses to consider well their actions as such actions may impact on others. Despite the importance of green corporate social investment, it is important for firms to understand how such investment contributes to the performance of the organisation. Research on the subject of green corporate social invest over the years have focused on the following issues: examine how CSR relates to the adoption of green IT strategy (Bohas and Poussing, 2016); examine how CSR relates with traditional variables such as company identification and product quality to consumer loyalty (Arikan and Gunner, 2013); analyse gender and CSR in terms of so called ‘big wins’ for business and society (Vilk et al., 2014). Various authors have postulated from a

comparative institutional approach that differences in CSR result from differences in location and industry of the firm (Sison 2009; Xu & Yang 2010; Jamali & Neville 2011; Avetisyan & Ferrary 2013) Research on the subject of green CSI have not clarified both the financial and marketing impact of green CSI. However, other authors have found long term benefits for businesses as a result of businesses carrying out some socially responsible practices (Davis, 1960). Following from this, this study suggest that there is a direct and positive relationship between green corporate social investment and firm performance. According to the current research, firms taht engage in more green corporate social investment will have a better performance both financial and marketing than those that donot. Therefore, we can postulate that:

H6: Green Corporate Social Investment positively impacts on firm performance

4.2.7. Green Relationship Learning and Firms Marketing Capabilities

Green relationship learning is defined as learning activities about environmental management that are facilitated by business relations, information exchange, developing common knowledge areas and updating corporate action accordingly from suppliers, customers, partners and stakeholders (Chen and Chang, 2011). There is agreement among various scholars that relationships are a source of learning for firms and enabling companies to get a competitive advantage. Academics and practitioners are interested in the value of green relationship learning. According to Lin and Chang (2008), quality and reliability of services and products offered by businesses can be improved through targeted relationship learning. Electronic manufacturing businesses in South Africa can exchange information and knowledge with suppliers, consumers, government, communities and other stakeholders and learn more from these interested parties and improve the services and products offered in the sector. For example, relationships are considered a source and target of firm learning (Lukas et al. 1996). Following from this conceptualisation, various authors have examined the relationships between firms and different stakeholders, supplier, consumers, government, communities as sources of learning for the organisation. On the other hand, various authors defined marketing capabilities the firm’s ability to "integrate, reconfigure, gain and release" resources (Eisenhardt & Martin, 2000). Following from this definition (Vorhies, Morgan & Autry, 2009), took the definition further by asserting that marketing capabilities are " business strategy facilitators" that enable a company to implement its strategy and superior archive performance in the market.According to (Chen, 2008), companies should learn from their relevant partners to improve the quality and reliability of the product. His studies

implied the link between green relationship learning and green marketing capability. Information sharing through relationship learning can help organisations update their information on green and enhance green marketing capability. Green relationship learning and technology transfer results in firms producing more green products and enhances environment-friendly practices (Luthra et al., 2011). Following from this, this research argues that there is a direct and posistive relationship between green relationship learning and firm green marketing capability. Specifically, the study suggests that firms that develop more green relationship lerning are more likely to enable and develop more green marketing capability than those that do not. Therefore, hypothesis seven is stated as follows:

H7: A firm's green relationship learning positively impacts on firms marketing capabilities

4.2.8. Green Human Investment and Green Marketing Capabilities

Human resources remain the core resources for any organisation to realise its strategic objectives. Various authors have researched on the subject green HR and firm performance (Aragon-Correa, Martin-Tapia, & Hurtado-Torres, 2013; Renwick, Redman, & Maguire, 2013). Various disciplines in business and management have studied the importance of green HRM with a focus on for example strategic, cultural, and operations dimensions and how this relates to green outcomes (Haddock-Millar et al., 2015). Current research illustrates that for businesses to reach their sustainability goals, the HR function is critical (Cohen, Taylor, & Muller-Camen, 2012). Despite the importance of HR to firms today, if HR managers do not view themselves as strategic drivers of the firm's green goals and policies- the implementation of such policies may be lacking (Haddock-Millar et al., 2015). They, therefore, suggested that the strategic positioning of the greening of the HR function is critical to realise the sustainability goals of the firms. This can be realised through three main approaches: value based on principles and passion for the company's leadership and employees; strategic route involving corporate rebranding/ change of business model and a defensive course aimed at introducing policies and practices to meet legal requirements (Cohen et al., 2012). According to (Brio et al., 2007) there is need to generate capacities that focus on integrating the organisation functions with green. However, this literature is silent on how this integration relates to green HR investment. The research also suggests that such strategic alignment gives firms a competitive advantage. Research also shows differences between green HR talk and Green HR action (Prasad &Elmes, 2005). Recent studies on green HRM demonstrate how green HR talk relates to action (Jabbour, 2011). One of the ways for green HE to impact action in the orgainsation is to influes the human resources to build green

marketing capability. Marketing capability has been defined as the firm's ability to "integrate, reconfigure, gain and release" resources (Eisenhardt & Martin, 2000). Following from this definition (Vorhies, Morgan & Autry, 2009), took the definition further by asserting that marketing capabilities are " business strategy facilitators" that enable a company to implement its strategy and superior archive performance in the market. There has been increasing research related to green human resources and how it related to other business functions. For example: what core resources enable Environmental Management Systems (EMS) to give firms a competitive advantage from a resource based view of the firm (Wu et al., 2008); stimulating the field of HRM to expand its role in the pursuit of environmentally sustainable business (Jackson et al, 2011); study the relationship between capital and human resource investment on performance (Stock et al., 2014). Despite this increasing interest in research on green human capital investment and how it relates to other business areas studies that directly relates green human capital investment and green marketing capability is scant. However, there are increased calls for studies that illustrate the relationship between green human capital investment and other business areas including marketing. This research therefore suggest based on literature review that the more a firm invests in its green human resources, the more it enables its green marketing capability and the ability to produce green products and services. This study proposes that there is a direct and positive relationship between green human capital investment and green marketing capability. Therefore hypothesis 8, could be stated thus:

H8: Green Human Investment positively impact on green marketing capabilities

4.2.9. Green Relationship Learning and Firm's Performance

In this study, we defined Green Relationship Learning (GRL)in line with (Chen and Chang, 2011) who defined GRL as learning activities about environmental management that are facilitated by business relations, information exchange, developing common learning areas and updating corporate action accordingly from suppliers, customers, partners, and stakeholders. Studies show that exchange of information, developing shared learning focus, and behaviour of firms and stakeholders can be improved through Relationship Learning. There is is a need within the customer-supplier relationship, for organisations to develop a learning and collaborative culture with various stakeholders. Relationship learning and collaboration develops relationship trust and competitive advantage for the firm. According to (Choe, 2004) the most valuable resource for an organisation is knowledge, and such knowledge lies within and outside an organisation. Today, firm's stakeholders such as consumers, suppliers, government, communities carry lots of knowledge that can enable the

firm's ability to deliver its products or services more efficiently and effectively to meet the needs of consumers (Singh et al., 2008). Various authors thus agree that success of organisations today is positively and directly related to organisations competitive advantage and performance (Ho, 2008, Singh et al., 2008; Choe, 2004). Despite the importance of relationship learning to firm's performance as highlighted in the literature, there is little focus in current research on relationship learning in South Africa. Most of the literature in relationship learning has been in advanced economies. There is currently, lack of academic research on the subject of green relationship learning despite the increased focus on various sectors of the economy to go green both as a result of government and consumer pressure. Understanding green relationship learning and how to derive value from it would add competitive advantage to firms and improve firm performanceLuo and Bhattacharya, (2009), found out that a company's resources interact with each other and affect performance. Therefore, this thesis postulates that there is a positive link between green relationships learning and a firm's performance- with green relationship learning being an important performance driver. This research contends that firms that firms that invest in building green relationship learning enables the performance of the firm.

Following from this one would postulate that:
H9: A firm's green relationship learning positively impacts on firm's performance

4.2.10. Green Marketing Capability and Firm Performance

Moloney and Daly (2005) defined marketing as a business practice that focuses on the importance of having a profound appreciation for the customer so that the marketer can match the intended customer needs better than the competition and thus enable a firm to have a continual competitive advantage in the marketplace. According to Arslan, Yilmaz,& Aksoy (2011), it is obligatory for every business to engage in marketing practices. Ghouri., Khan, & Malik (2011) supported that implementing proper marketing practices adds brilliance to a firm's activities and reinforce the competitiveness and market share of the company. According to Andres et al. (2009) business performance has been seen to directly depend on well-organised marketing practices. Kumar and Petersen (2005) also revealed that marketing strategies that can maximise the profitability of a firm would lead to business performance. Porter (1985) brought forth a strategy which explained that for a business to maximise its performance, it should strive to embark on strategic marketing practices. According to John and John (2006) improving business performance through the differentiation plan is directly associated with the marketing practices adopted by the firm. Moloney and Daly(2005)

defined marketing as a business practice that focuses on the importance of having a profound appreciation for the customer so that the marketer can match the requirements of the selected market better than the competition and as a result provide the firm with a continual competitive advantage in the marketplace. According to (Arslan, Yilmaz & Aksoy, 2011), it is obligatory for every business to engage in marketing practices. Ghouri, Khan, & Malik (2011) supported that implementing proper marketing practices adds brilliance to a firm's activities and reinforce the competitiveness and market share of the firm. According to (Andres et al., 2009), business performance directly depends on well-organized marketing practices. Kumar and Petersen (2005) also revealed that marketing strategies that can maximise the profitability of a firm would lead to business performance. Porter (1985) brought forth a generic approach which explained that for a business to maximise its performance, it should strive to embark on strategic marketing practices. According to (John and John, 2006) improving business performance through the differentiation plan is directly associated with the marketing practices adopted by the firm. Market-oriented firms have a superior perceptive of the external environment and are more proficient in responding to external environment demands (Fakhraddin, 2013). This study developed a model to show how green marketing capability enables firm performance for electronic manufacturing companies in South Africa. Market-oriented firms have a superior perceptive of the external environment and are more proficient in responding to external environment demands (Fakhraddin, 2013). This study argue that firms that invest in building green marketing capability are in a position to increase the performance of the firm compared to those that do not. We suggest that there is a direct and positive relationship between green marketing capability and firm performance. Therefore, companies with superior green marketing capability are more likely to impact positively on firm performance. One would, therefore, postulate thus:

H10: A firms green marketing capability positively impacts on firm performance

4.2.11. Green Human Investment and Firm Performance

Human resources remain the core resources for any organisation to realise its strategic objectives. Various authors have researched on the subject green HR and firm performance (Aragon-Correa, Martin-Tapia, & Hurtado-Torres, 2013; Renwick, Redman, & Maguire, 2013).The literature relates success in a firm's performance and green initiatives to green HR (Paille´ et al., 2014). The study that related green HR to firm performance focused on such

factors as firm size, certification and stakeholder interest and pressure (Jabbouret al., 2015). Current research has further shown the importance of employee involvement in green initiatives in the firm (Renwick et al., 2013). This can be through three main ways: pulling employees' technical knowledge, getting employees engaged and involved in making suggestions on greening the firm, and through the development of the workplace culture that promotes green. Other authors xamine what core resources enable Environmental Management Systems (EMS) to give firms a competitive advantage from a resource based view of the firm (Wu et al., 2008); Focus on stimulating the field of HRM to expand its role in the pursuit of environmentally sustainable business (Jackson et al (2011); Study the relationship between capital and human resource investment on performance (Stock et al., 2014); explore the positive relationship between green intellectual capital and competitive advantages of firms, (Chen,2008); Focused on integrating supply chain management with human resource management based on current lack of integration in literature (Jabbour and Jabbour, 2016); Focus relating both high performance human resources and enterprise human resources systems to performance (Jinxia and Bao, 2015); Focus on analyzing 33 high performance work systems/ firm performance studies from 1994 to 2013 based on a Proquest and Google Scholar Database (Rasool and Shah, 2015); The relationship between HR investment and firm performance and firm culture and HR investment was investigated (Wang, Shieh, and Wang , 2008). Despite the existence of evidence of research relating HR to firm performance, there is scant or no evidence of research relating green human capital investment and firm performance. Current literature recommends that the relationship between green HR and firm performance be looked at. Current empirical studies also identify training and green leadership as keys to successful green HR and firm performance. This thesis proposes that the more firms engage in green human resources investment, the more likely is it to have a positive impact on firm performce. Therefore, we would hypothesis that there is a positive relationship between investment in green HR and firm performance. Hypothesis 11 is stated thus:

H11: A firm's green human investment positively impacts on firm performance

4.3 Conclusion of the Chapter

This chapter presented the conceptual model developed and applied in this study. The conceptual model was a figurative representation of the constructs developed and tested in this study. This chapter consisted of four main sub sections: introduction to the conceptual model and hypotheses development, conceptual model development, hypotheses development and clonclusion. The introduction was discussed in section 4.0 this layed the foundation for the study by introducing the concepts used in this study. This was followed by the discussion of the conceptual model in section 4.1. This section presented the constructs

used in the study together with the proposed relationships and direction of relationships. This was followed by section 4.2 which presented and developed the various hypotheses. In section 4.2 both theoretical and empirical literatures to develop the hypotheses. The last section presented the conclusion to the chapter.

CHAPTER V

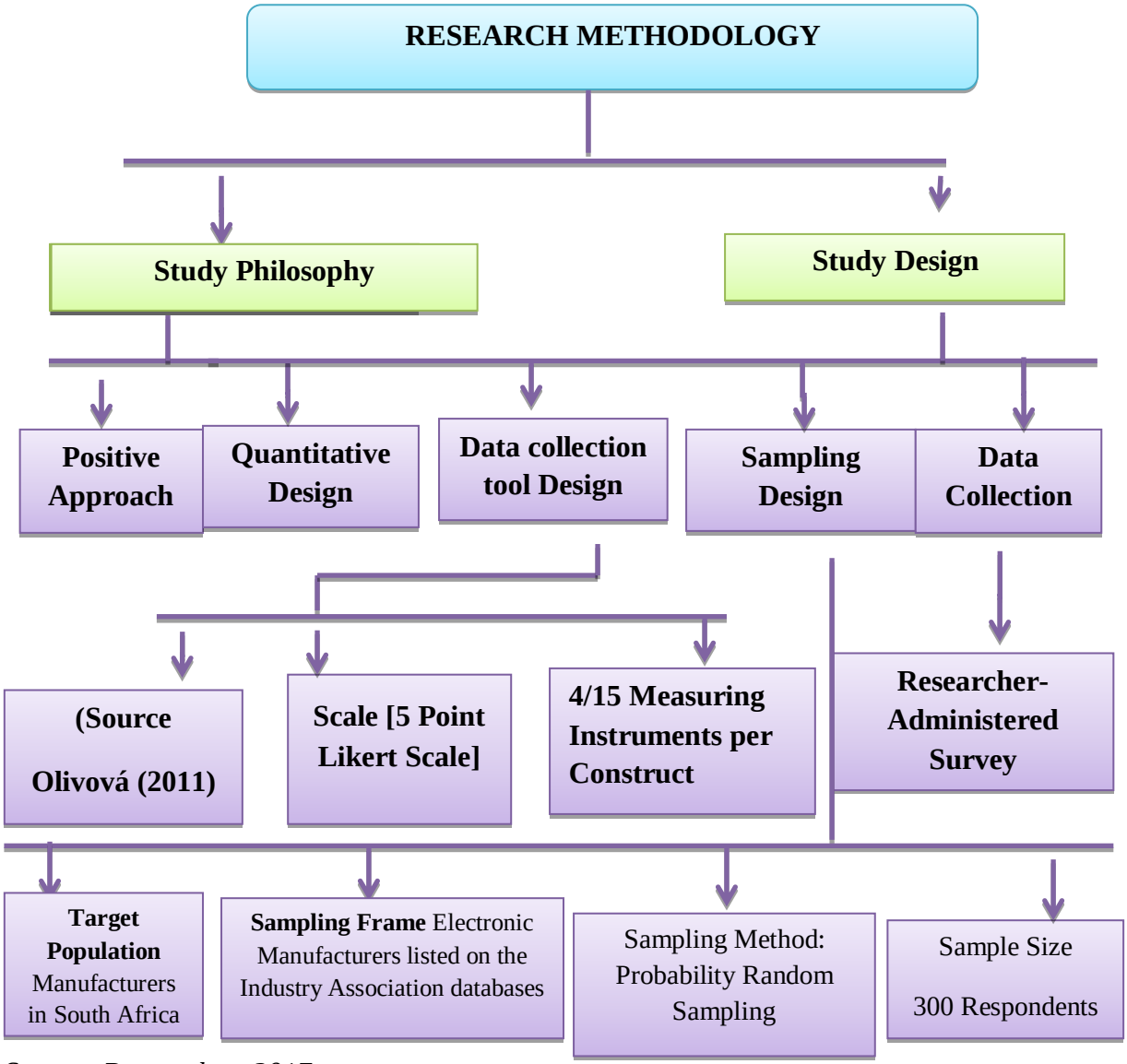
RESEARCH DESIGN & METHODOLOGY

"Without data you're just another person with an opinion." - W. Edwards Deming

5.1.1 Introduction to the Chapter

The relationship between a firm's commitment to green, green marketing capability, green relationship learning, green human capital investment and a company's performance has been less explored in the literature. Given this context, choosing a research philosophy and design was challenging to the investigator. Following a careful analysis of the aims of the investigation and the available methods, this study followed a deductive approach. In line with the deductive study methodology, the researcher developed theoretical hypotheses and will test them at a later stage in this study. This section illustrates the research philosophy and research design. The general methodology used in this thesis is depicted in figure 5.1.

Figure 5.1: An Illustrateion of the Research Method used in this Thesis



Source: Researcher, 2017

Figure 5.1 is a graphic illustration of the methodological approach followed in this thesis. It shows the two most important aspects underlying the method developed in this research – the study philosophy and the study design. According to (Easterby-Smith, Thorpe & Lowe, 2004), a method is a "(combination of techniques used to enquire into a particular situation)." Research methodology gives credibility to a study and thus plays an essential part in a study (Ates, 2008). The choice of the investigation design followed by a researcher is guided by the research philosophy chosen. Ates, (2008) highlights the fact that the quality of a study and its results maybe impacted in situations where there is no attention paid to the appropriate study philosophy. Following from current research, this study used a hypothetico-deductive methodology which is applied within a positivist research paradigm. Therefore, this study used a quantitative research design. Furthermore, the design followed in this study was divided into three sub-sections – the drafting of the questionnaire, the design of the sampling and the approach used for gathering the data. To develop the questionnaires, the constructs and instruments were mostly adapted from different studies as the constructs incorporated corporate governance, marketing, human resources and general business management. The primary research constructs were operationalised through the use of a 5-point scale (with 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree).

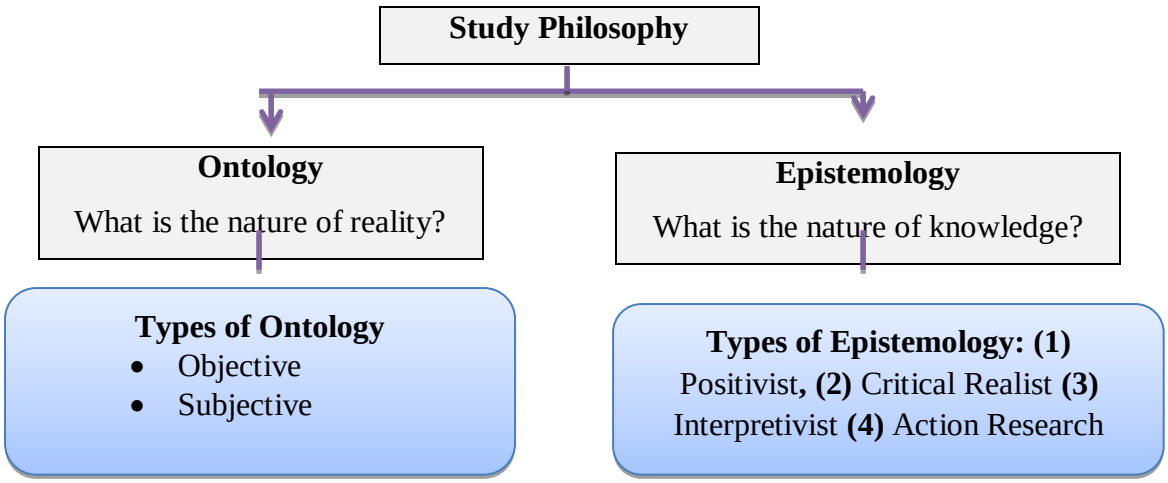
The sampling design shows that the study participants were drawn from electronic manufactures in South Africa listed on the industry associations databases (i.e., the sampling frame). In this thesis, the researcher used the simple random sampling approach to get a sample size of 300 interviewees. In this study, the researcher considered SRS approach most suitable to use in sampling given that the sampling frame was known. Also, the probability sampling used allowed for an equitable representation of sample units in the sample (Ghauri & Gronhaug, 2002). To collect data for the study, the researcher adopted a researcher administered questionnaire approach. This was because it was suitable for this study, where the investigator is looked at, as separated from the research making it difficult for he/she to influence the interviewees. However, one cannot assume that following this approach; the researcher would get a zero chance of response bias. To minimise response bias, there was a cover letter that was used in the study and the interviewees were asked to share their views honestly when filling out the questionnaire. The researcher further guaranteed the respondents that no individual responses were to be analysed separately but all responses were to be presented in summary form. The section below will show detailed discussions on the methodology used in this study.

5.1.2. The Philosophy used in this Study

A research philosophy symbolizes a researcher's perception of how knowledge is built (Sanders Verhulst & Murdock2007). Therefore, the philosophy followed in any given study may impact on the results arrived at by the researcher. It is thus important to understand how a research philosophy fits into any study before choosing a philosophy to follow in a study. There are various research theories that deal with distinctive views on how knowledge is developed. It is therefore important to understand the different philosophical approaches before choosing a perspective to follow in a study (Easterby-Smith et al... 2004). Benefits of learning the philosophical approaches include the following: (1) clarification of the research design process. (2) The investigator, based on the objectives of the survey would be capable of knowing the appropriate research method (3) the researcher can become innovative and come up with new study designs (4) Also, it helps the investigator to develop his/her research identity.

Early works in the field of research philosophy showed conditions for philosophical modeling especially in management areas (Meredith, Raturi, Amoako-Gyampah & Kaplan, 1989). Rationally, research philosophy seeks to establish if the reality under investigation is only one and if it is objective or subjective. There are four main dimensions of this approach-the research process approach, the philosophical grounding, epistemology, and methodology of the study. The following figure illustrates these four dimensions.

Figure 5.2: An Illustration of the Study Philosophy

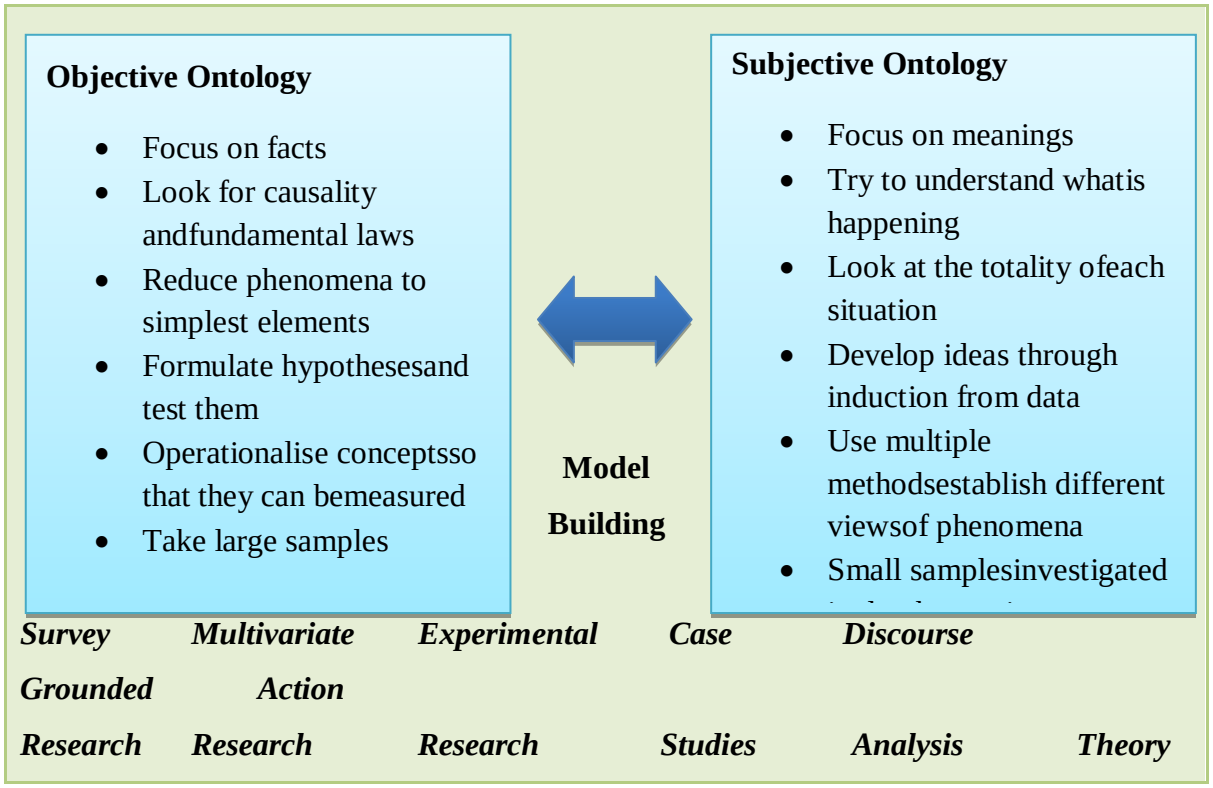


Source: This study (2017)

5.1.3. Ontology

According to the online Ontology dictionary, Ontology is defined as "metaphysical science or study of being," 1660s (Gideon Harvey), from Modern Latin ontology (c. 1600). It could also be viewed as describing views including claims and assumptions about the nature of truth and reality by individuals (Easterby-Smith et al., 2004; Hatch & Cunliffe, 2006; Flowers, 2009). Following from this, one would postulate that different people have various ontological assumptions which influence their views about truth. Individual's ontological views are based on facts available or absent to them and their interpretation of those facts (Flowers, 2009). Therefore, the lack of proper interrogation of assumptions by researchers can lead to biased conclusions in a particular area of study, where the research seeks to explain a certain phenomenon. The purpose of the investigation might be defeated by having preconceived notions about truths in a given field. According to (Flowers, 2009), it is hard to interrogate, criticise or discuss individual covert assumptions about facts. The following diagram presents the two most important ontology's (Beech, 2005; Easterby-Smith et al., 2004; and Scholarios, 2005).

Figure 5.3: The Selection of Research Methods Linked to Ontology



Source: Beech (2005)

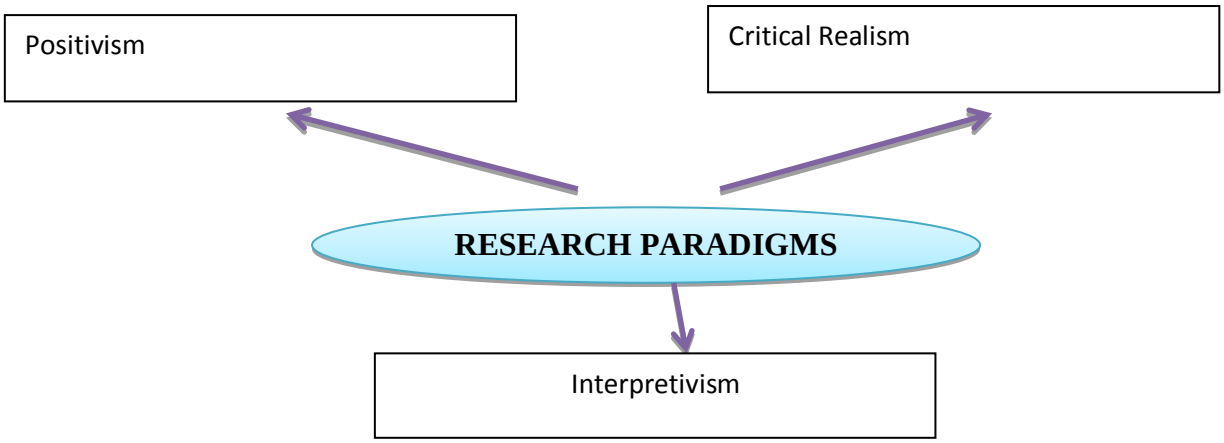
The differences between the two main ontology perspectives are presented on Figure 5.3 (Beech, 2005). Following the presentation on figure 5.3, this study adopts an objective ontology perspective. The use of this approach in this study is justified by the fact that the study is focused on truths, relationships, conducted according to given principles (for example the limit required for the survey to be valid and reliable), we used the principle of data reduction (e.g., the data was cleaned and coded on excel), we operationalised the constructs used SEM for measurement and drew conclusions from a broad cross-section of 300 respondents.

5.1.4. Background to Epistemology

According to (Easterby-Smith et al., 2008), the science involving making assumptions regarding the most appropriate approach to studying the nature of reality in the world is termed epistemology. It also includes the examination of existing knowledge, sources and gaps in current knowledge (Eriksson & Kovalainen, 2008). Epistemology can also be viewed as the science of the research method or the grounds of knowledge (Blaikie (1993). Following from this, (Flowers, 2009), concluded that epistemological conclusions are impacted by particular ontological assumptions by researchers. It is therefore not surprising there is both subjective and objective epistemology.

Data is separately collected from interviewees who are separate from the investigator (i.e., an external reality) is subject, to some level, to the assumptions of the investigator about reality. Despite this exposure, external data is viewed to be more objective compared to internal data from the researcher (Beech, 2005). Following from this conclusion, this study adopts the use of questionnaires from the respondents in the electronics manufacturing industry in South Africa that are separate from the researcher-making the researcher distinct from the objects of study. Following such objective approach will enhance the chances of getting more accurate results from this study. Adding to this, probability sampling approach adopted in this study to select respondents also increases objectivity. Three main epistemological perspectives have been identified in social sciences (Ates, 2008). The following figure presents the three most important epistemological perspectives in social sciences.

Figure 5.4: A Depiction of the Research Paradigms



Source: Ates (2008)

Table 5.1 would be used to present the differences and unique features of each paradigm. According to (Beech, 2005) paradigm is a theoretical framework that guided the research.

Table 5.1: Differences between the Research Paradigms

Elements	Positivism	Critical Realism	Interpretivism
Truth	Is determined through verification of predictions	Requires consensus between different viewpoints	Depends on who establishes it
Facts	Concrete	Concrete but cannot be accessed directly	All human creations
Aims	Discovery	Exposure	Invention
Starting Points	Formulation of explicit hypotheses which guide research	Suppositions/ Research Questions	Meanings/ Research questions

Elements	Positivism	Critical Realism	Interpretivism
Research Position (Goal Investigation)	Prescriptive, causal, theory confirming, deductive, ungrounded	Exploratory, descriptive, theory building, inductive, analytical	Descriptive
Direction of research inquiry	Measurement and analysis of causal relationships between variables that are generalisable across contexts	Development of idiographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.	Development of idiographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.
Designs	Experiment, survey	Triangulation, case study, convergent interviewing	Reflexivity, interviews, participant observation
Methodology	Outcome oriented, verification oriented	Process oriented, discovery oriented	Observation, process oriented
Techniques	Measurement	Survey	Conversation
Sample Size	Large	Small	Very small
Data collection	Structured	Semi-structured, Unstructured	Unstructured
Hardware and software	Questionnaires, statistical software programs	Tape recorders, interview guides, transcripts, qualitative software programs, visual methods	Tape recorders, interview guides, transcripts, qualitative software programs, visual methods

Elements	Positivism	Critical Realism	Interpretivism
Type of data gathered	Replicable, discrete elements, statistical	Information-rich, contextual, non-statistical	Information-rich, contextual, non-statistical, somewhat subjective reality
Interview questions	Mainly closed with limited probing	Open with probing	Very open
Interaction of interviewer and phenomenon	Independent and value-free, a one-way mirror	Mutually interactive but controlled by triangulating data, an open window	Passionate participant, transformative intellectual
Respondents' perspective	Emphasis on outsider's perspective and being distanced from data	Emphasis on the insider's Perspective	Emphasis on outsider's perspective and being distanced from data
Information per respondent	Varies (specific to question)	Extensive (broader question)	Extensive
Analysis/ Interpretation	Verification/ Falsification	Probability	Sense-making
Type of data Analysis	Objective, value-free, statistical methods	Non-statistical, triangulation	Value-loaded, non-statistical
Causality	Cause-effect relations	Causal tendencies, generative mechanisms	Not addressed
Outcomes	Causality	Correlation	Understanding
Judgement of research quality	External validity and reliability are critical	Construct validity is important	Credibility, transferability, dependability, and confirmability

Source: Denzin & Lincoln (2000); Easterby-Smith et al. (2004)

The major differences between positivism, interpretivism and critical realism paradigm on the view of truths and approach of conducting research are shown in Table 5.1. While positivism and interpretivism take two distinct views, of reality, critical realists are somewhat in-between. The following section expands on positivism, critical realism, and interpretivism.

5.1.5. Positivist Paradigm

The quantification of social reality is the main characteristic of the positivist paradigm, and it owes its origin to natural sciences and is operationalised through the development and testing of hypothesis. According to (Flowers, 2009), the quantification of social reality, development, and testing of hypothesis makes the positivist paradigm, deductive. According to this paradigm, there is an objective and external world that exists. Further, the extent to which knowledge is usable depends on how it is developed based on external reality. It further assumes that there are global principles in the real world (Bryman, 2004). The groundings of the positivist approach are values of reason, truth, and validity. This research paradigm calls for facts to be evaluated empirically through the utilisation of quantitative methods – experiments and surveys designs, that results in data gathering and statistical analysis (Hatch & Cunliffe, 2006; Saunders, Lewis & Thornhill, 2007; Easterby-Smith et al., 2008; Eriksson & Kovalainen, 2008). The positivist paradigm further advocates for the formulation of generalisable models that can be used to explain cause and effect and for forecasting (Ates, 2008).

This study developed a theoretical model with proposed hypothesis that is quantitative as there are measurable on a five-point Likert scale. Therefore, the positivist research paradigm is suitable and adopted in this study. The objectivity of the chosen positivist approach for this study was realised by evaluating the reliability and validity of the research instruments used for the research. Table 5.2 presents some of the main principles of the positivist paradigm, together with some assumptions.

Table 5.2: The Positivist Research Approach

Basic Principles	Positivist Paradigm
Its World outlook	That there is an external and objective world
How Involved is the investigator	That the investigator is independent
What is the impact of the investiagtor	That the investigator has no influence on the study
Assumptions	
What is studied	truths, mostly measurable, facts
How is knowledge built?	There is data reduction to explain various issues

Source: Blumberg, Cooper & Schindler (2008)

Various authors (Easterby-Smith et al., 2004; Scholario, 2005) identified the following features of the positivist epistemology:

- Independence – The separation of the subject of study from the researcher.
- Value-free and scientific – Objectivity in the choice of subject, sample, and method of research.
- Hypothetico-deductive – Use of hypothesis to deduce truths based on observed reality studied
- Large samples are required – Preferably above 300 responses
- Empirical operationalization – Usually quantitative
- Application of the principles of probability
- Reductionism – Break problems down into their smallest element
- Generalisation – Findings based on a large sample can be generalised to the population.

5.1.6. A Presentation of the Other Paradigms

- Interpretive Paradigm – This perspective can be defined as defined as both post-positivist (Blaikie, 1993) and anti-positivist (Hatch and Cunliffe, 2006). According to this point of view, experience, expectations, and memories give individuals and organisations an understanding of the state of affairs (Flowers, 2009). The hypothesis is developed starting with data instead of theory and literature and using an open mind (Easterby-Smith et al., 2004). Data mining and analysis gives a deeper understanding of meaning as opposed to generalisation employed in the positivist paradigm. Experience results and in the construction of knowledge. The application of the interpretivism approach involves the generation of

quantitative data through the use of methods as discourse analysis, ethnography, hermeneutics and phenomenology (Ates, 2008). Analysis of text, in-depth interviews and observations are used for data analysis following the interpretivism approach (Beech, 2005).

• Realist Paradigm/Critical Perspective – Following the critic of the positivist paradigm as being over- deterministic, with little room for choice and interpretivism, the realist paradigm was developed. This approach is contextual- entirely relativist (Hughes & Sharrock, 1997). This method can be seen as a compromise between the positivist and interpretivism approach despite its weaknesses (Easterby-Smith et al., 2004: 42).

• Action Research –where there is a joint approach between a researcher and the unit of research- action research methodology is followed. As researcher becomes actively involved in the study, this method is used in solving practical problems, especially in organisational development. Action research has two primary attributes Easterby-Smith et al. (2004:43-44):"a belief that the best way of learning about an organisation or social system is through attempting to change it, and this, therefore, should, to some extent, be the objective of the action researcher."

 "the belief that those people most likely to be affected by, or involved in implementing these changes should, as far as possible, become involved in the research process itself"

Various Theories that affect policy implementation can be built using action research. Practiced oriented theory that has to do with management processes is also made using action research (Huxham, 2003; Huxham & Vangen, 2003). The main criticism of this methodology follows from high levels of subjectivity resulting from researcher's involvement in the study.

Each of these paradigms needs to be used with caution because of their limitations despite their plausibility. According to (Tadajewski, 2008), these paradigms are incommensurable, and therefore one paradigm cannot be held as more efficient than another. On the one hand, Objectivism has been criticised for example for being ineffective in researching social science phenomenon. Despite this limitation, the fact that positivist or objective research examines reality that is independent of the research results in more independent and replicable findings (Hatch & Cunliffe, 2006). On the other hand, proponents of subjectivism suggest that the use of nominalistic ontology and its corresponding epistemology by researchers results in more explanatory success (Holden & Lynch, 2004). However, subjectivism has its limitations. Critics view its failure to substitute objectivism with an improved method as one of its main flaws (Hughes & Sharrock 1997).

Given the limitations of all the philosophical approaches, one may argue that using a research paradigm in research may not be of much value. However, the importance of ontology and epistemology in research cannot be over emphasized.

5.1.7. Justification: Why a Philosophical Underpinning is Important for a Study

The philosophical paradigm assists the researcher to chose and justified the research method followed in a study. The benefits of a philosophical approach have been identified in the literature (Holden & Lynch, 2004; Hughes & Sharrock, 1997).

- It enhances the investigator's ability by opening their minds to different perspectives. and
- Increases researcher's confidence on the suitability of the chosen methodology to the research problem which, ultimately, builds confidence in the findings of the study.

More so, incorrectly matching research methodology with the research problem may result to questionable results. The research philosophy helps a researcher in answering the important questions of, "How to research?"; "What to research?" and this further provides an answer as to "Why research?"

Following the above discussion, this study applied a positivist paradigm, which is consistent with the quantitative methodology. Despite the plausibility of using positivist perspective to this study, the literature shows that following pure positivism is practically challenging (Ates, 2008).

5.2.1 Research Design

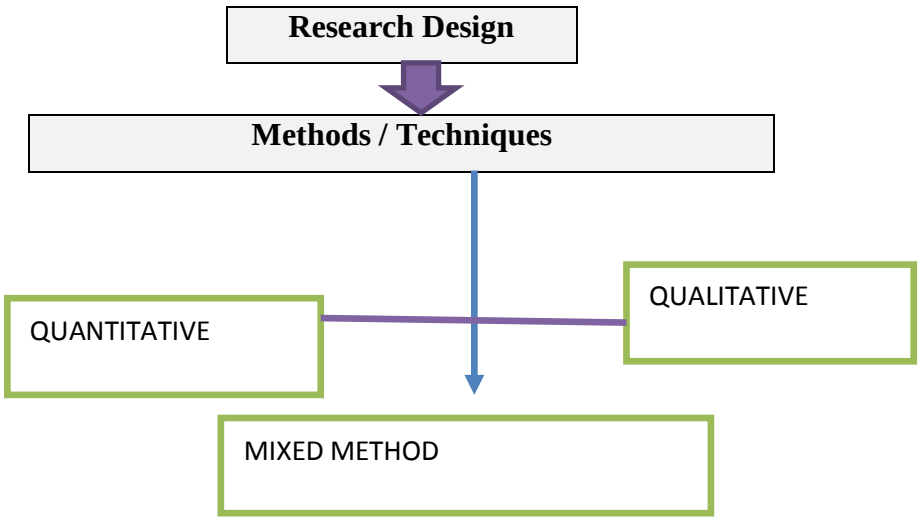
According to (Zikmund, Babin, Carr & Griffin, 2010) research design is "a master plan that specifies the methodology and processes for gathering and analysing the required information." Various researchers (Mouton, 1996; Carriger, 2000) in writing about study design holds the view that study designs are like road maps that assist the investigator to know how to go about when approaching a study problem, and a plan on how the problem will be investigated. Research design includes a conceptual structure or techniques to be followed in conducting a study. It describes the tools to be used in a study (for example, data collection tools, units of measurement, the scale of measurement together with the origin of the scale (in instances where the scale was adopted from a different study). It defines the process adopted in using the tools (i.e. how data will be gathered) and what statistical applications will be used to analyse the data (Chinomona, 2012).

Understanding how to design a research increases the value of a study by assisting to explain the basic guidelines used in the study plan. Following from this, the research design assists in answering such questions as –whther the design for the research is dependable, whether it is doable and presented logically? In this light, there is a need for both logic and common sense in fully implementing any research investigation (Carriger, 2000). Also, the design of the investigation needs to be carried out on the basis that there is a possibility to get the data in a usable and efficient manner, that there are enough unbiased interviewees to respond to the questions (Hair, Bush & Ortinau, 2003). Therefore, a study design should in line with suggestions by Hair et al. (2003), have the following:

- The process to be used to get the data from respondents
- The data collection tools to be employed
- The process of using the data collection tools
- How the collected raw data will be processed and analysed

There is need to design the study before choosing the technique to be used – for example, whether to follow the quantitative technique, to use the qualitative approach and or a mixed method (Creswell, 2003).

Figure5.5: Study Design and Methods



Source: This Study (Points taken from Creswell (2003))

The following section provides a detailed discussion of the research method that was applied in this study – the quantitative methodology.

5.2.2. Research Methods or Techniques

Techniques used for the facilitation of information and data gathering are called research methods (Easterby-Smith et al., 2004). The literature identifies three main study methods as shown in Figure 5.5. The different practices and activities required to conduct a research investigation without which the outputs might be affected. There exist the following research methods: the research experiment, testing statistics using the hypotheses, doing a case study, analysing previously collected data, participatory approach, conducting interviews with respondents, and research observation. In this thesis the researcher adopted a positivist approach, and used the quantitative study design and used SEM and SPSS for statistical testing. The next section will look at both the qualitative and quantitative study methods to illustrate why the study selected the quantitative approach.

5.2.3. Quantitative Methodology

The research problem and research questions examined in this study are quantitative, and thus the quantitative method was deemed suitable to realise the objectives of the study. Given that this study seeks to test the hypothesis, the use of a quantitative methodology is also more appropriate. This is supported by literature which shows that quantitative research design enables quantitative data evaluation of the research constructs to test whether the constructs under investigation have a valid relationship or the hypothesis need to be rejected (Hair, Money, Samouel, and Page (2007). This technique follows the following steps:

Theory ⟶ Hypothesis Testing ⟶ Confirmation / Refutation

The usefulness or applicability of quantitative research design can be proven by identifying the features attributed to both methods – i.e., quantitative and qualitative. Therefore, before elaborating on why a deductive approach was chosen over an inductive approach, it may be advantageous to first understand the differences, features, debate on the two methods as well as the strengths and weaknesses of each method.

5.2.4. Differences between Quantitative and Qualitative Research

According to (Aluko, 2006), the researcher neither is external to the object of investigation and neither influence nor participates in quantitative studies. While taking part in the study allows the investigator to get more knowledge about the status quo being investigated. Such methods as detailed or unstructured interviews, focused group discussions, documentation

reviews used in the qualitative study and on the other hand quantitative investigations employ more structured interviews, the use of surveys, observation and the analysis of quantitative data (Ghauri & Gronhaug, 2002). On the one hand, a quantitative study develops and tests the hypotheses; qualitative studies do not test hypothesis. Firstly, a qualitative study is less objective while a quantitative research is more objective. Secondly, a qualitative study is more text based, a quantitative study is more statistical based. In qualitative studies, the rigor and skill of the investigator are used to determine the extent of validity and reliability of the investigation. However, in quantitative research, the validity of measurement tools are used to ascertain the validity of the survey (Ghauri & Gronhaug, 2002). Moreso, investigator's interest, objectives of the study and how the findings will be used can also guide the choice of the choice of investigation approach (Aluko, 2006).

Table 5.2: Features of Qualitative & Quantitative Research Methods

Qualitative Research Method	Quantitative Research Method
• "All research ultimately has a qualitative grounding" – Donald Campbell. • The aim of qualitative analysis is a complete, detailed description. • Recommended during earlier phases of research projects. • Researcher may only know roughly in advance what he/she is looking for. • The design emerges as the study unfolds. • Researcher is the data gathering instrument. • Data is in the form of words, pictures or objects. • Qualitative data is more 'rich', time consuming, and less able to be generalized. • Researcher tends to become subjectively immersed in the subject matter.	• "There's no such thing as qualitative data. Everything is either 1 or 0" – Fred Kerlinger. • In quantitative research features are classified, counted, and statistical models are constructed in an attempt to explain what is observed. • Recommended during latter phases of research projects. • Researcher knows clearly in advance what he/she is looking for. • All aspects of the study are carefully designed before data is collected. • Researcher uses tools, such as questionnaires or equipment to collect numerical data. • Data is in the form of numbers and statistics. • Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail. • Researcher tends to remain objectively separated from the subject matter.

Source: Miles and Huberman (1994:40)

Table 5.3: Advantages and Disadvantages of Quantitative Research Methods

Quantitative Method	Qualitative Method
Advantages • Ability to accommodate large sample sizes; increases generalisability of results • Ability to distinguish small differences • Ease of administering and recording questions and answers • Capabilities of using advanced statistical analysis • Abilities of tapping into factors and relationships not directly measurable **Disadvantages** • Difficulty of developing accurate survey instruments • Limits to the in-depth detail of data structures • Lack of control over timeliness, and potentially low response rates • Difficulties in determining whether respondents are responding truthfully • Misinterpretations of data results and inappropriate use of data analysis procedures	**Advantages** • Data based on the participants' own categories of meaning • Useful for describing complex phenomena • Provides understanding and description of people's personal experiences of phenomena (i.e., the emic or insider's viewpoint) • Determine idiographic causation (i.e., determination of causes of a particular event) **Disadvantages** • Knowledge produced might not generalize to other people or other settings (i.e., findings might be unique to the relatively few people included in the research study). • It is difficult to make quantitative predictions. • It is more difficult to test hypotheses and theories with large participant pools. • It might have lower credibility with some administrators and commissioners of programs.

Source: (Hair et al., 2003)

Literature shows that in the use of quantitative methods, it is agreed that the investigator is viewed as external and also that the interviewees are systematically identified with the utilization of a non-biased identification criteria (Holden & Lynch, 2004). If a non-biased identification approach is used to select respondents, this will lead to the generation of factual and objective data regardless of the investigator (Creswell, 2003). Following from this, various authors (Ghauri & Gronhaug, 2002; Hair et al., 2003) have argued that quantitative

methods are more structured, more step by step and allow the investigator to generate the needed data directly from the interviewees, in a direct and straight forward manner than qualitative methods. This will result in a high chance that correct and measurable outcomes can be generated (Ghauri & Gronhaug, 2002). Quantitative analysis tools such as questionnaires are used to ensure causality, objectivity, reliability, replicability, and generalisability, (Bryman, 1984; Creswell, 2003). The next section explains why the quantitative method was chosen in this study.

5.2.4. The Rational for Using Quantitative Approach in this Investigation

Though there are limitations in all research methods including the quantitative methods, this study adopted the quantitative approach for the following reasons: It could better explain the research questions; the study problems in this investigation were quantitative. Before adopting the quantitative approach, the investigator considered the following:

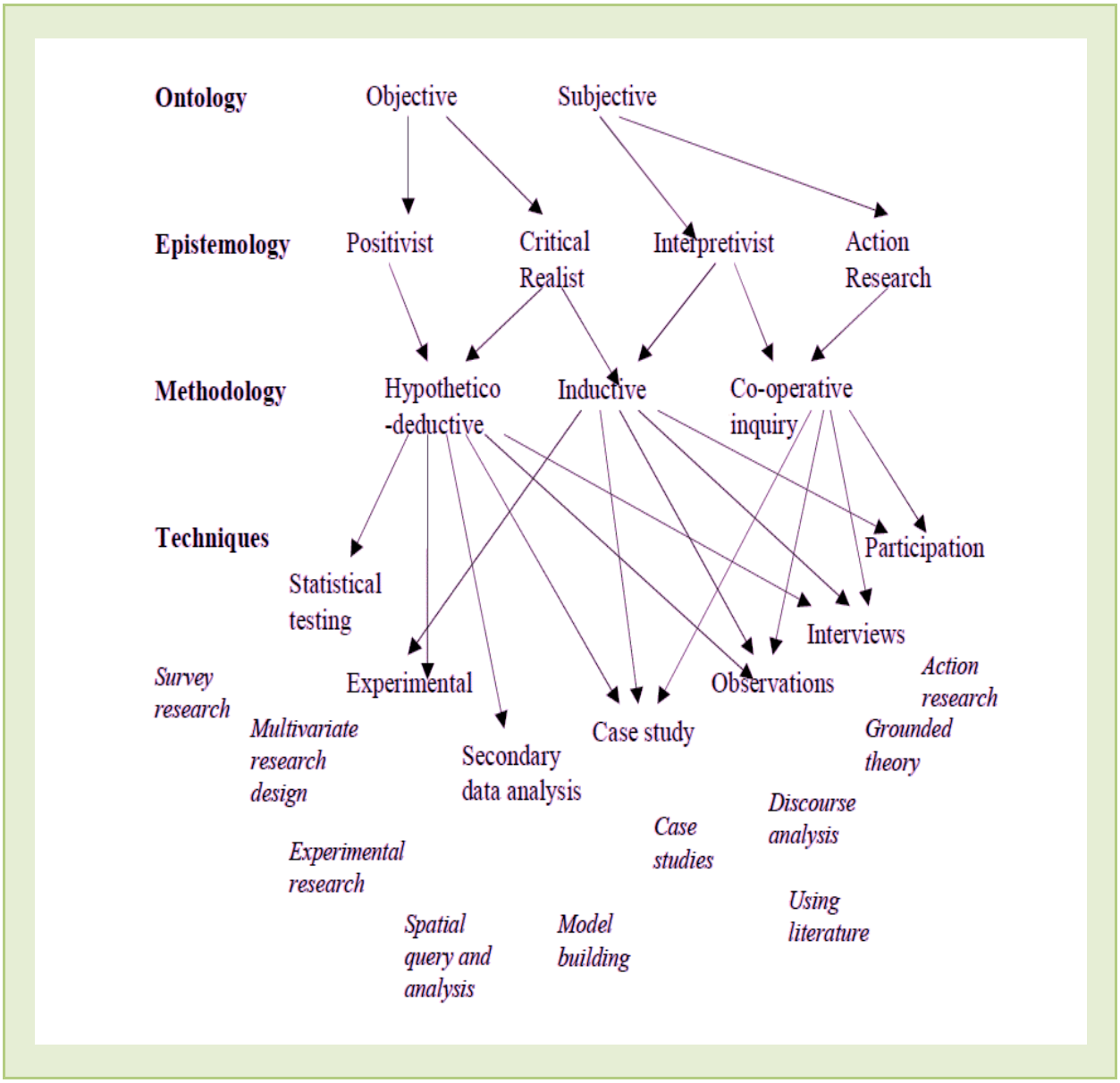
(i) Can the study be improved using another method?

(ii) Are there any facts to guide the researcher in responding to other investigators who might have another methodology for conducting the same study?

(iii) In what way is the choice of this quantitative method directly as a result of the nature of the problem under investigation, (Scacchi, 2002).

After considering these questions, the investigator adopted the quantitative methodology this study given that the research questions were quantitative and are measured on a Likert scale of 1 to 5. Further, the quantitative method allows for flexibility in data treatment and statistical analyses, comparative analyses, and replication of data gathering, to confirm the reliability of instruments used (Aluko, 2006), it was chosen based on its superiority to measure the constructs under study in this thesis as compared to other methods. A summary of the methodology followed is illustrated in Figure 5.6.

Figure 5.6: Research Design Map



Source: Beech (2005)

The research design map above provides a research scope that can be used in choosing between ontology and epistemology, the relevant methodology and appropriate techniques or methods as displayed in Figure 5.8. These basic concepts are important in enabling a research to be academically believable. Consistent with Beech (2005)'s research design map, it can be said that the current study applied an objective ontology, made use of a positivist epistemology, used a hypothetico-deductive methodology through statistical testing. Hence, a quantitative method was used through the utilisation of a survey questionnaire.

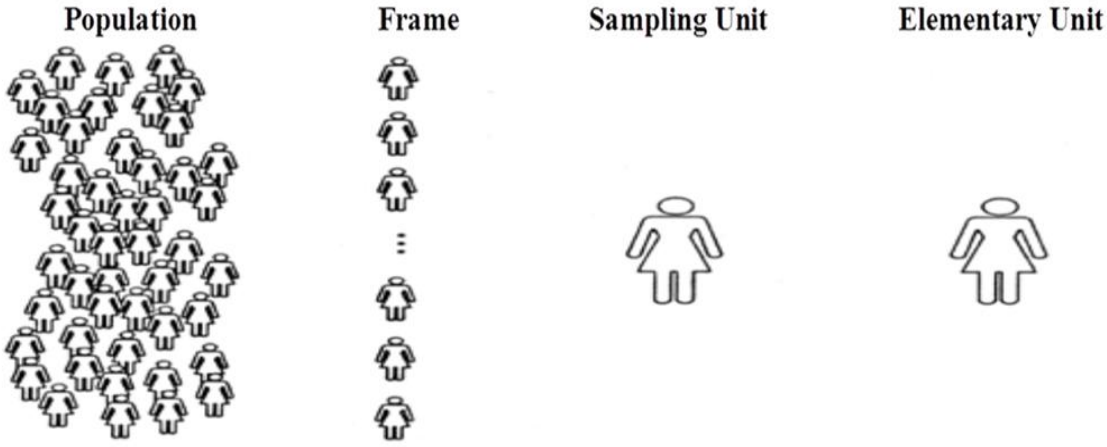
The following section further elaborates on the sampling design adopted in the current study.

5.3. Sampling Design

Sampling design is the process of selecting part of a population to carry out a study and inferences drawn from such sample to the population (Teddlie & Yu, 2007). Target population could be defined based on geographic location, profession, membership to an organisation, etc., sampling frame represents all the cases from which a sample is selected, sampling method is the approach used to select the sample- probabilistic or non-probabilistic and sample size is the total targeted number of respondents from the population (Collins, Onwuegbuzie & Jiao, 2007). Two key elements of sampling design have been identified by (Collins et al., 2007):

- Sampling method – How members of a population get chosen to be part of a sample.
- Estimator – How sample statistics are calculated. Different estimators are used for various sampling methods; this results in different formulas being used for calculating standard error.

Figure 5.7: The Effect of Sampling

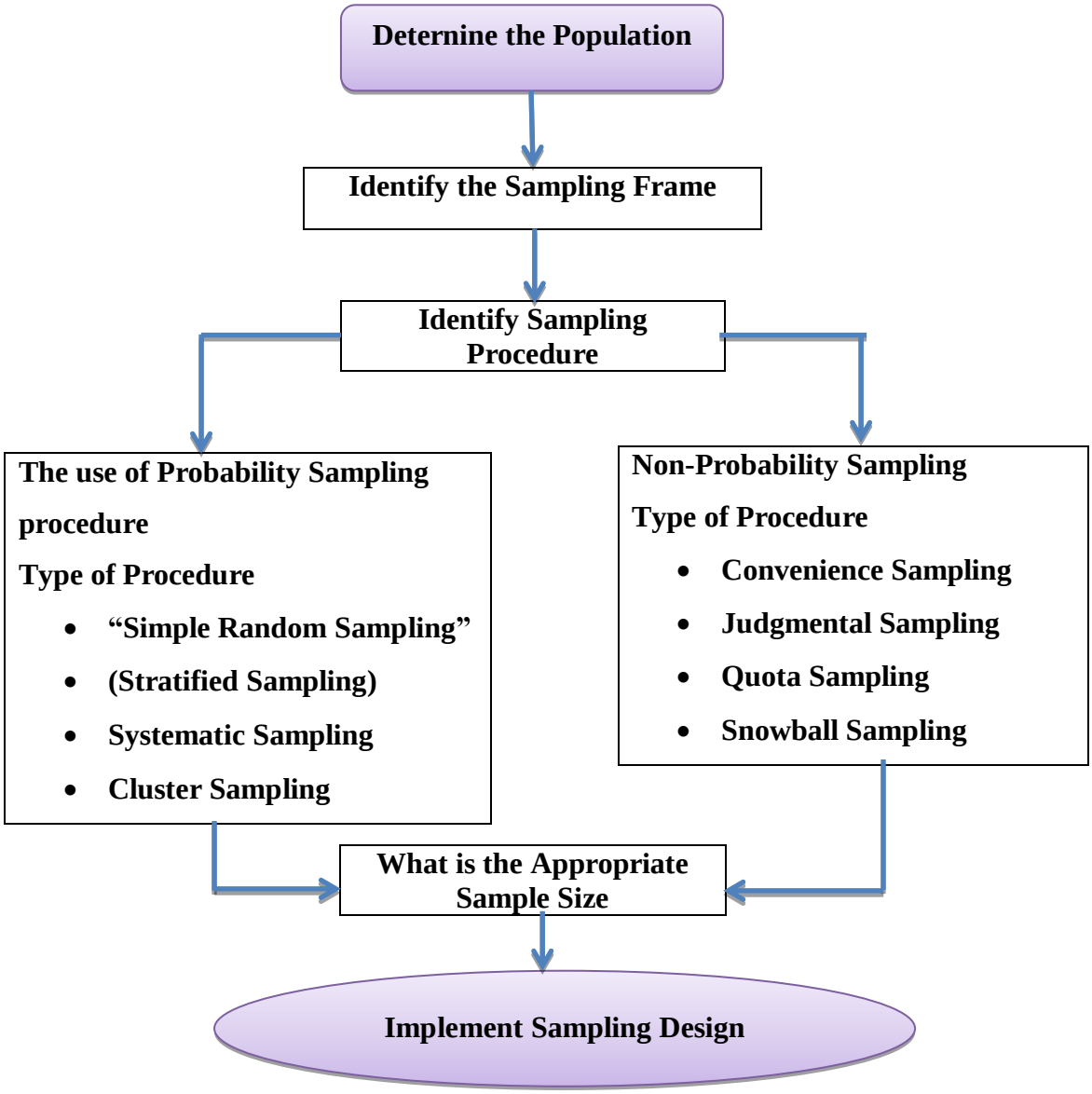


Source: Frerichs (2004)

5.3.1. Sampling Design Process

Different stages are involved in sampling design. There is the need for careful consideration at each stage before proceeding to the next level. From defining target population to selecting sample comprises six steps. The real number of steps involved depends on the type of investigation or the interests of the investigator. The steps involved in a sampling design process are illustrated in figure 5.8

Figure 5.8: Steps in Designing the Study Process



Source: Churchill & Iacobucci (2004)

Figure 5.8 above shows a research design process. The application of sampling design in this study is explained below

- Define the Target Population – The target population tells the researcher who the ideal respondents for the study are. It guides the researcher on who will be surveyed, define the characteristics of the interviewees (for example gender, age, the level of education, income level, etc.) and what must be excluded (e.g., the geographic area – people living outside Johannesburg). In this study, the target population is managers in electronis manufacturing

companies in South Africa. Manager in manufacturers of outside South Africa are excluded from the population.

- Establishing my sampling frame – At this stage, the researcher obtained a "list" of the population – i.e., We determined how to reach the sample. For this study, the sampling frame was made up of managers in manufacturers of electronics who are members of Electronics Export Council listed on the DTI website. The sampling unit is the individual companies, and respondents within the companies were managers or owners.

- Determine the Sampling Procedure – Sampling method is how the researcher derives his/her sample- it could be probabilistic or non-probabilistic. Probabilistic sampling involved giving each unit an equal known chance of being selected into the sample. In non-probabilistic sampling, sample units have an unequal chance of being selected into the sample. In this study, the probabilistic sampling procedure was followed, and random sampling applied to the sampling frame of electronics manufacturers.

- Determine Sample Size – The sample size is the portion of the population that is appropriate to be used for research analysis whose results can be inferred to the entire population. Sample size calculators can be utilized for appropriate sample size or other scientific methods. In this study, a scientific calculator was used to determine the sample size of n=300 from the large population of electronics manufacturers of over 1000.

- Implement the Sampling Design – After all other preceding steps are in place, the investigator then implements the chosen study design. In this study, the sampling design was implemented, and the sample of n=300 selected randomly from the sample frame of electronics manufacturers in South Africa.

In sampling designs, it is important that the selected sampling design technique should assist the investor to reach the interviewees and collect the required data and it should assist in solving the research question under investigation. Without having this right, the efforts of the investigator might be wasted, as the outcomes of the study might not be usable (Churchill & Iacobucci, 2004).

5.3.2. Population under Study

A population under study (denoted N) refers to all the elements- individuals or objects that qualify to be included in the universe under study (Burns & Grove, 2005). All persons or objects with characteristics of interests to the researcher are included in the population (Chinomona, 2012). Defining the population is the first step in the sampling procedure. In this study, the population has been defined to include all electronic manufacturers in South Africa. Therefore, firms that manufacture outside South Africa would not qualify to be included in the study. False results can be generated in instances where the population is not appropriately defined (Levy & Lemeshow, 2008).

5.3.3. The Frame used in Determining the Sample in this Study

Various authors (Hair et al., 2007: Pedhazur & Schmelkin, 1991; Yang, Wang & Su, 2006) agree that the complete and comprehensive list of sampling units or elements from which the sample is drawn is called the sampling frame. A sampling frame includes individuals or subjects used in a study, family groups, organisations or the research environment. In statistical terms, it can be defined as source material or a device from which a sample is drawn (Chinomona, 2012). The type of research questions and research objectives determines the type of sampling frame used. The sampling frame presents the whole population under study (Fricker, 2011). In this study, deciding on the sampling frame was guided by the following questions (Hair et al., 2003):

- Whether there was a complete list of electronic manufacturers in South Africa?
- Whether it was easy to determine the sampling units of the respondents from the list of electronic manufacturers in South Africa?

There is further need for a researcher to minimise sampling error. A sampling error occurs when there is the exclusion of specific sampling elements from the population or inclusion of wrongful items in the sampling frame (Hair et al., 2007; Palys, 1997). Within this context, in determining the sampling frame in this study, the investigator excluded manufacturers outside South Africa from the sampling frame.

5.3.4. Sampling Method

The tool used to select members of a study population into the sample or respondents is called sampling method (Ghauri & Gronhaug, 2002). It is a scientific process of choosing study units from a target research population. Sampling bias is reduced when the appropriate sampling method is used. According to (Grafstrom, 2010), it is required that there must be ease of use, efficiency, and effectiveness of a sampling method to be usable. There are two primary sampling methods: probability and non-probability sampling methods.Budget constraints need to be considered when choosing a sampling method. The researcher used an electronic questionnaire to collect the data after contacting the respondents about the study on the phone. Emails and phone calls were made to follow up the respondents who did not respond within a week. Data was collecting and analysed by the researcher alone with guidance from the supervisor alone.

5.3.5. The Justification for the Use of Sampling: Why Sample?

This section explains and justifies why a sample and not the whole population was used for this study. Given the size of the population of thousands of electronic manufacturing companies in South Africa, it would have been very expensive and time-consuming to reach out to all these companies to conduct this study. This is in line with previous research (Schreuder, Ernst & Ramirez-Maldanado, 2004). Further, a representative sample of electronics manufacturing companies in South Africa, used in this study will deliver results similar to those derived from the entire population. Therefore, it might not be necessary to conduct the study on the whole population as scientific evidence point to the fact that following the right sampling procedure on the population and minimizing sampling error generates samples that result in statistically robust results (Schreuder et al., 2004).The sampling method used in this study was the probability sampling method, and it is discussed below.

5.3.6. Probability Sampling

In probability sampling, all members of a study group or population have an equal known chance of being included in the sample. There is no influence on the selection of one unit on the selection of another. Selection bias is eliminated in probability sampling and thus ensuring that the sample is a fair representation of the population under study. Randomisation reduces bias in probability sampling. In this investigation, the researcher adopted the

probability sampling method as a result of its superiority over other methods under consideration given the study objectives and data type. Using probability sampling through randomisation in this study eliminated subjectivity in selecting the sample, and all electronics manufacturing companies in the sample frame had equal chances of being included in the sample (Cohen et al., 2007).

5.3.7. Sample Description

According to Smith (2011), the number of observations used to compute estimates on a given population is called a sample. For a researcher to be able to draw inferences about the population based on the sample, there is the need for the sample to be representative (Ghauri & Gronhaug, 2002). As the generalisation of study findings to other contexts is the primary motivation behind doing a survey research, Singh (1986) suggested that a good sample must have two key features:

- representativeness
- adequacy

In this study, the selected sample was taken out from the whole sampling frame – manufacturers of electronics in South Africa.

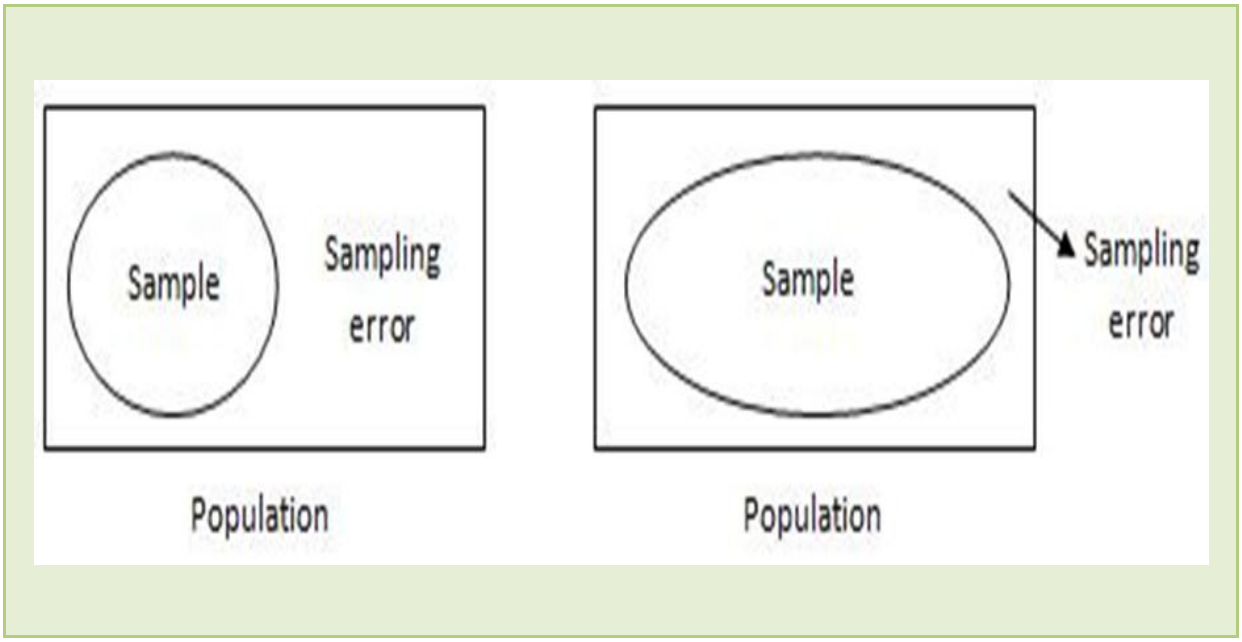
5.3.8. How Sample Size was Determined in this Study

According to Smith (2004), sample size (n), is the selected number of units of a given population under study used by the investigator to study the population and calculate estimates based on the sample. How precise a study is, depends on the sample size. The probability of a sampling error can be increased by a small sample size, while inefficiencies increase with considerable sample size, though in instances of a random sample large sample size may improve generalisability of results (Yang et al., 2006). Using samples is a cost efficient and timely manner of researching a population without surveying the entire population. According to (Chinomona, 2012), there are no fixed rules on right sample size, but the sample size must be scientifically determined, and it must represent the population. In this study, the scientific calculator was used to determine the sample size of 300 respondents from a population of 1000 manufacturers of electronics manufactures in South Africa through random sampling. The objectives of this study can be met using such a sampling frame.

5.3.9. Errors in Sampling

When the sample does not represent the actual characteristics of the population is called a sampling error. Given that only the sample in studied- sampling errors will result in errors or false conclusions about the population. Therefore, there is a need to be careful to minimise sampling error. In this study, an appropriate sample size was taken, and further steps to reduce sampling error through randomisation were carried out.

Figure5.9: Sampling Error Illustration



Source: https://explorable.com/sampling-error

There mainly three types of errors in sampling are explained below:

Sampling Frame Error – This occurs when potential respondents are eliminated from the sample frame (Cox& Enis, 1972). By removing manufacturers who are not members of industry associations this study might have been exposed to sampling frame error. This is because though a majority of manufacturers belong the industry associations, there are some manufacturers who are not members given that belonging to industry associations is voluntary.

Random Sampling Error –the larger the sample size, the smaller that random sampling error (Cox, & Enis, 1972). By using a large sample of 300 respondents, the random sampling error was decreased in this study

Systematic or Non-Random Sampling Error – These are errors in research not directly resulting from the sample. Such errors can occur at every stage of study from preparation stage, field work stage as well as computation and tabulation stage. Such errors include non-response error, response error along with data capturing/processing errors (Bellenger & Greenberg, 1978; Cox & Enis, 1972). Therefore, in line with Cox and Enis (1972), these errors are due to a lack of proper specification of the study domain and scope, imperfect coverage of the sample representing the population, faulty data collection methods and tabulation errors.

Errors stemming from non-response – These errors are due to lack of respondents or respondents' refusal to participate. This may create some bias in the estimates.

Response errors – These errors stem from an incorrect presentation of questions, respondents' failure to understand the question and reluctance or failure to answer appropriately.

Errors in capturing or processing – These are mistakes that happen during the data processing stage, e.g. errors in coding (e.g., failure to properly code reverse-coded questions) or they occur during the data entry process. Checks may help in correcting or fixing such mistakes.

Non-sampling errors are hard or even impossible to estimate in contrast to sampling errors, which can be calculated based on the survey data (Cox & Enis, 1972). Therefore, prominence was laid on controlling for such errors, instead of on specifying their size in the data. In this study, while sampling errors were minimised through scientific processes in sampling, non-sampling errors were minimised, by due care in the data collection process and ensuring that data capturing was checked by the supervisor.

5.4. Variables and their Equivalent Instruments

A measurement instrument is a measure that integrates values of many items that measure the construct (also referred to as questions, events indicators, observations) into a composite measure to gauge a fundamental continuum (Chinomona, 2012). The measurement

instruments for the current study were operationalised in line with earlier studies relevant to it. However, minor revisions or adaptations were made to ensure that the measurement instruments fitted the context and purpose of this study. The measuring instruments for all the research variables comprised of only close-ended questions. The descriptive section had an option "Other" and respondents were expected to specify – e.g. another language, other manufacturing subsector. The subsequent section provides a discussion on how these instruments were presented in the main survey questionnaire for this study.

5. 4.1. Exogenous (Independent or Predictor) Variables

Variable: Firm Commitment to Green – Fifteen items were used to measure this variable. Examples of some of these measurement instruments include:

- Our company has an environmental plan;
- Our company has a well-developed environment, health, and safety unit, environmental management board, or environmental committee;

Variable: Green marketing Capability – seventeen items were used to measure this variable. Examples of some of these measurement instruments include:

- Our company implements green advertising activities.
- The Manufacturing process adopted by my organisationensures the reduction of emission of hazardous substances or wastes.

Variable: Green Relationship learning – Four items were used to measure this variable. Examples of some of these measurement instruments include:

- Our company learns from its relevant partners to change its views on environmental trends in technology related to its business
- Our organisation together with other players comes up with joint teams to have conversations on environmental matters

Variable: Green Human Capital Investment – Again, five items were used to measure this variable. Examples of some of these measurement instruments include:

- In our company, green teams are being setup to tackle environmental problems

- In our company employees are actively involved in the process of determining environmental goals.

5.4.2. Endogenous (Dependent or Outcome) Variable

There were three outcome variables: green corporate social investments (GCSI), firm financial performance, and firm marketing performance. The different outcome variables are discussed below.

Variable: Firm Financial Performance – This variable was evaluated using four instruments. These measurement tools included:

- The profit margin in our company is increasing.
- The return on assets in our business increasing.

Variable: Firm Marketing Performance – This variable was test evaluated using five instruments. These measurement tools included:

- The rate of market share in our company is increasing.
- The degree of customer satisfaction in our company is increasing.

Variable: Green Corporate Social Investment (GCSI) – This variable was sub divided into three sub-constructs: Environmental, economic and social dimensions and tested through the use of 27 instruments. Examples of some of these measurement instruments include:

- We support the employment of disabled people and people at risk of social exclusion.
- We are particularly concerned to offer high-quality products and services to our customers.

Appendix II presents the measurement instruments used in this investigation.

5.5. Questionnaire Design

Well designed questionnaires are required for any study to realise its objectives. However, there is a lack of coherent guidance on the development of flawless questionnaires in marketing research. Following from this limitation, the investigator in designing questionnaires in this study had the following in mind:

• Required Information – It was important that questionnaire captured information types needed in this study to answer the research questions.

• Questions Types – whether to use close or open ended questions, or both were driven by the research questions.

• Question Format – It was important to keep the structure simple and to ensure that the relevant information could be captured entirely.

In this study, questionnaires were structured to capture manufacturer's views on three main sub sections: predictor, mediation and outcome variables. On predictor questions, we captured manufacturer's views on their firm's commitment to green, on mediation we asked questions relating to green marketing commitment, green relationship learning, and green human capital investment. In this study closed, ended questions were used.

5.5.1. The Choice of Closed-Ended Questions in this study

Before deciding on whether to use open- or closed-ended questions, the researcher thought about the goals of the current study and also considered the rule of thumb, as suggested by Converse and Presser (1986) that:

"If a researcher knows the actual information required to respond to a question – and needs one basis of reference among respondents, closed-ended responses are preferred. If however, a researcher is not sure what the range of possible responses to an issue, and anticipates to conduct a preliminary exploration of a topic, open-ended questions will work better".

According to Bradburn et al. (2004), respondents are more than willing to provide sensitive data when a survey questionnaire uses open-ended responses. Since the current study did not have any sensitive questions, closed-ended questions were thus preferred. When designing the survey, i.e., when making modifications to the adapted questionnaire, the researcher checked whether there was no presence of the following:

i) Leading Questions – The researcher ensured that all the survey questions did not lead respondents to a favoured response. Doing so, i.e., having leading questions was to defeat the whole purpose of conducting the research.

Ii) Double Barreled Questions – The researcher also ensured that each question addressed only one issue. Having double barreled questions, for example, questions with "and," is likely

to create ambiguity as respondents could agree with the first part of the question, but disagree or be unsure of the second part. Hence, all questions were checked to ensure that they provided a clear distinction and that one issue was addressed at the same time.

Iii) Vague or Confusing Questions – All the questions were written clearly, and they were very direct. Wherever respondents found, the questions to be 'unclear,' the researcher was available to provide clarity whenever necessary.

Iv) Personal or Invasive Questions – Questions about personal information, for example, personal income, was phrased in a way that was non-intrusive. In the case of questions on income levels, broad categories of responses were provided from which respondents were expected to choose a specific category. This made participants more comfortable reporting their income in a category form (e.g., R11000 – R20000) instead of the exact income figure.

Following the completion of the questionnaire, it was doubled checked by the investigator for ambiguity or any other errors. The questionnaire also made provision for demographic data on the size of the businesses, the age of respondent, manufacturing sector, the number of years firm was in business among others.

Using a Likert scale in this study enhanced the structuringof the response options. A 5-point Likert scale Likert Scale (with 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral = 3; 4 = Agree and 5 = Strongly Agree) was used in this study as this also allowed for easy coding of the data.

5.5.2. The Format of the Questionnaire

The arrangement of a questionnaire tends to influence how respondents find it easy to read, comprehend and respond to every single question asked (Colosi, 2006). For this reason, the format of the questionnaire heavily impacts the quality of the collected data. It has been suggested that if there is sufficient time, the instrument must be piloted in advance of carrying out the main study to recognise some problem areas in both the content and the format of the inquiry form (Colosi, 2006). The following tips, as suggested by Schwarz and Oyserman (2001), were applied to the current study:

i) The outside cover had an informative outline or clear introduction on the research topic, drive behind the study, and it also explained how the collected data was to be used (i.e., for academic purpose only). This transitory introduction assured respondents that their private

information was to remain confidential and all responses and it also guaranteed the anonymity of responses.

Ii) After the cover page, the second page sought written consent from respondents. The respondents were asked to sign with an "X" to show that they understood the aims of the research and therefore consented to participate in the study.

Iii) All the instructions were framed in bolded italics. This was done to differentiate instructions from questions.

Iv) The questionnaire was made up of different sub- sections with the first section contained questions relating to demographic information; the second section contained the study constructs or variables while the last section was about outcome variables.

V) There was no need to place descriptive definitions or texts in a parenthesis as questions were fairly clear and no 'big' words were used. Besides, the researcher was available to answer any questions from respondents during the data collection process.

Vi) All the instruments covered the most paramount issues of interest. The first instruments had more general questions. In the middle and towards the end of each construct, questions with greater specificity were asked.

Vii) The flow of the questions was kept, with each instrument being sound, and making it easy to follow from each instrument to the next.

The inquiry form for the current study guaranteed that every single question contained within the questionnaire gathered the necessary data as suggested by Taylor-Powell (1998). Overall, the researcher thought about the conceivable disparity in the literacy level of respondents as well as any likely language barriers that were bound to affect the effective administering of the survey questionnaire. Given that the respondents were managers, the level of education was mostly post secondary and thus understanding the questionnaire was not an issue. These considerations were in line with (Colosi, 2006) who suggested that a good survey design should pay attention to the respondents answering the questions (e.g., their literacy level, any language barriers, among other factors), together with the aim of the questions (i.e., outcome data and/or the demographics of respondents). The researcher also realised the importance of having a questionnaire that had a good structure. Hence, the questionnaire was clearly structured and the directives were, likewise, easy to follow. The clarity of each survey

question was to determine the quality of the collected data and therefore the researcher ensured that all questions were clear and on point.

5.6. The Process Used to Collect Data in this Study

Data collection process is a presentation on how the data was gathered from the study units following a predefined method to ensure that the research questions are answered by the investigator. One can conclude that the process of collecting useful data from the right sample of a study population is called data collection. The process on how data was collected from the electronics manufacturing sector in this study is explained in the following section.

5.6.1. How Proper and Accurate Data was Ensured in this Study

It was important in this study that the correct data was collected. Various steps were taken to ensure that the right data was collected before the data collection process began. It was important to note that dealing with humans in the manufacturing sector required of the investigator to be friendly, patient, humble, and polite to develop a good relationship with the interviewees. It was also important for the investigator to verbally sure the interviewees that no personal information was to be published. Various steps were followed before the questionnaires were distributed. These included:

- Senior Expert Help – The investigator sort help at all stages of developing the survey instruments from the supervisor who ensured that all the necessary information was presented. Following the acceptance of the data collection instrument by the supervisor and the Wits University ethics Committee, the researcher started the data gathering process.

- Protocol Requirements – The researcher engaged the industry association to get permission and access to the membership. The secretary of the industry association assisted to distribute the questionnaire to the membership following the approval of management. The respondents were asked to respond directly to the researcher via student email.

- Reliability of Instruments – It was important that there was a common understanding and interpretation of the study instruments by the respondents at all times during the study. The simplification of the questionnaire and reducing any ambiguity ensured reliability.

- Validity – Following a number of evaluations before actual data gathering, the investigator became confident that the measurement instrument will generate data on what they set out to measure. The collected information confirmed this as it was based on the

questions asked. Adopting previously validated data collection tools also enhanced the validity of the instruments used in this study.

5.7. How Respondents Were Chosen to Participate in the Study

It was made known to respondents that it was voluntary for them to take part in this study. A random sample from the membership database was used to select respondents to ensure a representative sample. The problem experienced with gathering data was the fact that the month of October and November are busy months for the industry as indicated by management and thus many respondents were unavailable to respond to the study. Most of those who responded took an average of a week to respond. Follow up emails were sent to respondents to encourage response

For different manufacturers of electronics in South Africa, data was collected on various suitable days depending on their schedules. The data gathering process started on the 2nd of October 2016 and ended on the 22nd of January 2017 over a four months period. Moreover, it was the researcher's responsibility to distribute and collect all survey questionnaires.

5.8. Ethical Considerations and Ramifications

Firstly, it became necessary for the researcher to consider whether the study had any inherent ethical implications, for example – is the study controversial or sensitive? As a result, before embarking on a study topic, the researcher addressed some specific ethical issues, and a process of getting the proposal and data collection instruments were submitted for ethical review by the University ethics review committee. The following section describes the process that was followed for ethical review for this study.

5.8.1. Research Ethics Review at Wits University

Given that this study involves humans, it was required that the survey is vetted by the University's ethics review process. This was done to ensure that an ethical process is followed in carrying out the research and there is minimised harm to respondents. After the necessary documents were filled and signed by both the researcher and supervisor, the researcher consulted the Human Ethics Research Ethics Committee (Non-Medical) at the above University. The research proposal was evaluated and considered to have minimal or no risk to its participants. This merely implied that there was no need for an in-depth ethical review as there were no concerns, particularly with regards to sensitive issues.

• Ethical Approval– No data was collected before an ethical clearance certificate was granted by the above committee. This certificate indicated that the investigator could carry on with the study and it showed that the minimum ethical requirements were met. The ethical guidelines and codes were strictly followed, particularly during the data collection process, to be aligned with the moral code of the university.

The researcher obtained the Ethics Clearance certificate on the 25th of September 2016 from the designated Ethics Committee at Wits University. A copy of the ethics certificate used in this study is attached in Appendix II below.

5.9. Reliability and Validity

Measurement instruments need to be evaluated for their reliability and validity to correctly measure the variables under investigation. The ability of an instrument to produce consistent results in its measurement is called reliability.Validity, on the other hand, examines whether the tools measure what it sets out to measure (Tavakol & Dennick, 2011). There is a close link between validity and reliability. For example, an instrument cannot be valid if it is not reliable. Homogeneity in a sample can be measured using internal consistency (Cortina, 1993). According to the theory of reliability, 'Unidimensionality exists in a sample of test items' (Miller, 1995). Violating this assumption results in a major underestimation of reliability and the resulting α may fail to confirm the unidimensionality of the sample items (Cortina, 1993).

In this study, a confirmatory factor analysis (CFA), was carried out to check the composite reliability (CR), and validity (Average Variance Extracted (AVE) through the computation of both convergent and discriminant analysis together with the model fit for the multi-variables measured. This was consistent with the two-step procedure proposed by various authors (Anderson and Gerbing, 1988; Byrne, 2001; Jöreskog and Sörbomin, 1993). The following section discusses the processes followed to compute the Cronbach's (α) values and composite reliability (CR) values, and how the validity of the measurement instruments was calculated through the AVE values.

5.9.1. Reliability: Cronbach's Alpha Analysis

According to (Kalof, Dan & Dietz, 2008) getting the same findings from repeated application of the study data implies reliability or consistency of the data. Traditionally, Cronbach's α has been used as an index of reliability. Chronbach's alpha checks the possibility the

methodology used to conduct the measurement of the research constructs is replicable when the measurement is repeated (Cronbach, 1951). According to (Tavakol & Dennick, 2011), internal consistency is realised when most questions in a section of a questionnaire measure the same construct and thus are linked and inter-related. Before a test is carried out for research purposes, there is need to validate internal consistency. Literature (for example, Jöreskog & Sörbom, 1993) shows that the value of Cronbach's α, like the CR value, is expressed as a value between 0 and 1.

5.9.2. Effective Use of Cronbach's α

There is growing criticism on the limited understanding and inappropriate use of alpha in the literature (Cortina, 1993; Nunnally& Bernstein, 1994; Schmitt, 1996). Following from this, (Tavakol & Dennick, 2011), explained that the limited understand and appropriate use of alpha has resulted in frequent uncritical interpretation or reports of alpha. Such incorrect use of alpha may lead to reliable scales being unjustly rejected (Tavakol & Dennick, 2011). In this research, the investtigator endeavoured to get a clearer understanding of these concepts related to internal consistency, Unidimensionality, and homogeneity to overcome such challenges and improve the use of alpha in the study. According to (Tavakol & Dennick, 2011), a unidimensional measure is that whose items measure only a single unobserved construct. Nevertheless, a high alpha value is a necessary but not sufficient condition for unidimensionality.

Alph takes two primary forms: the standard alpha and the standardised alpha. This study focused on using the normal alpha values. The standard alpha values in this study were computed by bringing together the different units measuring the same construct to develop one alpha score each construct (Cronbach 1951). Various authors agree that 0.06 alpha value for all the constructs in a study is required for an investigator to conclude on good reliability measure (e.g. Kline, 2000; Nunnally, 1967), agree on the value of alpha to exceed 0.06 for there to be a good reliable measure. The following section presents some of the acceptable interpretation of alpha values:

- Firstly, when $\alpha \geq 0.9$ Very good, however, excellent alpha values are not necessarily desireable, this is because redundant scale questions can result in alpha values greater than 0.9 (Tavakol & Dennick, 2011). This led to (Tavakol & Dennick, 2011). This led to, and a maximum α value of 0.9 has been suggested (Streiner, 2003) recommending a maximum α value of 0.9.

- $0.7 \leq \alpha < 0.9$ = Good
- $0.6 \leq \alpha < 0.7$ = Fairly good
- $0.5 \leq \alpha < 0.6$ = Weak
- $\alpha < 0.5$ = Not acceptable

5 .9.3. Th Use of Composite Reliability in This Study

The sum of the actual variance scores for one construct is called Composite reliability (CR). Composite Reliability represents how the different main elements account for the variance score of a construct (Bacon, Sauer & Young,1995). Given that Chronbach's alpha is an insufficient measure of reliability, CR is a suitable alternative estimate for the reliability of a scale. This is supported by the fact that Cronbach (2004) accepted the assessment of a downward bias in the alpha coefficient given that "a small mathematical detail that causes the alpha coefficient to run a trifle lower than the desired value." The calculation of CR values is carried out during Structural Equation Modeling (SEM). In this light, this study will use SEM to calculate composite reliability. A variance in a construct that is not explained by its measurement error indicates the CR of the construct (Miller, 1995).

5.9.4. Why Composite Reliability was Preferred to Chronbach's Alpha in this Study

Using the SEM methodology to estimate the reliability of the scale used to determine the constructs is considered plausible because it generates better and usually larger CR values in comparison to the values generated by Chronbach's alpha. This is so given that SEM allows the investigator to vary the standardized regression weights while factor loadings associated with each unit of the indicator under the construct is constrained to be identical (Peterson & Kim, 2012). Therefore, SEM has the ability to test empirically and bypass many of the theoretical assumptions of the α coefficient (Raykov, 2001). Following from this comparison, this study selected CR in line with (Peterson, and Kim (2012). These authors found out that CR values generate better-larger values of CR than the α coefficient for studies carried out under the same research environment. Although CR values have been found to be larger and better than the Cronbach Alpha values, Peterson and Kim (2012) warned that this should be interpreted always that α coefficients largely underestimate the actual value of reliability in comparison to CR.

In this thesis, the investigator computed both the Chronbach's alpha values and the CR values for each construct. The process involved using the factor loadings from the default model to calculate the CR values with the utilization of the mathematical expression below as suggested by Fornell and Larcker (1981):$CR\eta = (\Sigma\lambda yi)^2 / [(\Sigma\lambda yi)^2 + (\Sigma\varepsilon i)]$

Where $CR\eta$ = Composite reliability,

$(\Sigma\lambda yi)^2$ = Square of the sum of the standardized regression weights,

$(\Sigma\varepsilon i)$ = Sum of error variances.

According to (Hair et al., 1998), the least recommended limit for CR values should be at least 0.70. CR values of equal to or greater than 0.70 are in line with recommendations by (Hulland, 1999) who suggested all constructs should have CR values greater than 0.7 for the constructs to have an acceptable reliability and internal consistency for their measures. None the less, there are suggestions for an even lower CR value of 0.6 for all constructs for there to be internal consistency (Tseng, Dornye, and Schmitt, 2006). Therefore, this research after careful consideration of all the recommended CR values concluded that CR values need to be greater than or equal to 0.6 for there to be internal consistency for the instruments used to measure the constructs.

5.9.5. Checking Validity

Convergent and discriminant validity in this study was verified using the measurement model. According to Hair et al. (1998), validity is the extent to which each construct is adequately estimated and measures what it set out to measure. In this thesis, attention was focused on two kinds of validity –convergent validity and discriminant validity. Paying attention to discriminant validity enables the investigator to guarantee the distinctiveness of the measurement instruments. Convergent validity, on the other hand, helped the researcher to establish that the constructs converge with each other.

- Convergent validity measures the extent to which the measure of a construct is correlated with other measures of the same construct, i.e., ≥ 0.5 (Fornell & Larcker, 1981). The measurement items of the construct were theoretically estimated to show a link (i.e. ultimately, they should correlate highly) so that all of them are deemed to measure the same construct (Anderson & Gerbing, 1988).
- According to (Hair et al., 1998) when each of the measurement instruments differentiates the construct being studied, then there is discriminant validity. Every construct has to be

distinct, and there should exist no multicollinearity between the constructs under investigation. Accordingly, a correlation ≥ 0.85 means there is poor discriminant validity in SEM and this may be an indication severe multi-collinearity.

5.9.6. Convergent Validity

Corrected construct to total correlation was used to determine whether there was convergent validity in the constructs under investigation. When the constructs are divergent or not converging well with the others, there will be a low construct-to-total correlation value. Construct to total correlation values > 0.5 are preferred. Therefore, the above can be summarised as follows:

Corrected construct-to-total correlation (> 0.5) = Convergent validity

Alternatively, Chin (1998) suggested an alternative approach to estimate convergent validity. According to this method, when all the standardized regression weights of the same construct are more than 0.7, then there is convergent validity. Furthermore, to justify the existence of convergent validity, AVE must be at least 0.5, and CR must be greater than 0.7 for all constructs of a measurement model.

Ave ranges between 0 and 1, and the estimated value represents the ratio of the total variance resulting from the unobserved construct. All constructs must have an AVE of greater than or equal to 0.5 (Fornell and Larcker, 1981; Hair et al., 1998; Dillon and Goldstein, 1984). Though there is an agreement among various authors for an AVE of greater 0.5 to be the established limit, some authors have suggested AVA values of 0.4 to be marginally acceptable (Fraering and Minor, 2006). Following from this, in this thesis, AVE values of at least 0.4 were considered acceptable. Given that AVE takes into account the effect of the measurement error, it offers a more stringent valuation. The following process and formula were used in the computation of AVE in this thesis in line with (Fornell and Larcker, 1981):

$$V\eta=\Sigma\lambda yi^2/(\Sigma\lambda yi^2+\Sigma\varepsilon i)$$

where:

$V\eta$ = Average Variance Extracted (AVE),

$\Sigma\lambda yi^2$ = Sum of the squared factor loadings,

$\Sigma\varepsilon i$ = Sum of error variances.

5.9.7. Discriminant Validity – the extent to which a latent variable differentiates 'itself' from other unobserved variables is called discriminant validity. In other words, a latent

variable should be able to account for more variance in the observed variables linked to it (Fornell & Larcker, 1981). To conduct latent variable analysis, it is important to use discriminant analysis (Bollen, 1989). Discriminant validity assists investigators to assess whether results that validate a structural path is real or is as a result of statistical incongruities. Without establishing discriminant validity, the constructs and individual indicators become questionable. Further, the absence of discriminant validity may be an indication that the measurement scale used in the research may function incorrectly and may lead to the investigator making incorrect findings. Thus, there is a great need for discriminant validity in academic research such as this study on the relationship between firm commitment to green, green marketing capability, green relationship learning, green human capital investment and firm performance.

- The Measurement of Discriminant Validity– "Discriminant validity is assessed by comparing the shared variance (squared correlation) between each pair of constructs against the average of the AVEs for these two constructs" (Bove, Pervan, Beatty & Shiu, 2009). This correlation is viewed as a factor loading. According to (Hair et al., 1998) Composite Reliability (CR) and Average Variance Extracted (AVE) are linked because CR measures the degree to which a set of unobserved variables share in their valuation of a construct and AVE is the amount of shared variance among unobserved construct indicators. In this study, to check whether discriminant validity existed, the correlation matrix was used. Following this approach, the correlation between the construct has to be low with correlation values of 0.85 or higher considered high and would be an indication of a problem of multi-collinearity.

The statistical method used for data analysis in this study and the software package used will be discussed in the next section.

5.10. Computation of Demographic and General Information on the Study Constructs

The Statistical Package for Social Sciences (SPSS) allows ordinary researchers to carry out their own analysis (Nie, Bent & Hull, 1970).

SPSS has the capability to do among others the following statistical analysis:

1. Descriptive statistics these include frequency tables, cross tabulations, explore various descriptive ratios.
2. Bivariate statistics including means, t-test, ANOVA Correlations and non-parametric tests.

3. Prediction for numeric outcomes such as regression analysis.
4. Predictions for identifying groups such as factor analysis, cluster analysis (two-step, K-means, hierarchical and discriminant factor analysis.

SPSS has the capability for easy analysis with a drop-down menu. However, analysis can also be done using coding in SPSS. The fact that SPSS has an easy command drop down menu enables SPSS to do easy analysis, simplify repeatitive tasks and can handle complex data analysis.

The Statistical Package for the Social Sciences (SPSS 24), a Microsoft Windows based program was used for entry and analysis of the data and the output of this was the creation of figures and tables (Landau & Everitt, 2004). Th distinctive characteristic of the SPSS software is its powerful computational ability, user-friendly data-management and statistical-analysis system that generates both tables and charts. It does not require any expert coding knowledge as it has an inbuilt user-friendly click through dialog boxes and descriptive menus (Landau & Everitt, 2004). Another added advantage of SPSS is the ability for data to be imputed from almost any source or data file into SPSS. SPSS also has the capability to generate basic statistical tables, plots, charts, trends and also conducts a sophisticated analysis. In this study, the investigator used SPSS Statistics Version 24 for descriptive analysis, testing for mediation, ANOVA and Chronbach's alpha.

5.11. Structural Equation Modelling: Definition of SEM

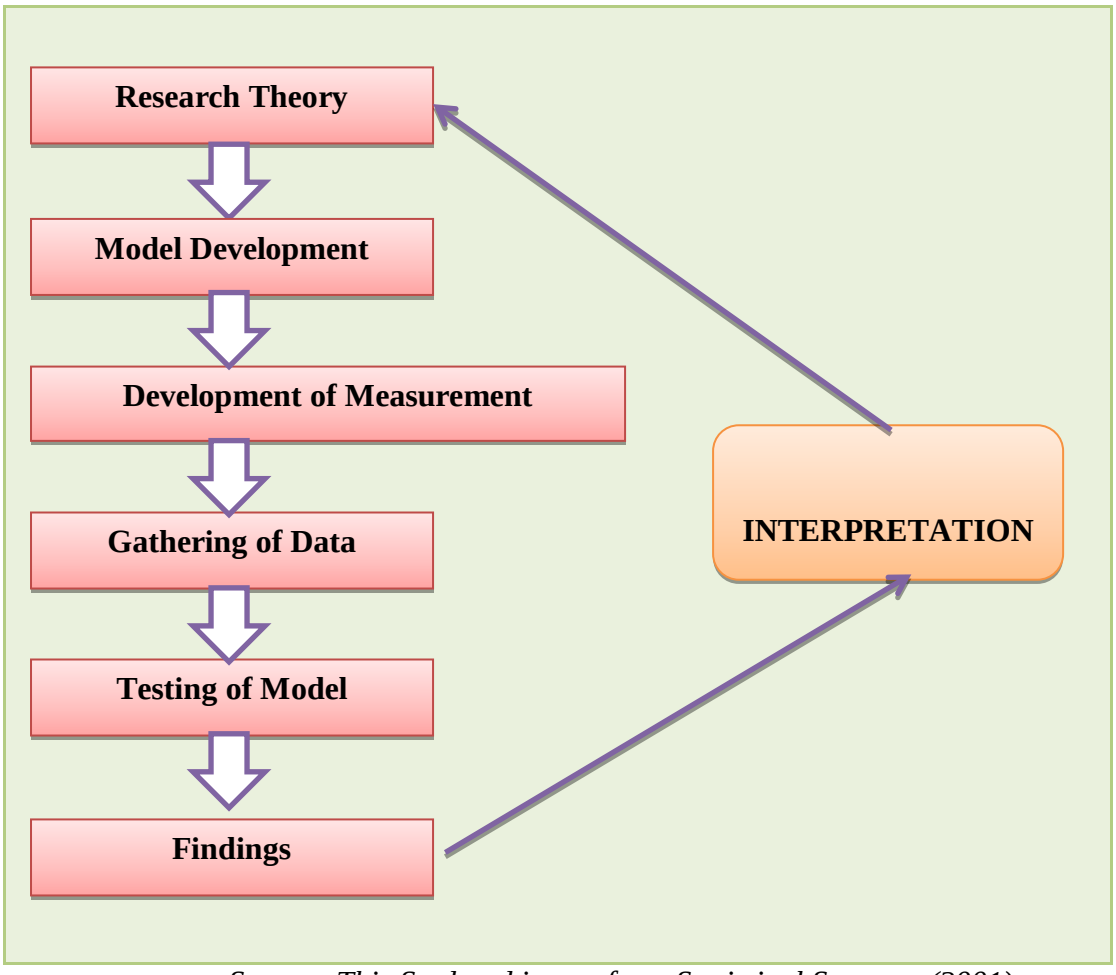
Structural Equation Modelling (SEM) is a statistical method used for the testing of hypotheses that relate to the relationships between manifest (observed or indicator) constructs and latent (unobserved or denoted) constructs (Hoyle, 1995; Marsh, Wen, Nagengast & Hau, 2012). However, SEM also includes other different techniques such as the Analysis of Variance (ANOVA), Multiple Linear Regressions in addition to the causal modeling of latent variables (Khine, Ping & Cunningham, 2013). According to (Khine et al., 2013), SEM is a combination of various statistical methods for modeling the multivariate relationships among constructs. Therefore, SEM is often considered as a statistical technique that integrates components of different basic modeling approaches, for example, Simultaneous Equation Modelling, Regression and Factor Analysis. Given that SEM integrates different modeling techniques, it goes beyond basic regression models to include some endogenous and exogenous constructs as well as the abstract latent constructs that may be characterized by the groups of manifest variables. While basic multivariate modeling methods are incapable of

either measuring or correcting for measurement error, SEM makes provision for the estimation of these parameters (Marsh et al., 2012). These, characteristics of SEM makes it a compelling analytic technique. According to (Hair Jr., Anderson, Tatham, & Black, 1998) SEM brings together the characteristics of two primary models: (i) measurement model (CFA) and (ii) structural model (path modeling) into a synchronized statistical test.

The part of the model that links factors or variables to each other is called connecting numeric answers to a rating measure item on a research questionnaire, for example, sex, sector of the economy in which the firm operates, whereas latent constructs are not observed directly, although it is important for researchers to be mindful of them. Unobserved variables may include management perception of green relationship learning, overall management perception of commitment to green, perceived green human capital investment, and firm performance among others (Khine et al., 2013). Further, SEM is a modeling approach grounded on a confirmatory methodology (for estimating reliability, validity and model fit) to the analysis of theory about the construct under investigation. Therefore, SEM's various statistical methods include path analysis (to estimate model fit and hypothesis testing). Following from this, SEM can be regarded as a double process – it starts with CFA and ends with Path Modelling (Anderson & Gerbing, 1988). Moreso, SEM is a powerful and flexible addition to the General Linear Model (GLM) that enables researchers to at the same time test a set of regression equations.

The statistical software used for SEM is AMOS. Amos can test traditional models, and beyond basic test it can analyse more multifaceted models and interactions, for example, CFA (Khine et al., 2013; Wothke, 1996, Statistical Support, 2001). It is important that all models be analysed using SEM software (AMOS), be specified first based on theory before analysis (Khine et al., 2013). Following the specification of a model, the investigator needs to decide on how variables will be measured, determine how the required data will be collected, and after coding the gathered data, the investigator then imports the coded data into the SEM software package for CFA analysis first and then Path Modelling afterward. Given that AMOS (the statistical software used for SEM) was created to allow researchers to quickly develop and fit SEMs instinctively and fast, made the investigator to find this statistical package as appropriate in addressing the research questions and test the hypotheses for this study. The following figure is an illustration of how SEM analysis is applied.

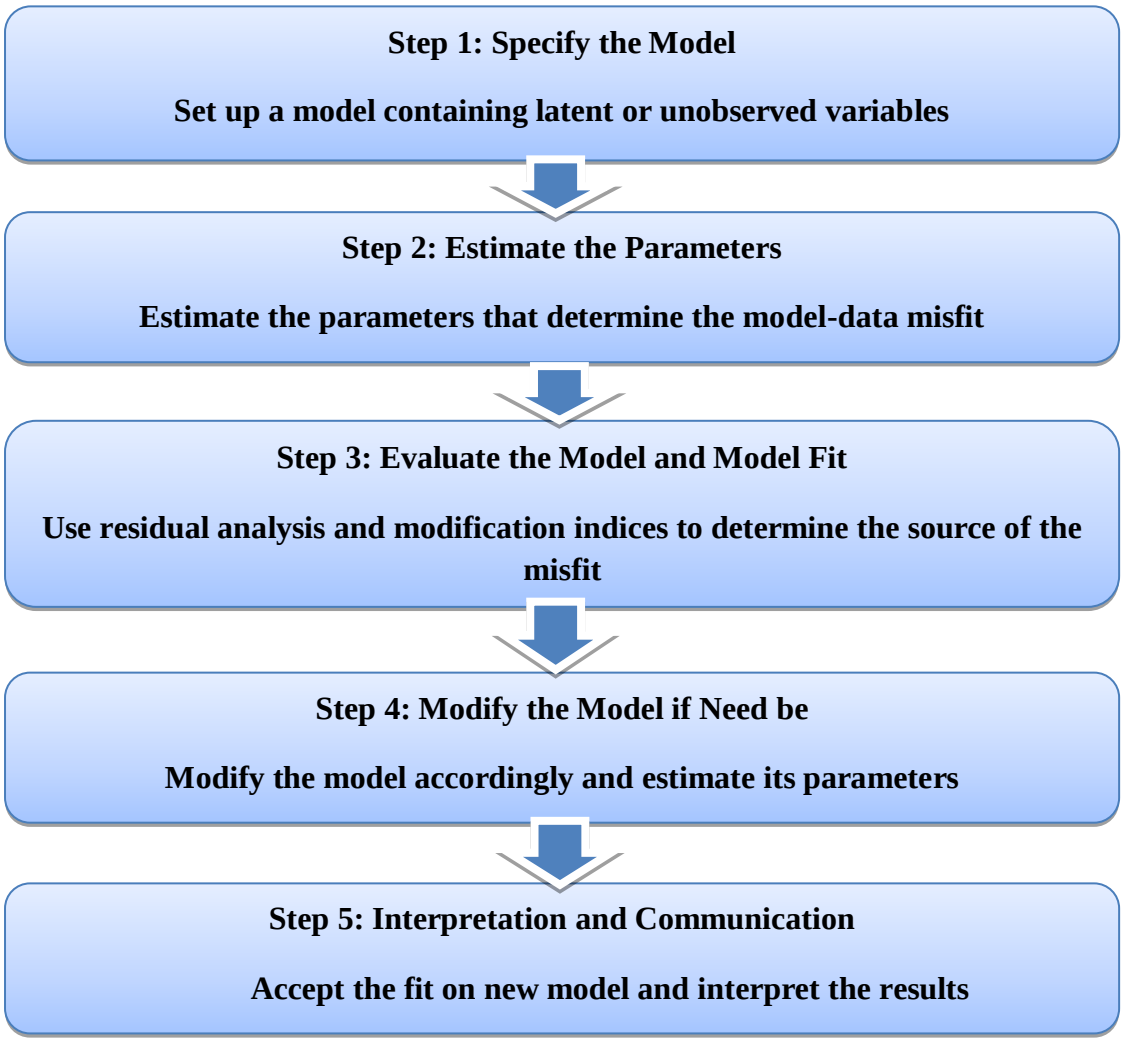
Figure 5.10: A Basic Approach to Applying a SEM Analysis



Source: This Stud and inputs from Statistical Support, (2001)

According to the above figure, an investigator needs to start with literature review and then based on theory, and a model should be developed. Following the development of the model, the measurement instruments should be developed or adapted. In this study, the AMOS analysis tools were adapted. Once the measurement instruments have been approved and are ready, data collection starts. Following the gathering of data, the research may start testing the hypothesised conceptual model. Therefore, the results would be calculated, and from the estimated outcomes, interpretation will follow to understand the findings. Despite the above steps, Chinomona (2014) suggested the following steps to be followed during SEM analysis:

Figure 5.11: Steps in the Implementation of SEM



Source: Points taken from Chinomona (2014)

According to the illustration of the figure above, there are five main steps to follow during a SEM analysis. Following the figure, the first phase is to specify the model. Defining a model can be done through modeling both manifest and latent variables. After the model is estimated, it is important to estimate the parameters and check if the model fits or there is a misfit. In cases where the model does not fit the data, modification indicies are used to improve the model. Once the modification indices have been used to improve the model fit, the revised model is then accepted and interpreted as the best fit final model. In this study a five-step approach in line with (Chinomona, 2014) was adopted for analysis in SEM: The model was specified based on theory, the parameters were estimated, the model fit was checked, the modification indices were used to modify and re-specify the model, and the final best fit model was explained. The choice SEM in this study was guided by the following purpose:

According to (Hox and Bechger, 1998), SEM analysis has two main aims:

- It assists the investigator to generate parameter estimates for the model – precisely, these include factor loadings, variances, covariances and residual error variances of the observed or measured variables.
- It further enables the investigator to estimate model fit – checking whether the model shows a good fit to the sample data.

5.11.1. Two Important Issues on SEM Analysis

Despite the power and extensiveness of SEM, there are two practical problems with this methodology. These problems are model identification and model equivalence.

- Model Identification – One of the issues with SEM is whether the parameter estimates are identified for model identification. This is about getting a unique estimate for each parameter. A model is termed identified when all the model parameters are identified – i.e., where there is a unique value for every single free parameter from the observed data (Hox & Bechger, 1998). According to (Khine et al., 2013), the identification problem assists an investigator to determine if there were adequate independent equations to account for the variables in the model. Where none of the instruments are identified, it becomes impossible to generate findings from a SEM analysis.
- Model Equivalence – The second problem with SEM is that of model equivalence. This issue is further aggravated by the fact that most often the data does not outrightly show this issue, but an experienced investigator can detect this based on experience. Therefore, it is hard for a first-time researcher to identify this issue (Bollen & Long, 1993). Any two SEMs are regarded as equivalent if they estimate similar values from a similar set of data (Khine et al., 2013). When fitting SEMs, the researcher should consider either the covariance matrix or the correlation matrix. However, at occasional times, observed means can be utilised to fit SEMs, particularly when approximating factor intercepts or means. As a result, any two SEMs that estimates related moments (i.e., means, covariances, correlations, e.t.c), are regarded as equivalent.

5.11.2. Why SEM was used in this study

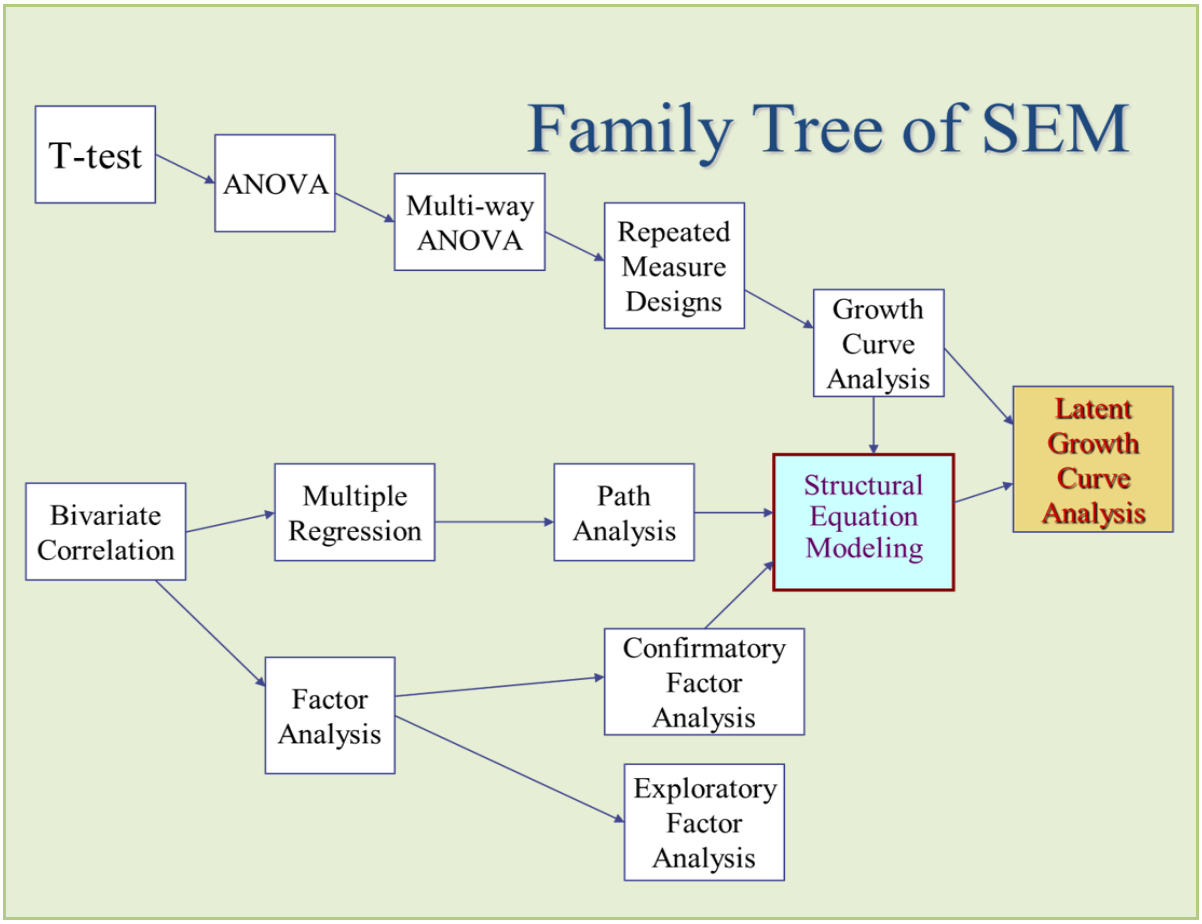
To explain why the investigator decided to use SEM in this study, a table was developed to highlight the features of SEM that enabled the researcher to decide on using SEM in this thesis.

Table5.4: A Justification of Why SEM Was Selected for this Study

SEM's Attractive Features
• SEM uses both latent and manifest variables compared to most other multivariate methods are based only on observed measurements. • Given that SEM allows for graphical User Interface, it increases the creativity of an investigator and makes it easy to quickly present, explain a model and its findings. • The SEM software generates both single and explicit parameter estimate tests (i.e. estimates of error variance parameters) and complete tests of model fit. • Using SEM, regression coefficients, variances, and means can be compared at the same time, even across multiple between-subjects groups. • SEM takes a confirmatory methodology to data analysis by stating the associations amongst a priori of variables. • SEM can model multivariate relations, and estimate both direct and indirect effects of constructs under study • Measurement and CFA models can be used to remove errors, making projected relationships amongst unobserved variables less contaminated by measurement error. • SEM offers a unifying framework under which many linear models can be fit using a powerful and yet flexible data analytic approach.

Source: Statistical Support, (2001)

The following figure shows some of the important aspects linked to or contained in SEM.



Source: Zimmerman & Dekhtyar (updated PPT)

The above figure shows that SEM is a combination of many traditional statistical analysis methods like the t-test, analysis of variance (ANOVA), growth curve analysis, multiple regression, factor analysis, path analysis, exploratory factor analysis, CFA, and more recently – latent growth analysis. The integration of all these analysis techniques demonstrates that SEM is indeed a powerful data analytic method.

5.11.3. Assumptions of SEM

SEM has some assumptions on which model estimation using SEM is based. When such assumptions are not met, the reliability of the research findings may be questionable. The first underlying assumption is that the collected data should follow a multivariate normal distribution, for the means and the covariance matrix to include all the relevant information (Khine et al., 2013). To be precise, SEM has the following assumptions:

(i) A Theoretical Basis for Model Specification and Relationships – Model specification is grounded on previous studies or theory. A researcher needs to specify the model before the analysis process in SEM (Hox and Bechger, 1998). Following from this, this study defined

the anticipated linkages between the manifest and latent variables – i.e., the dependent variables were distinguished from the independent variables by the investigator. The researcher stated which relationships were null, constant, as well as those that were expected to vary. The relationships between variables were conceptualised and represented in path diagrams. In this study, we illustrated the predictor variables, the mediating variables and the outcome variable on the path diagram. Based on Literature review, the relationships between the variables were identified and defined in line with suggestions from (Khine et al., 2013) who suggested that unspecified relationships between variables are assumed to be zero. Following the computation and analysis of the specified relationships, the investigator checked that the model outputs were in line with specifications based on literature.

(ii) Model Misspecification – The degree to which a hypothesized model may be prone to specification error is termed model misspecification. For example, an exclusion of relevant constructs in the model (Khine et al., 2013). Using SEM for analysis, researchers provisionally accept a given model that has a good fit with the data (Khine et al., 2013). This is because, in the SEMmethodology, the models are not accepted, but an investigator can only fail to reject them. However, models that have a bad fit can be dismissed. However, if a researcher fits one factor in CFA model to other measurement items, and the model is consistently rejected, then the researcher may be self-assured that the factor that is being fitted does not sufficiently explain the items' shared variance (Hoyle, 1995). Additionally, Byrne (2012a) proposed that using SEM software programs involve some ambiguities, particularly with cross-sectional data collected under controlled conditions. All these factors were taken into consideration during the model specification phase in this study.

(ii) Model Identification – For there to be practical sets of results from SEM computations, there need to be an adequate number of known correlations and covariances as inputs in the model. Thus, there is the need for proper identification of every equation in the model. For SEM analysis to be effective, identification is a pre-requisite. To test the model fit, there is need for an appropriate statistical software to enable the identification checks (Khine et al., 2013). In this study, the AMOS statistical software was chosen given that it provides sound warnings on under-identification situations and can also offer suggestions to remedy the situation (Arbuckle, 1997; Kline, 2011). Solutions to identification problems can be generated by imposing some constraints. When there is no less than one unique outcome for every parameter estimate in a SEM model, then there is identification. Accordingly, (Khine et al., 2013) called models that have at least one parameter estimate "just-identified". Whereas,

models with more than one likely solution for each parameter estimate are termed "over-identified". Over-identification occurs when there are fewer unknowns than the data available to determine them. Those with an unlimited number of possible parameter estimate values are considered to be under-identified (Khine et al., 2013; Shipley, 2002). There are two main types of under-identification:

- Empirical Under-Identification – This occurs in instances where a parameter estimate that initiates model identification has a very small estimate (Shipley, 2002).
- Structural Under-Identification – this happens when the model is under-identified for any combination of parameter estimates due to poor model development and specification (Shipley, 2002).

All excellently fitted models are just- or over-identified. To solve the problem of under-identification, the model can be re-specified, or there can be more data collection.

(iii) Normally Distributed Exogenous Variables – Structural Equation Modeling packages assume that dependent (downstream or exogenous) variables are usually distributed, with normally distributed residuals (Kline, 2005). Furthermore, the assumption is that all the univariate distributions are normally distributed, and the joint allocation of any two of the variables is bivariate normal (Kline, 2005). Primarily, this denotes that residuals are likely to be univariate normally distributed and their collective distribution can be projected to be joint multivariate normal (Khine et al., 2013). A violation of these assumptions can significantly affect the precision of statistical tests in SEM (Kline, 2005). However, it is worth noting that in practice, this assumption is by no means fully met. This is because there is frequently some non-normally distributed variables (Stevens, 1996), in the case of a multivariate normality.

(iv) Complete Data or Proper Treatment of Incomplete Data – Complete data does not create any problems. However, a problem occurs when the necessary data is lacking. Missing data commonly occurs due to issues beyond the control of the researcher. Kline (2005) described two types of missing data:

- Missing at Random (MAR) and
- Missing Completely at Random (MCAR)

A problematic type of missing data is called Not Missing at Random (NMAR) (Kline, 2005). This kind of missing data is about the methodical loss of data, for example, a systematic data

loss where participants avoid some items measuring the construct. The most appropriate method is determined by assessing the extent of its missing and through an assessment of the randomness of missing data (Khine et al., 2013). Missing data experts, for example, Little & Rubin, 1987, recommended the use of the Maximum Likelihood Estimation (MLE) method for SEM analysis. This technique makes use of all presented data points. The chosen statistical software for the current study – AMOS statistical software, has the MLE feature that was used to detect the existence of missing data. Also, Khine et al. (2013) posited that users of SEM must employ methods like multiple imputations, listwise deletion, and pairwise deletion to deal with MAR and MCAR.

5.11.4. Model Estimation

As soon as the model is specified, the next task of a researcher is to estimate factor loadings and covariances (Khine et al., 2013). As stated by Hox, & Bechger, (1998), the most basic model in statistical modeling is:

Equation 1: DATA = MODEL + ERROR

Model estimation involves describing the error-value associated with the projected value as well as the value of unidentified parameters (Khine et al., 2013). Moreover, model estimation can estimate standardized parameter coefficients (which are parallel to β under regression) and non-standardized parameter coefficients (which are equivalent to t value linked with each β weight in regression) along with parameter values (Hox, & Bechger, 1998). A researcher must check whether the data is normally distributed before choosing the estimation method to use (Khine et al., 2013; Marsh et al., 2012). As aforementioned, the current study used the MLE, which is embedded within AMOS software.

5.11.5. Parameter Estimation

The estimated parameters must be significant enough to render the model desirable (Khine et al., 2013). Kline (2005) also supported this idea and posited that it is undesirable to have a model that correctly fits the data but it can still have a small number of significant parameters. If the model suffers from a limited number of significant parameters but properly fits the data, the remedy can be what is termed model modification, and this will be discussed later.

5.11.6. Confirmatory factor Analysis (CFA) or Measurement Model

A Confirmatory Factor Analysis (CFA) was used as part of SEM, to objectively evaluate and develop variables that specified a series of relationships, on how 'estimated variables' epitomized the latent construct. According to (Teo & Khine, 2009), a CFA is a measurement model used to measure the relationships between a set of manifest and latent variables. The measurement model is regarded as a sub-model in SEM that: (i) specifies the determinants of every unique construct, and (ii) It also assesses the reliability of construct used for the estimation of the causal relationships. The CFA modeling endeavours to specify how the variables load on different factors (Marsh et al., 2012). Standardised regression weights represent the factor loadings computed by the CFA model. According to (Hair et al., 2006), the standardised regression weights generated by the CFA model must be 0.5 or higher. Further, it is important for a researcher to check the significance of these item loadings, covariances and error variances as well as the Global Model Fit Test and other model fit indices (Khine et al., 2013).

After specifying the factors and the inter-correlations between factors in a CFA model, the outputs are generated (Prudon, 2013). The calculation of the composite reliability and validity (Average Variance Extracted) is based on the factor loadings generated from the CFA model. Therefore, the primary purpose of the CFA model is to estimate the reliability and validity of the measurement instruments in addition to checking whether the conceptual model fits the collected data. After these checks, and the minimum requirements met or provisionally reached, then the next phase is the path modeling.

5.11.7. Types of Models in SEM

According to (Raykov and Marcoulides, 2006), there are mainly four types of SEM models found in the literature. These models include:

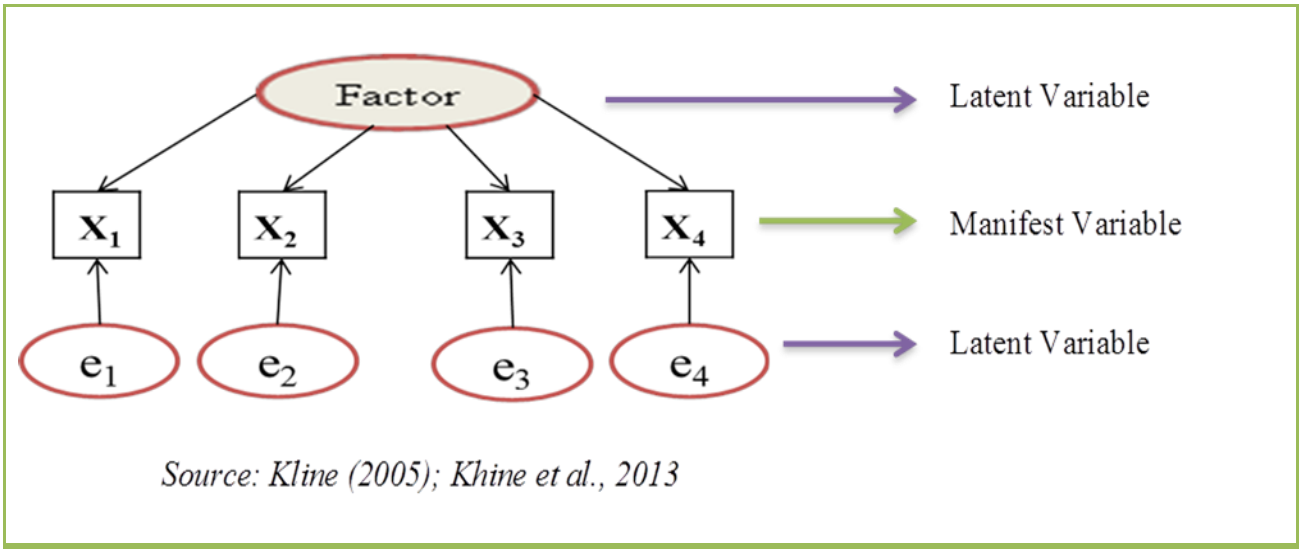
- Confirmatory Factor Analysis (CFA) models
- Structural Regression (SR) models
- Latent Change (LC) models
- Path Analytic (PA) models

The following section provides a brief explanation and example of the above models.

5.11.7.1. Confirmatory Factor Analysis (CFA) Model

According to (Hair et al., 2006), the CFA model is mostly used to examine the patterns of relationships among variables. The assession of the different constructs in the model is carried out using a set of manifest variables. All variables in the model are assessed using a set of manifest variables. The main characteristic of the CFA models is that no clear directional associations are assumed between the constructs. Instead, constructs are just linked with each other; for example, with double headed arrows with no direction of causality assumed or indicated (Marsh et al., 2004; Goffin, 2007; Prudon, 2013). An illustration of the CFA model is presented in the figure below.

Figure 5.13: An Illustration of the CFA Model



5.11.7.2. Assumptions of the Confirmatory Factor Analysis (CFA) Model

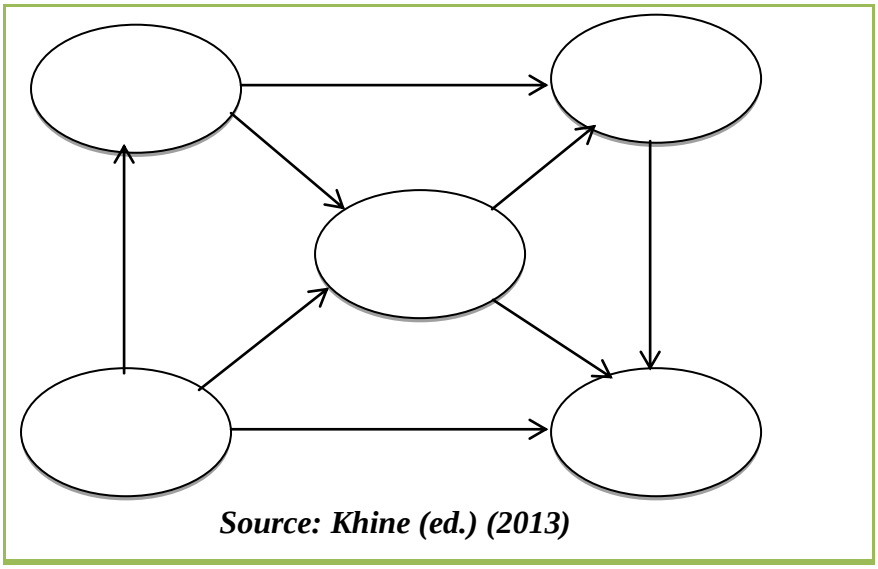
Various authors (Goffin, 2007; West, Taylor and Wu, 2012), have made certain assumptions about the CFA model. These Include:

- It is assumed that the dimensionality is known, i.e. from latent characters
- It is also assumed that the model is linear – with a unit change (A) in the latent variable being associated with a proportionate shift in the item response (B) at all points of factor (Z).
- It is assumed that the aim is to measure the covariance between items based on model fit
- Models can be presented without μi (the item intercepts) as this does not contribute to the covariance.

5.11.7.3. SR Model

The SR models are derived from CFA models through a proposition of the precise explanatory associations or latent regression between variables (Khine et al., 2013). These models are frequently used to estimate and validate or invalidate recommended schools of thought that involve explanatory relationships amongst a diverse number of latent variables.

Figure 5.14: An Illustration of the SR Model

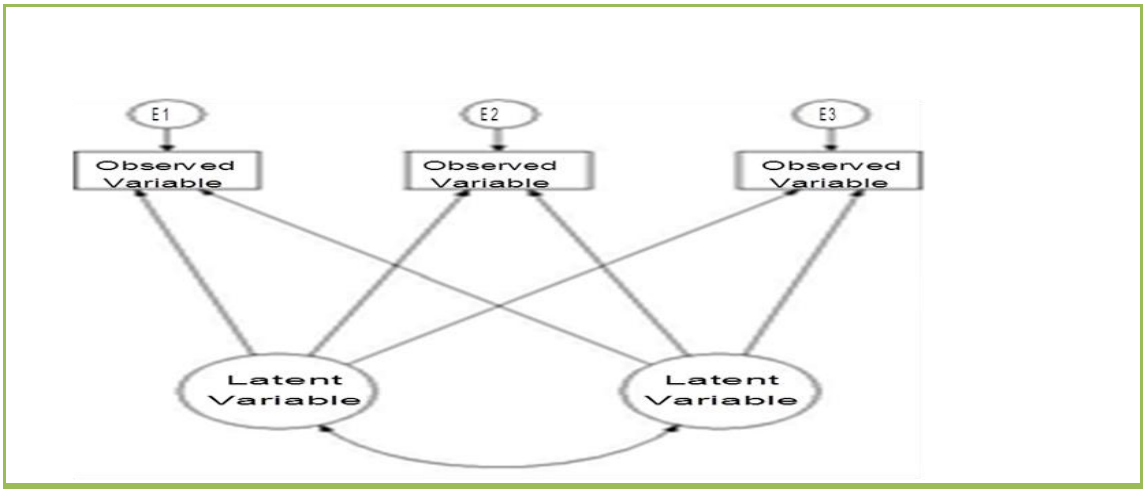


Source: Khine (ed.) (2013)

5.11.7.4. LC Model

The figure below is a representation of a latent change model

Figure5.15: An Illustration of an LC Model



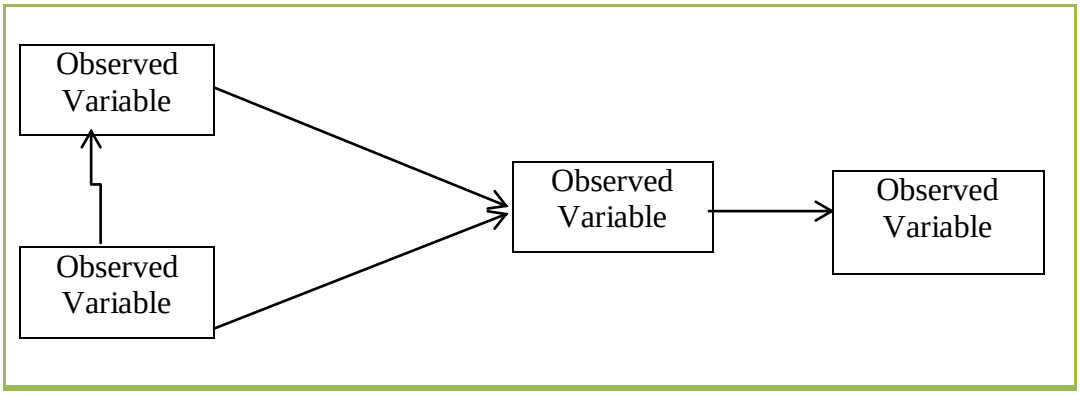
Source: Khine et al. (2013)

LC models are mainly used to study fluctuations over time, for instance, such models can be used for longitudinal studies (i.e., studies done over an extended period, for example, three years), patterns of increase or decrease (or both). The LC models make it possible for researchers to study both inter- and intra-individual alterations in change patterns. Figure 5.15 above depicts how a typical LC model looks like.

5.11.8. Path Analytic (PA) Model

Path analytic models are focused on explaining manifest variables (Khine et al., 2013). Path analytic models constitute an important part of the development of the modern SEM models though their focus has mainly been on manifest variables. According to (Kline, 2005), the PA model is fitted and tested just like other SEM models.

Figure 5.16: An Illustration of A PA Model



Source: Khine (ed.) (2013)

- In line with the objectives of this thesis, only CFA and PA models are applicable and will be further examined later in this study.

5.11.8.1. CFA: Checking the Reliability, Validity, and Model Fit of Measurement Items

Under CFA, reliability, and validity of the measurement instruments are tested as well as model fit. This section will briefly discuss reliability and validity.

(i) Reliability of Measurement Instruments – Reliability is about the quality of a measurement technique that provides consistency or replicability and accuracy (Chinomona, 2014). The coefficient of reliability range between 0 and 1, with higher values indicating higher reliability levels. When an item or entity produces stable scores, then such an item is deemed to be a good measure.

(ii) The validity of Measurement Instruments: According to (Khine et al., 2013), validity indicates that a proper way has been used to find answers to a question. Therefore, a meaningful or valid measurement process is effective when it measures what it was set out to measure.

(iii) Checking the Model Fit under CFA –Model fitting entails determining how well the data fits the model (Khine et al., 2013). Fitting a model to data involves finding solutions to a set of questions (Hox, & Bechger, 1998). Moreover, it also means making a contrast between the proposed covariance model (i.e., from the specified model) with the sample covariance matrix (i.e., from the gathered data) (Khine et al., 2013; Kline, 1998). An investigator may calculate the statistical significance of every parameter estimate for the structural paths in the model to determine the statistical effect of a theoretical model (Khine et al., 2013). On the other hand, researchers may consider the impact, and the level of the parameter estimates to confirm that they are in line with the leading theory and discard any illogical parameters (Schumacker & Lomax, 2004). Global fit indices can be used to determine model fit and fit indices fall into three broad categories: absolute fit (or model fit), model comparison (or comparative fit), and parsimonious fit (Mueller & Hancock, 2008, 2010; Schumacker & Lomax, 2004; Khine et al., 2013).

• Absolute Fit Indices – These indices measure how well the specified model resembles the data (Khine et al., 2013). There are many absolute fit indices, but the $\chi 2$ (chi-square) is the key absolute fit index that checks the degree of model misspecification. Following from this, researchers always wish for an insignificant $\chi 2$ value as this indicates that the model adequately fits the sample data (Kline, 1998; Rigdon, 1998; Schumacker & Lomax, 2004). On the contrary, a significant $\chi 2$ value demonstrates that there is model misfit – i.e., a lack of fit between the data and the model. This point towards the fact that the p-value associated with the $\chi 2$ must be insignificant to fail to reject the null hypothesis that there is no significant difference between the implied model and observed variances as well as the covariances (Khine et al., 2013). Nevertheless, previous studies suggested that the $\chi 2$ is too sensitive to increase in the sample size to the point that the level of probability (i.e., p-value) is more likely to be significant fit (Mueller & Hancock, 2008, 2010). Also, the $\chi 2$ value is expected to rise together with the number of observed variables (Khine et al., 2013). Consequently, an insignificant p-level is uncommon, despite the fact the model may as well be a close fit to the observed data. It is for this reason that SEM (as a powerful statistical

package) does not use the $\chi 2$ as the only pointer of model fit. Other model fit indices are also used in SEM, and they will be explained further in the ensuing section.

a) Goodness-of-Fit Index (GFI) – As stated by Khine et al. (2013), GFI measures the comparative amount of the observed covariances and variances. This is explained by the model and corresponds to the coefficient of determination (i.e., r2) in regression analysis. The suggested value for a good fit is GFI > 0.95 (Hu & Bentler, 1999), with 1 demonstrating a perfect fit. However, in line with Hoyle (1995) and Chinomona (2014), the recommended threshold for GFI must be at or above 0.90. Moreover, GFI can be modified to offer an Adjusted Goodness-of-Fit Index (AGFI). This adjusted GFI allows for the degree of deviation from the model and in turn, it modifies the GFI (Kline, 2005; Schumacker, & Lomax, 2010).

b) Standardized Root Mean Square Residual (SRMR) – This index indicates the amount of error that comes from the estimation of the hypothesised model (Hu & Bentler, 1999). On the other hand, the error level or some residuals displays how correct the model is. Consequently, a lower SRMR value – i.e., <0.05 characterises a good model fit while values <0.08 indicate a reasonable model fit ((Hu & Bentler, 1999; Khine et al., 2013).

c) The Root Mean Square Error of Approximation (RMSEA) – The RMSEA fixes the prospect of the $\chi 2$ rejecting models with an enormous sample size or a large number of variables (Rigdon, 1998). Most of the times, the RMSEA is reported at 95% confidence level to redress any sampling errors associated with a lower RMSEA value and the projected RMSEA. This is the same as the SRMR value, which indicates a good fit for low values (Khine et al., 2013; Schumacker, & Lomax, 2010).

d) Comparative Fitting Index (CFI) – This index evaluates whether the hypothesised model is better than the baseline or competing model (Rigdon, 1998). The CFI is one of the extensively used indices, and it demonstrates the comparative lack of fit of the postulated model versus the baseline model. Some of the high points of CFI include its relative insensitivity to the complexity of the model. It falls within the range of 0 and 1, with higher values of <0.95 (Hu & Bentler, 1999) indicating a good fit.

e) The Tucker-Lewis Index (TLI) – Just like CFI, the TLI may as well be used to measure comparative fitting, with values close to 1 signifying a good fit (Hu & Bentler, 1999; Khine et al., 2013).

f) Parsimonious Indices – Frequently, a parsimony fit model is simple – with fewer parameters that reduce the complexity of the model. Moreover, parsimonious indices are computed using a parsimony ratio (Khine et al., 2013). This index or ratio determines the variation between the observed and inferred covariance matrix, while at the same it accounts for the complexity of the model (Kline, 1998).

The current study used the following thresholds to check whether the model fits the data:

- Chi-square value (<3)
- Comparative Fit Index (CFI): (> 0.900)
- Goodness of Fit Index (GFI): (> 0.900)
- Incremental Fit Index (IFI): (> 0.900)
- Normed Fit Index (NFI): (> 0.900)
- Tucker Lewis Index (TLI): (> 0.900)
- Random Measure of Standard Error Approximation (RMSEA): (< 0.08)

5.11.9. Shortcomings of the CFA Model and GOF Indices

As the current used the CFA model to check the reliability and validity of the measurement items as well as model fit, it became necessary to highlight some notable shortcomings of this method. According to Purdon (2013), one of the noteworthy drawbacks of CFA is that secondary estimates or factor loadings are excluded from the final output. Consequently, it often becomes hard, if not impossible for researchers to assess whether a particular item may perhaps have been enriched when apportioned to a different group, particularly when the initial factor loading or estimate is low (Khine et al., 2013). This results in a bad detection of the deviation from the estimate (Prudon, 2013). As an outsider, it also remains vague as to why no secondary factor loadings are provided on the CFA output. Such exclusion may create complications, particularly throughout the construct validation process. On the other hand, the aim of the current study was not to critique or question any established indices used in SEM, but to adopt them as they are because the exclusion of secondary estimates was deemed necessary by earlier researchers. Noteworthy, this omission has been supported by some academics, for example, (Goffin, 2007; Markland, 2007; Mulaik, 2007) among others.

Instead of having secondary factor loadings in the final output, the so-called modification indices for all items are included in the final output (Barrett, 2007). Modification indices show how GOF indices can be enriched when an item is eliminated from its projected group (Khine et al., 2013). In consequence, it is expected that many scholars, for example, (Barrett, 2007; West et al., 2012) would criticise the reliability of GOF indices. In their critique, they asked a relevant and yet controversial question:

How reliable is this so-called goodness of fit indices? Besides the criticisms on the reliability of the GOF indices, another debate erupted due to the confusion regarding the cut-off values that must be assigned to these indices to determine a satisfactory level of acceptance or rejection of a model (Barrett, 2007; West et al., 2012). However, as aforementioned, the current study did not intend to question anything, but only used the recommended thresholds by previous scholars to justify the fit of the conceptual model to the data.

5.11.10. Model Modification

A bad model fit necessitates that the hypotheses must be altered either by adding or eliminating parameters to improve the fit (Khine et al., 2013). After that, model re-specification happens – which is a step of re-testing the model (Schumacker & Lomax, 2004). In general, model modifications give rise to a better model fit (Martens, 2005). Nonetheless, such modifications can be the basis for the lack of generalisability, particularly if small sample sizes are used. Another problem arises when these amendments are not theoretically justified (Green et al., 1998) as this may give rise to circumstances where the investigator severely mids-specifies the original model. The model modification also entails carefully altering the parameters and this adjustment must also be reinforced by theoretical evidence to lessen the probability of making Type I error (Martens, 2005). For example, parameters can be altered from being free into fixed or from being fixed to free. At this model-modification stage, AMOS statistical software can assist researchers in modifying the model through working out the Lagrange Multiplier Indexes for each parameter or the so-called modification indices for each fixed parameter (Arbuckle, 1994; 2012).

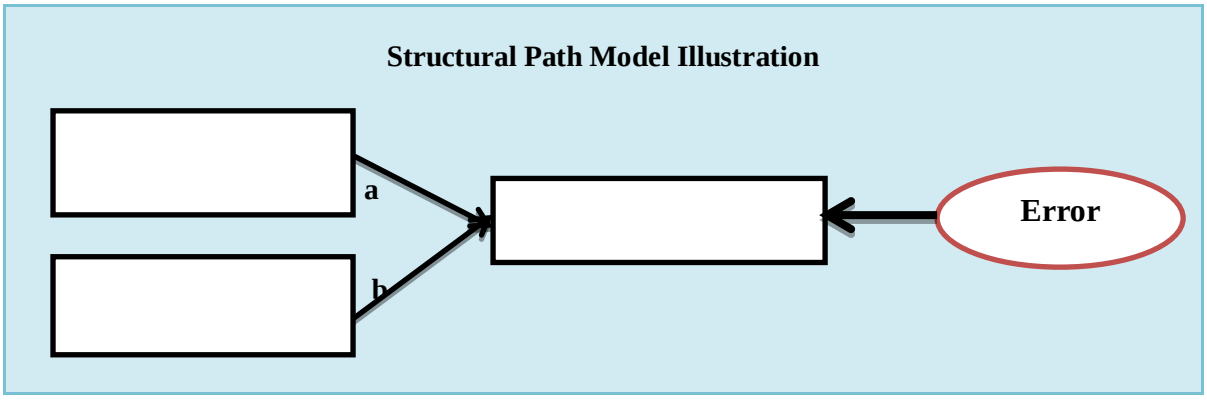
5.11.11. Path Modelling

Path modeling is the next step in SEM following the testing for reliability and validity of measurement instruments, and the model fit under CFA is checked, resulting in an acceptable threshold. Path modeling in SEM is when the measurement model links the manifest

variables to their latent variable (Khine et al., 2013). The path model is also called the structural model linking independent unobserved variables to other unobserved variables (Chatelin, Vinzi & Tenenhaus, 2002). SEMs are illustrated using a graphical path diagram as shown in Figure 5.17 below.

On a path, diagram boxes represent manifest or measured variables, and circles represent latent or unmeasured variables. Both measured and unmeasured constructs are connected using arrows (Khine et al., 2013). On a path diagram, single-headed arrows refer to causal relationships while double-headed arrows show covariances or correlations that have no causal interpretation (Hox & Bechger, 1998). On the figure below, only single headed arrows are used, and they represent a causal relationship between the constructs. One can interpret the below path diagram by saying that both consumer attitude and perceived price influences purchase intention of consumers.

Figure 5.17: A Depiction of Path Diagrams



Source: This Study, 2017

From Figure 5.17 above, the circle represents latent variables while boxes characterize manifest variables. Noteworthy, the error term is presented as a latent variable.

Illustration 1 – Given the above diagram, the relationships can be represented by a simple linear equation as follows:

Equation 2: Firm performancei = a *firm commitment to greeni + b *green marketing capabilityi + errori

Equation 3: Green Corporate Social Investmentsi = a *firm commitment to greeni + b *green marketing capabilityi + errori

The above equations show that the researcher attempts to select estimates for the path coefficients a and b. These coefficients moderate some errors across observations, given

the assumptions about these mistakes. An individual can also use path diagrams to describe the model described in Equation 2 (and as seen in Figure4.23 above) and they are a clearer way of summarising SEMs. Path diagrams can be drawn in a relatively simple way, and the graphic tools embedded in the statistical software can be used to draw them – i.e., SEM is a GUI. On the other hand, an individual can use AMOS to generate the required equation statements in a bid to fit the models drawn (Arbuckle, 1997). Besides the simple linear equation above, SEMs can also comprise one or more linear regression equations, and this further evinces the relationship between constructs. In SEM, these linear regression equations are termed structural equations or structural equation models or simply the structural model. Coefficients that indicate how exogenous variables depend on endogenous variables are rarely called path coefficients (Khine et al., 2013). The next section presents a simple regression equation, which shows the primary link between the dependent and independent variables.

5.11.12. SEM-Multiple Regression Link

SEMs involve a sequence of multiple regression equations which are all simultaneously fitted. As a multivariate addition of the multiple linear regression models, SEM has many independent (exogenous) (X) variables but has one dependent (or endogenous) (Y) variable.

Equation 3: $y = i + Xb + e$

where:

y = a vector containing observed scores on the dependent variable

i = a vector 1's representing the y-intercept

X = a matrix of continuously distributed or categorical (dummy coded) independent variables

B = the vector of regression weights

e = represents the vector of residual or error or leftover scoring unexplained by the model

The following section highlights the significance of SEM to this study as well as some advantages and disadvantages of SEM in advance of providing a short discussion on AMOS.

5.11.13. **Importance of Using SEM in this Study**

Various authors (Bacon, 1997; Khine et al., 2013) have postulated that there exist key variables in marketing research that is unobserved. Unobserved constructs, can be

estimated using observed variables. The estimation of latent variables using observed variables has an unknown reliability. Therefore, literature (Hox & Bechger, 1998; Kline, 2011; Marsh et al., 2012; Wothke, 1996) also indicates that if only one predictor is unreliable, then its true regression coefficient may be miscalculated, and the size in addition to the signs of coefficients may also be wrong. Accordingly, a researcher may find that the predictor variables that are expected to be positively correlated with the outcome variable may end up having negative coefficients, or vice versa. Given such results, there might be a need for the researcher to re-regress the data (Wothke, 1996). However, if similar results are obtained – i.e. getting unreliable coefficients with startling signs, then the problem may be due model misspecification. This may be mitigated using separate, bivariate regressions (Wothke, 1996). However, using SEMs with some indicator variables may assist market researchers in modeling the primary latent construct and at the same time resolving the problem of unreliability of indicators (Marsh et al., 2012). Therefore, the importance of SEM may be derived from its ability to model unreliability, and in so doing, it explicitly takes unreliability of indicators into account.

Secondly, SEMs is a form of modelling for the managing of multicollinearity (i.e., two or more predictor variables being inter-dependent rather than being unique) in the set of exogenous variables (Wothke, 1996). Predictor variables with a very strong correlation – those that are highly related tend to generate poor and one-sided or misleading results. According to (Kline, 2005) any pair of predictor variables that correlate highly – with a correlation greater than or equal to 0.85 (i.e. $r \geq 0.85$) indicates potential problems of multicollinearity. When two or more predictor variables correlate highly with each other, the investigator should select one of the two variables and eliminate them from further investigation. The following process is used to deal with the problem of multicollinearity:

(i) Ignoring multicollinearity;

(ii) Removing multicollinearity using data reduction techniques, for example, principal component analysis;

(i) Model multicollinearity – Given that modeling is a great feature of SEM; it is the best alternative to deal with multicollinearity as compared to the first two methods.

5.11.14. Benefits of SEM as a Data Analytic Approach

There are various characteristics that set SEM apart as a data analytic methodology. Currently, SEM is the most broadly valid statistical technique available, and it has various flexible and unique capabilities. An important characteristic of SEM is its ability to

specify latent variable models (Tomarken & Waller, 2005). Latent Variable models generate separate estimates of relationships between unobserved variables and their observed indicators (i.e., the measurement model) as well as the relationships among the study constructs (i.e., the structural model) (Kline, 1998). Following from this, it is suggested that researchers can evaluate the psychometric properties of procedures and can approximate relationships between variables that are adjusted for biases that relates construct-irrelevant variance and random error (Bollen, 1989). However, some authors (Tomarken and Waller, 2005) suggested that researchers need to be cautious with these psychometric benefits of unobserved variables as these benefits can be exaggerated and depend mainly upon different methodological aspects that are operational in a particular study, e.g., in (DeShon, 1998; Little et al., 1999).

Another advantage of SEM is the perceived availability of measures of global fit (Kline, 1998). These measures may offer a summary evaluation of even multifaceted models that consists of many linear equations (Tomarken & Waller, 2005). When compared with other alternative techniques that can be used instead of SEM (for example, multiple regression analysis), models can be tested using separate 'mini-tests' of model components, and these are done on an equation-by-equation basis (Kline, 1998; Tomarken & Waller, 2005). Additionally, using nested chi-square tests, investigators can assess the fit of other models that vary in complexity, comparatively. Using this approach, SEM enables model comparison approach to data analysis (as seen in Judd, McClelland& Culhane 1995).

SEM also makes it possible for scholars to directly test the relevant model instead of using other ineffective alternatives (MacCallum, Browne & Sugawara, 1996). When using SEM, the theoretical hypotheses are mostly connected with the null hypothesis, which in fact postulates that the model fits the data accurately or at least approximately. However, other types of SEM analyses are exempt from this conclusion for instance, between-group comparisons of factor mean (Tomarken & Waller, 2005). As above mentioned, SEM is also a remarkably broad data-analytic approach that is linked with exceptional capabilities with other statistical techniques which were traditionally used in data analysis (Khine et al., 2013). The following features show recent innovations or developments that have further enhanced the capabilities and scope of SEM:

(i) Latent Growth Modelling (LGM) – Recently, LGM related to SEM approaches (for example, (Duncan, Duncan, Strycker, Li& Alpert, 1999; Curran &Hussong,2003) has become a viable alternative to the traditional and classic repeated measures of the

ANOVA approach (Khine et al., 2013). When compared with ANOVA approaches, LGM provides a more flexible array of possible covariance structures that are used to model residuals and random effects (Rovine & Molenaar 1998) and has greater statistical power (Muth´en & Curran, 1997; Duncan et al., 1999; Fan, 2003).

(ii) A Comprehensive Multi-Level Modelling Capability – One of the latest advances within the SEM domain is the tool's ability to model broader nested data structures (Du Toit & Du Toit, 2004; Liang & Bentler, 2004). Multilevel SEM models are suitable for designs that involve a large number of clusters (for example, above 100), and the effects of these are considered to be random (Tomarken & Waller, 2005). However, SEM multilevel models are linked with some limitations; for example, model setup and analysis are more intricate than is usually the case with single-level SEM models (Hox & Maas, 2001; Tomarken & Waller, 2005).

(iii) Modeling of Latent and Categorical Manifest Variables – The improved facility for modeling latent and categorical manifest variables is another significant advancement attributable to the work of Muth´en and Muth´en (2004) together with Skrondal and Rabe-Hesketh (2004). This development has also added to the claim that SEM currently represents the most wide-ranging data-analytic framework (Khine et al., 2013; Tomarken & Waller, 2005).

(iv) SEM's Impact on Non-Normal Variables – Although raw data is often poorly typified by a normal distribution (Curran, West & Finch, 1996), some SEM applications depend on the normal theory approaches, for example, the Generalised Least Squares (GLS) and the MLE. This dependence is particularly relevant when one is approximating model parameters and testing model GOF. These normal theories approach used in SEM (i.e., GLS and MLE), are drawn from the supposition that the data are multivariate normal (MVN). In principle, MVN in SEM is an adequate but not a required condition for getting the desired normal theory estimators (Bollen, 1989). Notably, the MVN assumption is largely more restraining than univariate normality. Moreover, in cases where the data is not MVN, the necessary properties of the normal theory estimators may not be achieved ultimately. Non-normal data may also contain additional undesirable effects. Bootstrapping methods (Efron, 1979) may perhaps represent a valuable alternative when covariance structures are fitted to non-normal data (Bollen & Stine, 1993; Yuan & Hayashi, 2003; Yung & Bentler, 1996). To highlight the strength of SEM, presently the bootstrap functionality is embedded in most of its packages.

(v) An Assessment of Missing Data – For the past decades, the main concentration of statistical research has been on the growth of superior methods that were directed at the treatment of missing data (for example, Dempster, Laird & Rubin, 1977; Finkbeiner 1979; Little & Rubin, 1987; Schafer, 1997). These methods have also been extrinsically linked to SEM, for example, the raw MLE or full-information maximum likelihood (FIML), multiple imputations (MI) and the expectation maximization (EM) algorithm among others. All things considered, Tomarken and Waller (2005) recommended the approaches of MI and FIML for the reason that they can be applied more flexible in comparison to the multi-sample alternative. In general, MI and FIML tend to yield correct estimates of standard errors than EM (Tomarken & Waller, 2005). Arguably, it is because of the above factors that SEM has become the statistical framework that is most commonly used to establish and compare alternative methods to the handling of missing data. Fortunately, current evidence shows that rescaled statistics (for example, Chou, Bentler& Pentz,1998) and the bootstrapping procedures (for example, Bollen & Stine 1993) used for the analyses of non-normal data (as above-mentioned), can be usefully extended to handling issues relating to missing data (for example, Yuan & Bentler, 2000; Enders, 2002).

SEM facilitates better modeling of measurement error to identify unbiased estimates of the relations between constructs under study. Therefore, SEM assists the investigator to eliminate the measurement error from the regression estimates. Further, SEM enables the modeling of complex multivariate associations or indirect effects that are not easily predictable (Khine et al., 2013). SEM models both manifest and latent variables (Chinomona, 2014). Given the advantages of SEM over other data analytic approaches, SEM was chosen for this study. For example, factor analysis and regression analysis can only model unobserved variables, while SEM models both observed and unobserved variables. Various authors (Bollen, 1989; Khine et al., 2013; Farrell, 2009; Wothke, 1996) suggest that the most important characteristic of SEM is its ability to account for measurement error in research variables and assist in modeling latent variables. Therefore, when the measurement error is explained, then the correlations between variables, though not always, are more likely to increase in size. However, this increase does not result in multicollinearity as the discriminant validity of constructs is maintained (Grewal, Cote & Baumgartner, 2004). Even though SEM is evidently acknowledged as a vital analytic tool in research, previous studies show that it is still not being utilised to its fullest potential (Guo, Seth, Kendrick, Zhou & Feng, 2008). Despite these attractive

features or advantages of SEM as discussed above, this statistical package is not without any criticisms, some of the limitations of the SEM methodology are presented in the section below.

5.11.15. Practical Limitations and Misconceptions of the SEM Methodology

SEM has some limitations as a data analytic tool, and these include:

• Interaction and Additional Non-Linear Models – Although, interactions represent the most important aspect of hypotheses developed by investigators, (Bollen, 1989; Khine et al., 2013; Farrell, 2009; Wothke, 1996), reviewed the practical applications of SEM in this regard and points out that many researchers have hardly ever used SEM to test the interaction of hypotheses. Theoretically, the favoured alternatives amongst many researchers are methods that allow for a clear specification of interactions among continuously distributed unobserved constructs (Tomarken & Waller, 2005). Although several SEM techniques have been proposed for modeling interactions (e.g., by Jöreskog, 2000; Lee, Song & Poon, 2004), it is unfortunate that the specification and approximation of SEM models with unobserved variable interactions are complex. Given these problems, many investigators tend to avoid using SEM (Moosbrugger, Schermelleh-Engel & Klein, 1997, Schumaker & Marcoulides 1998).

• The Underutilisation of SEM in Research Analyses – A review by Tomarken and Waller (2005) suggested that SEM has not been extensively used in data analysis by academics. Therefore, despite the strengths of the SEM technique, it has only been used to a limited extend by researchers. Some of the reasons for underutilisation of the SEM may include: (1) SEM includes categorical variables that represent a group status, as these variables may increase the possibility of violating the assumption of MVN. (2) Researchers tend to be worried about insufficient sample sizes a for SEM analysis (Khoo, 2001; Tomarken & Waller, 2005).

Other assumptions and misconception about SEM include the following:

(i) Excluded Variables – according to (Browne & Cudeck, 1993; MacCallum, 2003), the SEM like all the other statistical models, are only just estimations of reality. Some authors (Mauro, 1990, Reichardt, 2002) have suggested that the omission of variables under SEM present a false image of the causal structure and measurement resulting in inaccurate estimates of standard errors and biased parameter estimates. Following from this, there is the possibility that some of the specified and tested SEM models exclude important variables. The reason for this is based on the assumption that if there is a good

model fit, then the model must contain all the relevant constructs implicated in the posited structure (Tomarken & Waller, 2003). However, (Reichardt, 2002), showed that a good fit does not guarantee the inclusion of all pertinent constructs in a model.

(ii) Tests of Parameters and Estimates – Investigators need to be aware of problems related to the estimation and testing of parameters. Given the fact that SEM models are approximations, it is important to underscore the fact that the parameter estimates and the related standard errors produced by the evaluations are unbiased only when the assumption is that the hypothesized model is correct (Tomarken & Waller, 2003). This issue can be magnified by the specification of errors. Moreover, an omitted path from one unobserved variable to another unobserved variable has the capability of biasing estimates of other measurement parameters. Another issue is the fact that many researchers are not aware of the fact that the statistical theory underlying SEM relates to covariance, instead of correlations (Cudeck 1989). Therefore, standard errors of parameter estimates are not correct if correlation matrices are evaluated as though they were covariance matrices.

(iii) Alternative Models May fit Well – The outcomes of SEM can be generated using different models (MacCallum & Austin, 2000; Tomarken & Waller, 2003; Waller & Meehl, 2002). Therefore, the investigator needs to know that particular strengths of SEM can also be found in other analytic techniques.

(iv) The Possibility of Inaccuracies of Rules of Thumb – In some statistical contexts, investigators make use of rules of thumb as guidelines to their decision making and to justify whatever decisions they make. However, in some cases, these rules of thumb are simply erroneous or oversimplified (MacCallum, Widaman, Zhang & Hong, 2001; Marsh et al. 2004). Many principles are not universally valid; therefore, the rule of thumb can be misleading, even in SEM analysis. However, researchers have in most cases used rules of thumb in the mode-fit analysis. For example, the values of incremental fit indices like the Comparative Fit Index (CFI) (Bentler 1990) and the Tucker-Lewis Index (TLI) (Tucker & Lewis 1973) must exceed 0.90 to indicate an acceptable fit. Many studies have pointed out that these rules of thumb have been found to be erroneous or too lenient and the cut-off criteria is largely dependent on the chosen methodology, sample size, the complexity of the model among other factors (Browne, MacCallum, Kim, Anderson & Glaser 2002; Hu & Bentler, 1999; Marsh et al., 2004). Following from the limitations of the rule of thumb approach, some level of subjectivity is useful in model estimation to determine whether a model is a good fit (Marsh et al., 2004).

(v) Flaws in Design and Method cannot be overwritten by SEM – Despite the sophistication of the SEM; it cannot be used to redress the problem of an improperly designed study (Khine et al., 2013; Marsh et al., 2004). There is the possibility that a correct theoretical model, with all the required constructs and paths, can generate poor fit and produce highly biased estimates, in instances when the study is improperly designed. Therefore, it is important to justify the rationale guiding the decisions to choose the method and design as well as the likely impact of the choices made on findings and deductions.

The following section would briefly discuss the statistical software used for SEM analysis.

5.12. Definition of AMOS

Various authors (Arbuckle, 2012; Chinomona, 2014) agree that AMOS (Analysis of Moment Structures) is a statistical software mainly intended to perform covariance structure modeling, SEM and path analysis. It further analyses Variance (ANOVA), Analysis of Covariance (ANCOVA) and basic linear regression analyses. It stretches standard multivariate analysis methods, such as correlation, factor analysis, regression, factor analysis, ANOVA and it is also an additional component for SPSS (http://www.utexas.edu /its/help/spss/526). AMOS statistical software has an in-built GUI that makes it possible for researchers to specify models by drawing them, making it easy-to-use program for visual SEM (Arbuckle, 2005). Therefore, AMOS incorporates an easy-to-use graphical interface that has a cutting-edge computing engine for SEM. Moreover, SEM also has a fitted bootstrapping routine and handles missing data in a very prominent way (Chinomona, 2014). It is compatible with other software, such as SPSS and Microsoft Excel spread sheet and importing raw data into AMOS is easy. The specification, approximation, and assessment of models by researchers is simplified in AMOS (Arbuckle, 2012; Arbuckle & Wothke, 1999). The interrelationship between variables can be graphically presented and analysed accurately and efficiently by researchers using AMOS. Multiple equations showing various relationships can also be instantly computed through AMOS.

5.13.1. Methods Featured by AMOS

Techniques provided by AMOS for estimating SEMs include the following: (Arbuckle, 2012):

- Unweighted Least Squares; Generalized Least Squares; Browne's asymptotically distribution-free criterion; Scale-free least squares and Bayesian Estimation.

Table5.5: The Benefits of AMOS – Justification on the Choice of AMOS

Advantages of Using AMOS Statistical Software
• Ease of building accurate models as compared with other statistical packages. • AMOS generates equations to fit model by investigator • The simple draw tools in AMOS assist users to quickly specify, view, and modify a model graphically**.** • Model fit and adjustments are possible on AMOS. • Users have options of either the graphical user interface or non-graphical, programmatic interface • Structural Equation Modelling – for easy use, comparison, confirmation and refinement of models is made possible. • Its user interface is simplified and yields high quality path diagrams • Estimates of Model Parameters can be improved through the Bayesian analysis in AMOS • Users can either build attitudinal or behavioural models that show complex relationships in AMOS • It Providesvarious missing data imputation methods with the aim of creating different data sets

Source: Modified from Chinomona (2014); Arbuckle (2005)

Based on the above benefits AMOS, this study chose AMOS as the most appropriate statistical software to analyse data for the study and conduct SEM. However, a few limitations were noted, and they include the fact that AMOS graphics or diagrams appear complicated for someone who has no idea of how the software works. They seem impossible unless one gets to master the software (Chinomona, 2014). It is only after one 'engages' with the software that its application becomes easy and exciting.

CHAPTER VI

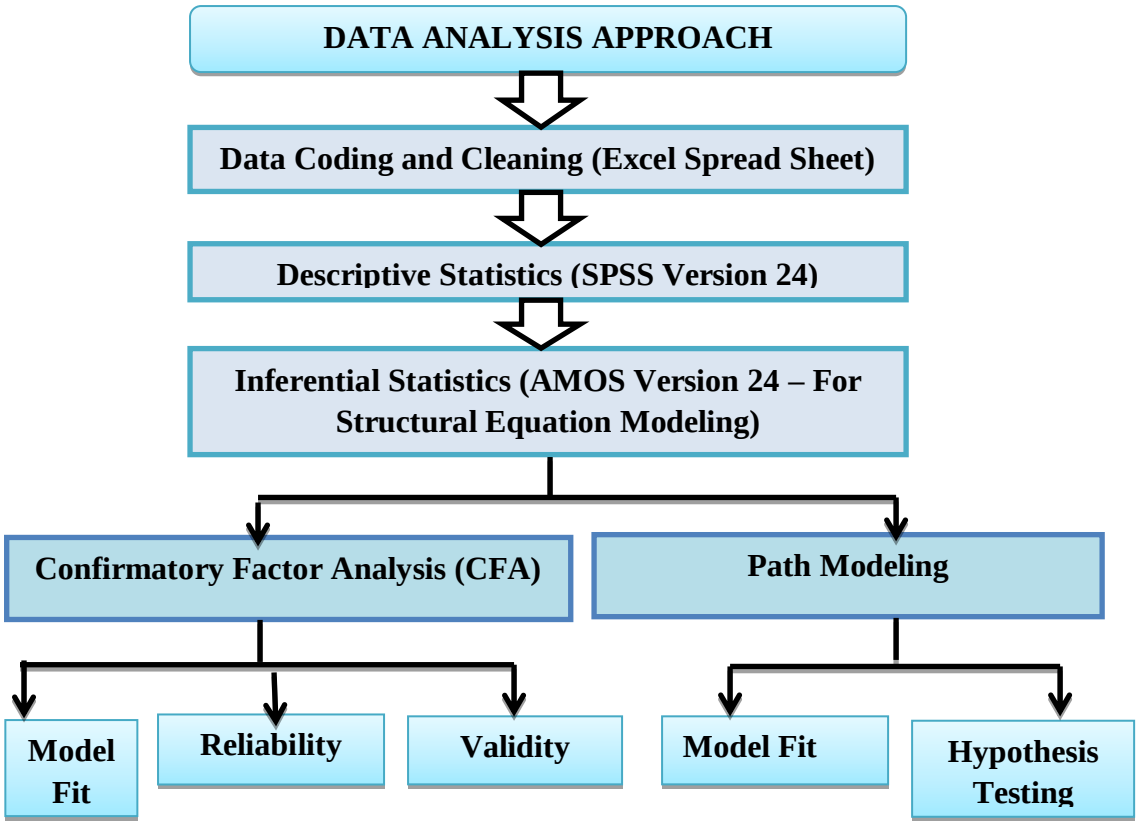
CHAPTER SIX DATA ANALYSISAPPROACH

"Marketing without data is like driving with your eyes closed." - Dan Zarrella

6.0. Introduction to the Chapter

The process of logically and systematically applying statistical techniques to illustrate, describe, condense and evaluate data is termed data analysis (Jandagh & Martin, 2010).It is focused on understanding the collected data through the application of reasoning (Zikmund et al., 2010). This study used both descriptive and inferential statistics to analyse the collected data. Tables and pie charts were used to present descriptive statistics (for example means, standard deviation, percentages) and pie charts. Inferential statistics were mostly presented on tables. On the one hand, descriptive statistics were used to analyse the demographic data, and on the contrary, inferential statistics were used to examine and make conclusions on the variables studied. This chapter shows how the collected data was coded, presented and the computed findings used to conclude the study. Figure 6.1 shows the methodology used to analyse the collected data.

Figure 6.1: Data Analysis Procedure



Source: This Study, (2017)

According to Figure, 6.1 the raw data was initially coded on an Excel spread sheet, verified and imported into SPSS for initial analysis and AMOS for further analysis. SPSS 24 statistical software was used to compute descriptive statistics, reliability (Cronbach's alpha

values), correlation and testing for mediation. Following the computation of Cronbach's alpha values and initial statistics AMOS 24 was used for SEM and inferential statistics. SEM is capable of simultaneously computing the measurements and the structural models, i.e. examining both CFA (measurement) and path (structural) models in one model. Given that SEM is a covariance based approach – AMOS was favoured to the component based approaches (e.g., Smart PLS). This was further supported by its prerequisite of accommodating a relatively large sample size, more than 200. Because this study managed acquired 212 valid responses from respondents, AMOS 24 automatically became the most appropriate statistical software, as it befits this purpose. Furthermore, the attractiveness of this analytical software rests on the fact that it facilitates an effective computation of the overall fit of the conceptual model and provides path coefficients. CFA was first done to validate the variables under study. This was computed through the calculation of model fit, reliability and validity. Following the validation of the constructs, path modeling was performed. Model fit was then calculated and results checked against those found under CFA. This was followed by hypothesis testing of the relationships between the constructs and the estimates. The following section details the processes followed with data processing before detailed analysis.

6.1. Data Processing

Data collected was processed in line with the outline of the research plan. According to (Khothari, 2004), data processing is the process of editing, coding, classification, and tabulation of the gathered data to make it amenable for analysis.

(i) Data Editing –It involves checking (a scrutiny of completed surveys) and altering data for legibility, consistency, to detect errors or omissions and correct them where possible (Zikmund et al., 2010). Data editing prepares the data for coding, transfer, and storage (Swanson & Holton, 2005). However, the limitation of data editing is the fact that it is a subjective process that may wrongly influence the data and thus the outcomes of the study. In this study, practical data editing issues encountered included incomplete questionnaires, non-response. These were dealt with to ensure data integrity.

(ii) Data Coding – Data coding is "the process of assigning a numerical score to the edited data" (Zikmund et al., 2010). Following the Likert scale used in the questionnaire codes of 1 to five were used to capture the responses from the respondents. To avoid double counting or to capture of questionnaires, feedback forms were numbered from 1-300 before the

commencement of the coding process. However, only 212 completed questionnaires were used in the analysis giving a response rate of 70.67%.

Table 6.1: How Raw Data Was Coded Prior To Analysis

CODING FOR DEMOGRAPHIC DATA			
Item	**Codes**	**Item**	**Codes**
Gender • Female • Male	 0 1	**Sector of Company** • Industrial Electronics • Household Electronics • IT Electronics • Telecom Electronics • Other Manufacturing	 1 2 3 4 5
Age • 18-25 • 36-45 • 46-55 • 56-65 • ≥ 66	 1 2 3 4 5	**Number of Years Firm has been in business** • Less than five years • Six to ten years • 11 to 15 years • 16 to 20 years • More than 20 years	 1 2 3 4 5
Educational Level • Primary • Matric • Diploma • Degree • Post Graduate Degree • Other	 1 2 3 4 5 6	**Listing of firm on major stock exchange** • Listed • Not listed	 0 1
		Position in Company • Marketing Manager • Owner/ Director • Technical Director • CEO • CIO	 1 2 3 4 5

Source: This study (2017)

Coding for Research Variables

The table below shows how the edited data was coded on an Excel Spreadsheet. The coded data file was kept as an electronic file and was ready for analysis. In this study, phase one of the analysis involved initially testing the measurement instruments for validity and reliability. The following section discusses the statistical tools used for analysis.

Table 6.2: Coding for Research Variables

CODING FOR RESEARCH VARIABLES		
Variable	**Coding Style**	**Codes**
Outcome Variables		
• Green Corporate Social Investment	GCSI	All Codes Ranged between 1 and 5: Strongly Disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly Agree = 5
• Firm Marketing Performance	FPM	
• Firm Financial performance	FPF	
Mediating Variables		
• Green Marketing Capabilities-product	GMCP	
• Green Marketing Capability Sales	GMCS	
• Green Relationship learning	GRL	
• Green Human Capital Investment	GHCI	
Predictor Variables		
• Corporate Commitment to green	ENV (1-16)	

6.3. Descriptive Analysis

Following editing and coding of the descriptive data analysis was carried out. This is "the elementary transformation of raw data in a way that describes the essential characteristics such as central tendency, distribution, and variability" (Zikmund et al., 2010:486).Out of the total of 300 questionnaires given out, a total of 2012 completed questionnaires were analysed with an overall response rate of 70.67%. This is a significant response rate in line with previous studies on the sector.

6.2. Evaluating the Mean Values of Variable Index

All constructs in the study questionnaire were examined through some statements or instruments. These tools examining the same construct were converted into a variable index through calculating mean values of the responses. The mean of a data set is "the average of the numbers: and it represents an estimated "central" value of the data set" (http://www.maths

isfun.com/definitions/mean.html). Table 6.2 presents the mean values and the standard deviation of values for each construct. The spread or variability of the sample distribution values from the mean is called the standard deviation (Hair et al., 2007). While a small standard deviation shows that the distribution of responses is close to the mean, a large standard deviation indicates that that distribution of responses is further away from the mean (Hair et al., 2007; Sclove, 2001). The boundary of the level of standard deviation should be consistent with the applied range of scale. The employed limit for the current research, as defined by Sclove (2001), was the 5-point Likert scale. As a result, response distributions with sigma below one was deemed consistent; whereas those with sigma, more than one were considered to be inconsistent. The mean and standard deviation values of variables of the current study are as follows in Table 6.2.

Table 6.3: Mean and Standard Deviation Values of the Study Variables

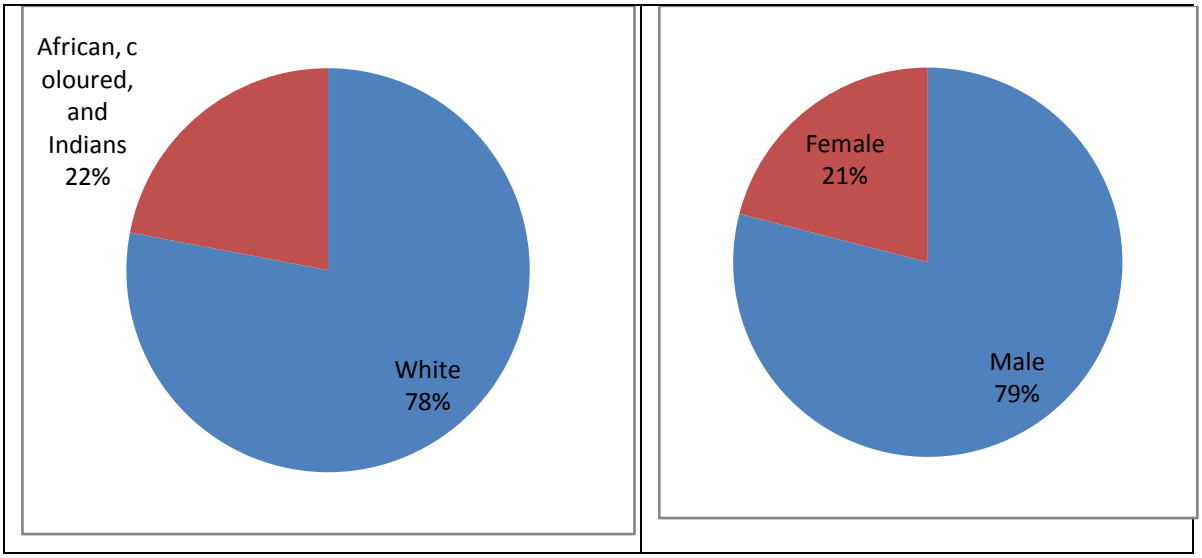
Study Variable	Mean	Standard Deviation
Firm Commitment to Green	3.36	1.24
Green Marketing Capability Product	3.54	1.05
Green Marketing Capability Sales	3.34	1.22
Green Relationship learning	3.21	1.25
Green Human Capital Investment	3.86	1.07
Green Corporate Social investment- Economic	3.90	1.10
Green Corporate Social investment- Social	3.76	1.10
Green Corporate Social investment- Environmental	3.06	1.06
Firm Performance-Marketing	3.86	0.94
Firm Performance- Financial	3.75	0.96

Note: Valid N = 212

According to the results of this research, the mean values show that on average, most of the respondents were agreeing with the statements. Given that the response distribution for all the variables was below one for each of the constructs, it was deemed to be consistent. A detailed account of each item is provided under the analysis of the Likert scale response items and results thereof are presented in Table 6.5.

6.2.1. Respondent Profile

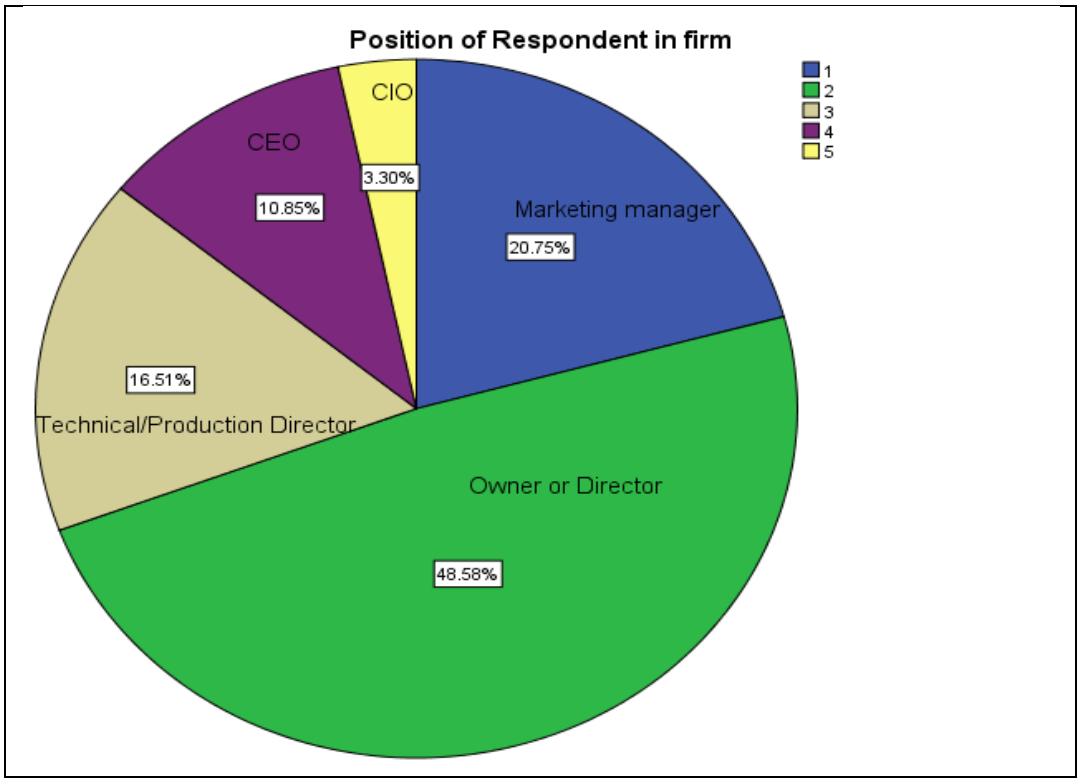
Figure 6.2 Genders and Race of Respondents



Source, This study (2017)

Figure 6.2 presents the gender and race of the respondents. According to the summary statistics, 76.9% of the respondents were male and 23.1% female. This shows that the industry was mostly male dominated at high levels of management and ownership. Examining the race of the race of the respondents, the data also showed that 78.3% of the interviewees were whites and 21.7% of the interviewees were blacks (African, coloured, and Indians). This statistic also indicates that this sector also mostly white dominated in senior management and ownership.

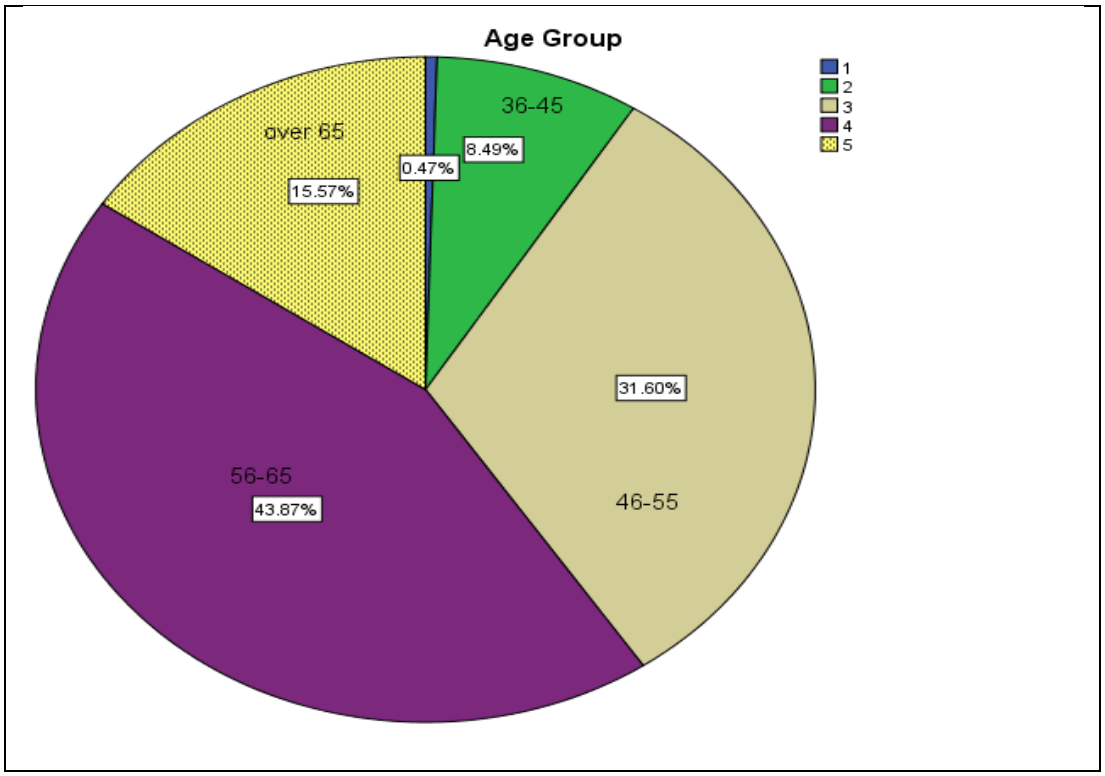
2. Figure 6.3. Position of Respondents in Firm



Source: This study (2017)

Figure 6.3 presents the age group and position of the respondents in the firm. Examining the position of the respondents in the industry: 20.8% of the interviewees were Marketing Managers; 48.6% were Owner/Director; 16.5% Technical Manager; 10.8% CEO and 3.3% CIO respectively. These statistics showed that most of the respondents were mostly owners and marketing managers, this was relevant for the studies as these are mostly decision makers who can influence the firm's commitment to green.

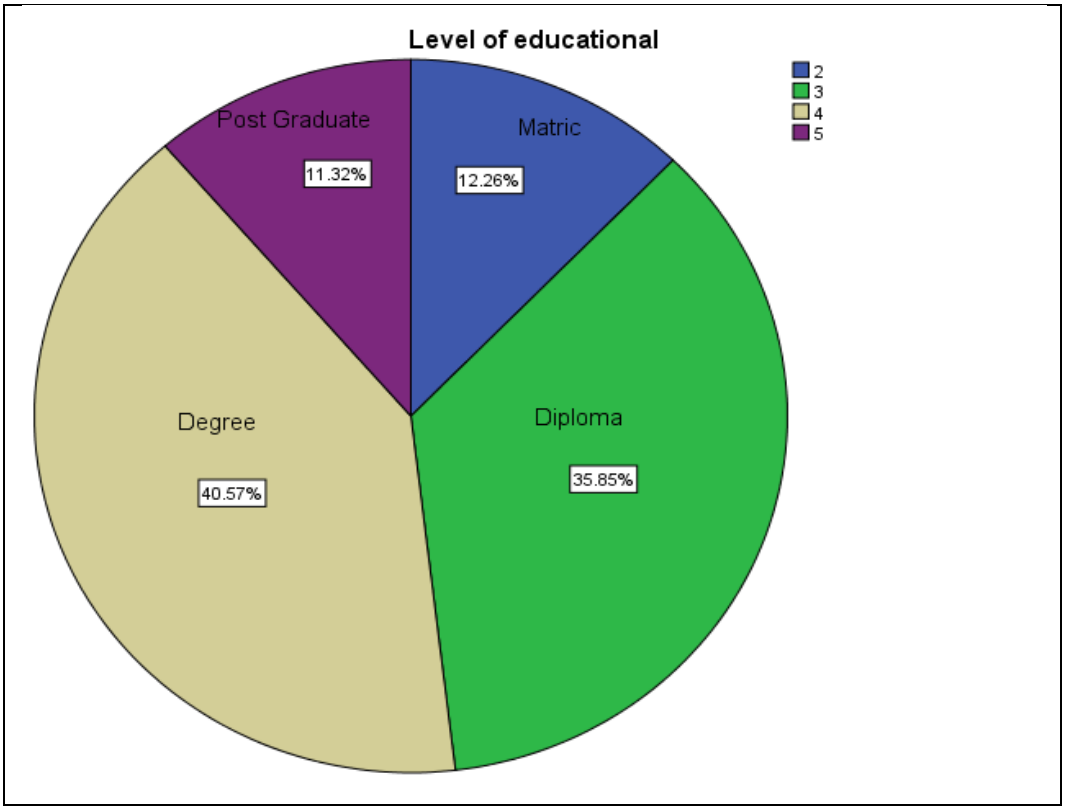
Figure 6.4. The Age and Position of Respondents in Firm



Source: This study (2017)

Figure 6.4 presents the age group of respondents. Looking at the age of the respondents, it was also normally distributed with most of the respondents between the ages 46 and 65 years old.0.5% of the respondents were between the ages of 18 to 35, 8.5% between the ages 36-56 years old, 31.6% between 46 and 55years old, 43.9% between 56 and 65 years old and 15.6 % above 65 years. The age distribution of most respondents over 45years old was not surprising as the respondents were mostly senior managers and owners and not individuals still starting their carriers.

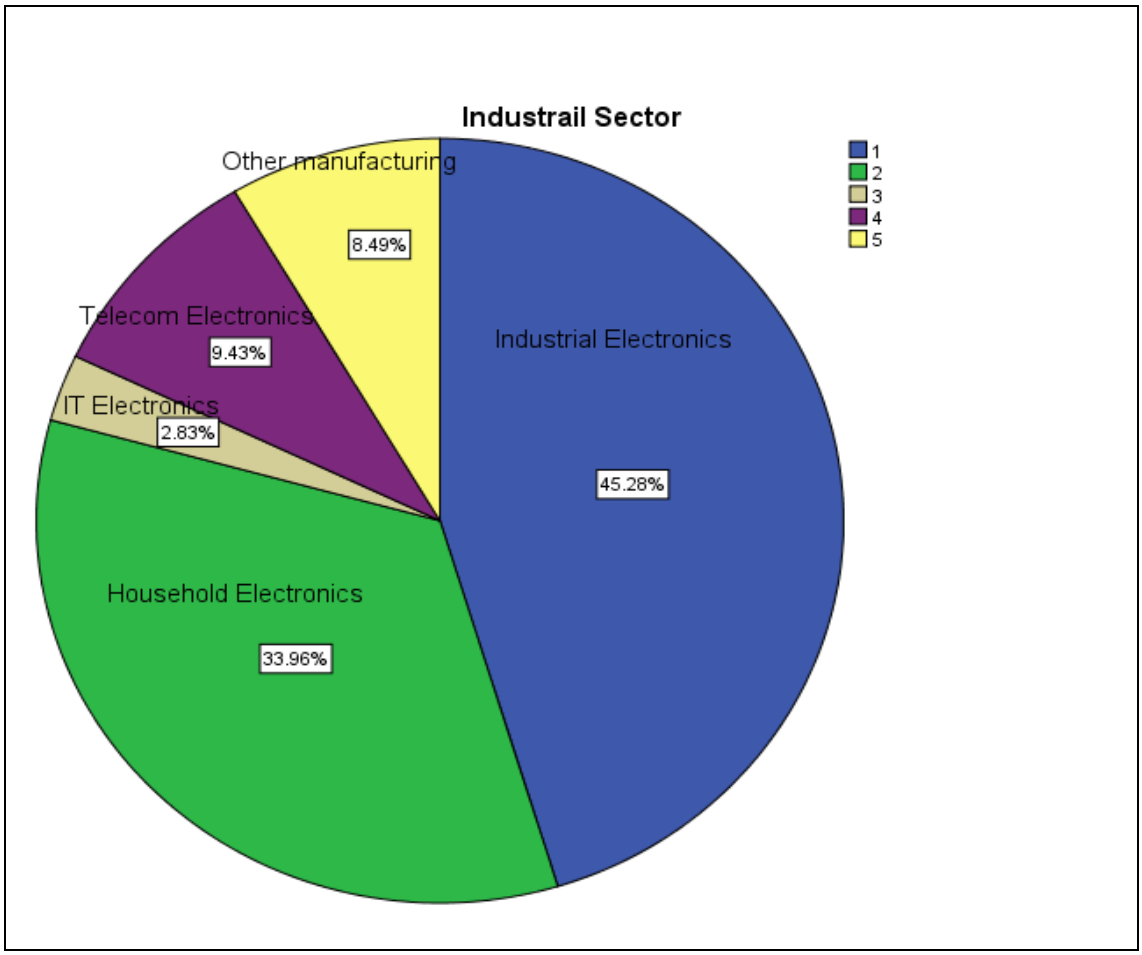
Figure 6.5 Education levels of the Respondents



Source: this study (2017)

According to figure 6.5, the respondents mostly had a post matric qualification: 12.3% of the respondents had only a Matric qualification, 35.8% had a Diploma, 40.6% had a university degree, and 11.3% had a post-graduate degree. Given the fact that the respondents were mostly senior managers and owners, in a skilled profession, there is the need for post matric education, and that was reflected in the findings.

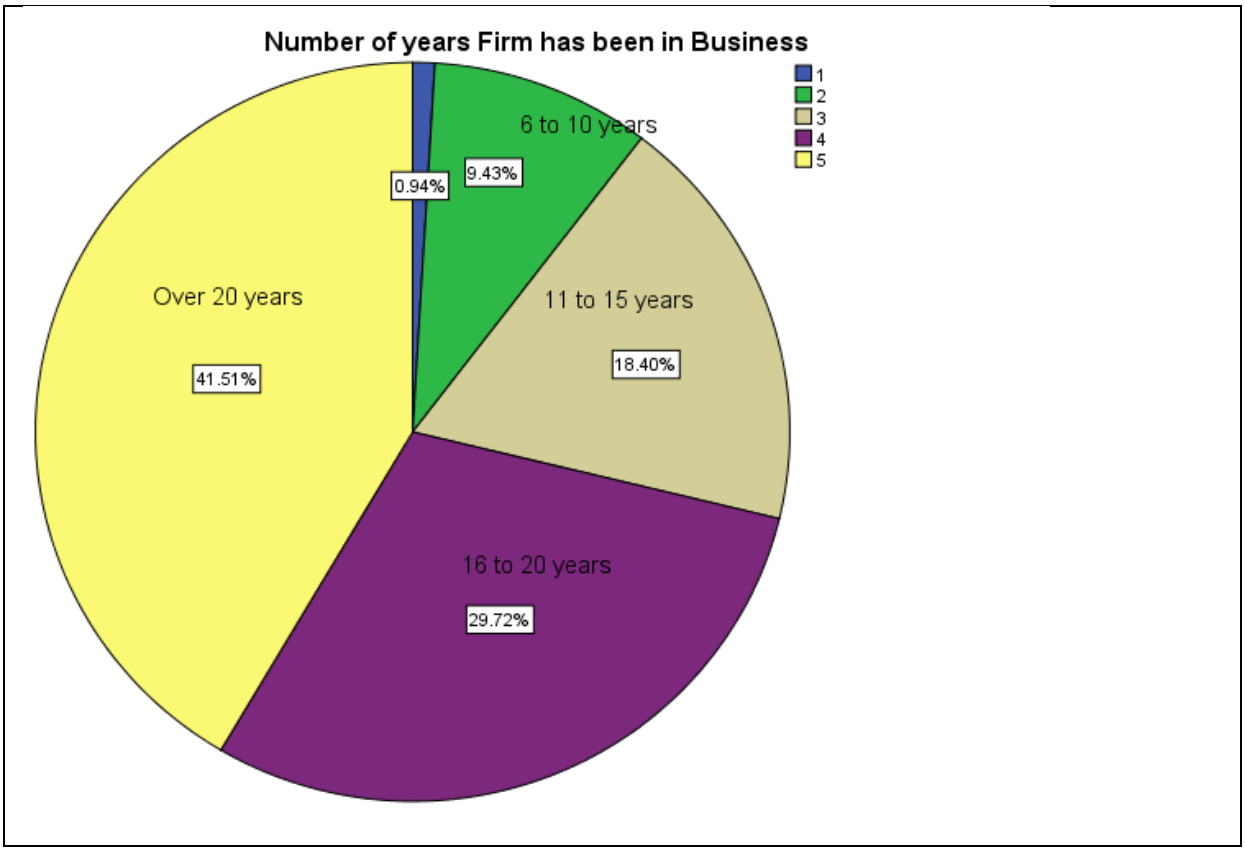
Figure 6.6 Industry Sector of the Firm



Source: This study (2017)

Figure 6.6 presents the industry sector of the business. Examining the distribution of the respondents according to the industry sector, 45% of the respondents were from the Industrial Electronics; 35.0% from Household Electronics; 2.8% IT Electronics; 9.4% Telecom Electronics; and 8.5% Other Manufacturing. Within the electronics sector, industrial and household electronics still constitute the majority of manufacturers.

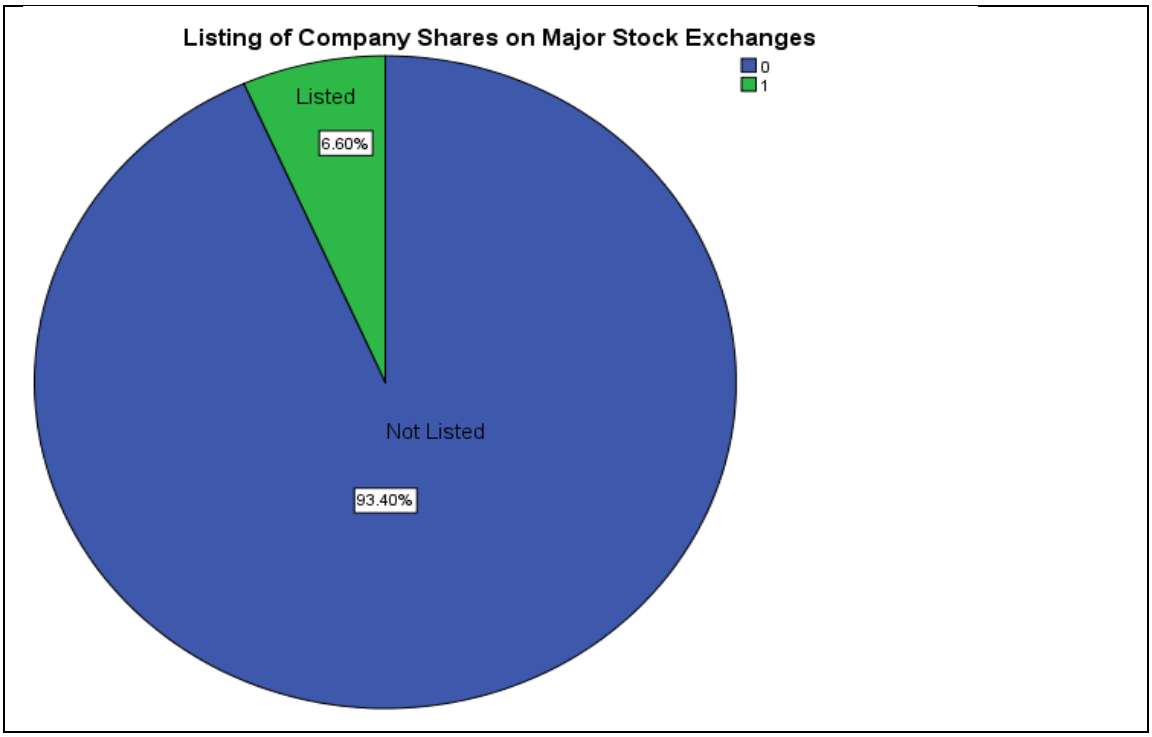
Figure 6.7 Number of Years Firm Has Been in Business



Source: This study (2017)

According to the data representing the number of years the firm has been in operation: Only 0.9% of the companies have been in business for less than five years; 9.2% have been in business between 6 and 10 years; 18.4% between 11 and 15 years; 29.7% between 16 and 20 years; and 51.5% have been in business for more than two decades. This was also important as the majority of the firms had been in business for over five years and therefore had enough time to develop policies including a commitment to green.

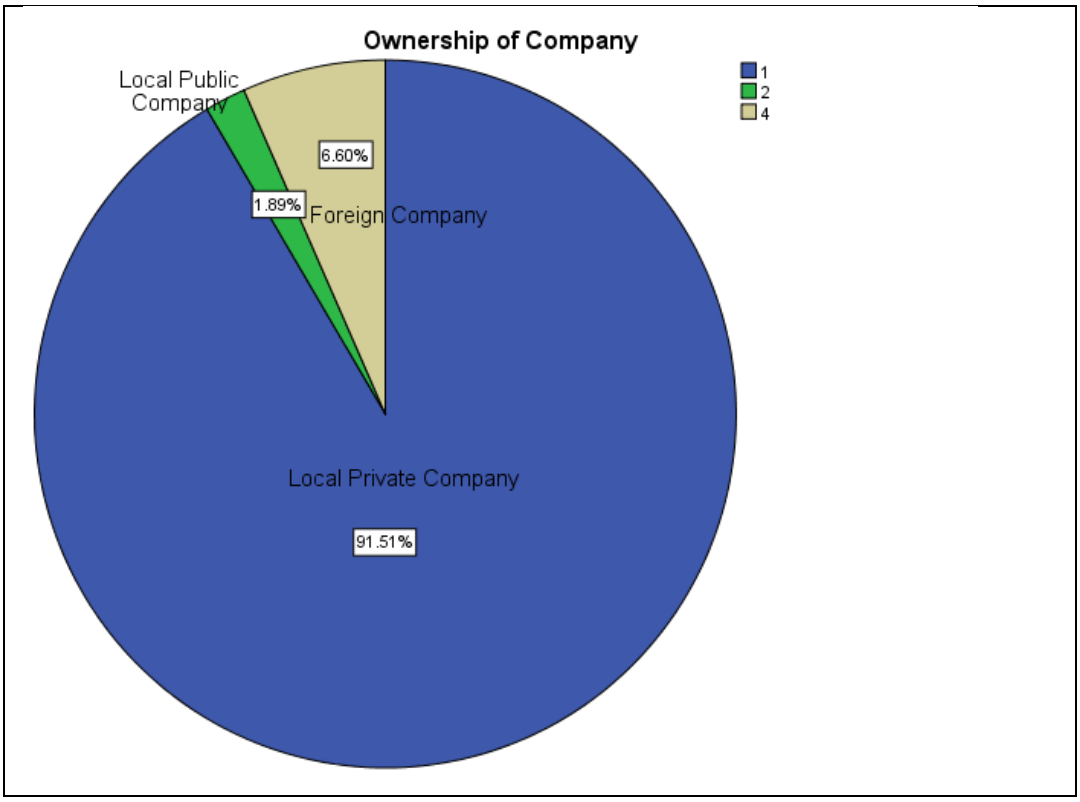
Figure 6.8. Listing of Firm on Stock Exchange



Source: This study (2017)

Figure 6.8 presents the ownership of the company and the listing of the company on a major stock exchange. Examining the data on whether the firms were listed on the stock exchange: only 6.6% were listed while were 93.4% not listed. This shows that the majority of the firms in the sector are private companies. This would also mean that the information about the firm apart from what is in the public domain can only be gotten through questionnaire and direct engagement with the firm.

Figure 6.9. Ownership of Company



Source: This study, (2017)

Figure 6.9 presents the distribution of the different firms according to ownership types. Examining the data on ownership of the companies 91.5% of the firms studied were South African Owned private companies, 1.9% were South African Owned public companies, and 6.6% were foreign owned companies. These statistics also show that the industry is dominated by locally owned companies. This has implication for compliance requirements and commitment to green according to South African laws.

Table 6.4: Sample Profile Characteristics

RESULTS FOR DEMOGRAPHC CHARACTERISTICS					
Gender	**Frequency**	**Percentage (%)**	**Age**	**Frequency**	**Percentage (%)**
Male	163		18-35	1	
Female	49	76.9	36-45	18	0.5
		23.1	46-55	67	8.5
			56-65	93	31.6
Total	**212**		≥ 66	33	43.9
		100.0	**Total**	**212**	15.6
					100.0
Race	**Frequency**	**Percentage (%)**	**Educational Level**	**Frequency**	**Percentage (%)**
White	**166**		Matric	**26**	12.3
Black (African,	**46**	**78.3**	Diploma	**76**	35.8
Indian, Coloured)		**21.7**	University	**86**	40.6
			Postgraduate	**24**	11.3
Total		**100.0**			
Indusrty Sector	**212**	**Percentage**	**Total**	**212**	**100.0**
Industrial Electronics	**Frequency**		**Number of Years of firm Operations**	**Frequency**	Percentage
Household Electronics	**96**	**45.3**			
IT Electronics	**72**	**34.0**	Less than five years	**2**	**0.90**
Telecom Electronics	**6**	**2.8**	Between 6 and 10 years	**20**	**9.2**
Other Manufacturing	**20**	**9.4**	Between 11 and 15 years	**39**	**18.4**
	18	**8.5**	Between 16 and 20 years	**63**	**29.7**
Total	212	**100**	More than 20 years	**88**	**41.5**
Position in Company	**Frequency**	**Percentage (%)**	**Total**	**212**	**100**
Marketing Manager	**44**	20.8	**Firm Listing on Stock Exchange**	**Frequency**	**Percentage (%)**
Owner/Director	**103**	48.6		**198**	93.4
Technical Manager	**35**	16.5	Listed	**14**	6.6
CEO	**23**	10.8	Not Listed		
CIO	**7**	3.3			
Total	**212**	**100.0**	**Total**	**212**	**100.0**

Source: This Study (2017)

Table 6.4 presents the sample profile characteristics for all the respondents. According to the table a majority response variables were normally distributed.This showed that most of the variables converged around the mean.

6.2.2. General Descriptive Analysis

To get a broader picture of a firm commitment to green, green marketing capability, green relationship learning, green human capital investment, green corporate social investment and firm performance, data was gathered and the results are presented in Table 6.5.

Table 6.5: General Descriptive Analysis

Variable		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Our Company has an environmental policy	Frequency	28	30	17	95	42
	Percentage	13.2	14.2	8	44.8	19.8
Our company has an ISO14001 certification	Frequency	31	34	23	89	35
	Percentage	14	16	10.8	42	16.5
Overall, I can say that our company is committed to green in its policy	Frequency	7	27	0	140	38
	Percentage	3.3	12.7	0	66	17.9
Our company chooses materials that consume the least amount of energy and resources for conducting our product development or design	Frequency	9	41	28	96	38
	Percentage	4.2	19.3	13.2	45.3	17.9
Our company uses the least amount of materials to conduct the product development or design	Frequency	11	33	58	80	30
	Percentage	3.3	21.2	19.8	41.5	14.2
Our company would circumspectly evaluate whether our products are easy to recycle, reuse, and decompose during the product development or design	Frequency	9	33	60	80	30
	Percentage	4.2	15.6	28.2	37.7	14.2
Our company implements green advertising activities	Frequency	36	28	30	84	34
	Percentage	17	13.2	14.2	39.6	16
Our company implements green labeling activities	Frequency	26	36	52	68	30
	Percentage	12.3	17	24.5	32.1	14.2
Overall our company considers green marketing a good thing	Frequency	6	26	40	94	46
	Percentage	2.8	12.3	18.9	44.3	21.7

Variable		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Our company establishes joint teams with partners to discuss environmental issues	Frequency	44	38	34	68	28
	Percentage	20.8	17.9	16	32.1	13.2
Our company is part of an industry association promoting green products	Frequency	54	30	22	84	22
	Percentage	25.5	14.2	10.4	39.6	10.4
Overall our company considers green relations learning a good thing	Frequency	10	20	28	120	34
	Percentage	4.7	9.4	13.2	56.6	16.0
Overall, our company considers green human capital investment a good thing	Frequency	20	14	42	104	32
	Percentage	9.4	6.6	19.8	49.1	15.1
We are committed to job creation	Frequency	14	14	30	68	86
	Percentage	6.6	6.6	14.2	32.1	40.6
Sales in our company are increasing	Frequency	6	24	29	112	41
	Percentage	2.8	11.3	13.7	52.8	19.3
Overall, I can say the financial performance of our company is increasing	Frequency	10	12	24	124	42
	Percentage	4.7	5.7	11.3	58.5	19.8

Source: This study (2017)

6.2.3. Descriptive Analysis for Likert Scale Response Items

According to Lobsy and Wetmore (2012), in measuring variability using descriptive statistics, the ordinal measurement scale items must contain a median, mean or mode as measures of central tendency, together with frequencies to measure variability. Likert-type response items fall within the ordinal scale measurements (Boone & Boone, 2012). Moreover, Likert scales show a methodical continuum of response classifications – i.e. there is a pattern or order from Strongly Disagree to Strongly Agree. They also show a balanced number of both positive and negative response options and a numeric value can be assigned to each category (Lobsy & Wetmore, 2012).

6.2.4 Likert Scale Response Items

Likert-type response items are classified under ordinal scale measurements (Boone and Boone, 2012). Likert scales have a systematic continuum of response classifications with a

methodological pattern from Strongly Disagree to Strongly Agree. A numeric value is assigned to each category. The suggestion is that ordinal measurement scale items have to contain a mode, mean or median as measures of central tendency, along with frequencies to measure variability.

(a) Analysis of the Mean [As a Measure of Central Tendency]

- Table 6.5 Shows that the construct firm commitment to green is fairly normally distributed, with mean scores ranging between 3.1 and 3.9 – i.e. revolving around the center, which is represented by 3 (as 'Neutral'). This may explain why all the measurement instruments were reliable and that respondent was fairly agreeing with the statements.
- The construct green marketing capability product was also normally distributed, with the mean score 3.36. The instrument was highly reliable.
- The construct green marketing capability sales was also normally distributed, with the mean score 3.34. The instrument was highly reliable.
- The construct green relationship learning was also normally distributed, with the mean score 3.21. The instrument was highly reliable
- The construct green human capital investment also normally distributed, with the mean score 3.86. The instrument was highly reliable
- The construct green corporate social investment economic dimension also normally distributed, with the mean score 3.02. The instrument was highly reliable
- The construct green corporate social investment social dimension also normally distributed, with the mean score 3.86. The instrument was highly reliable
- The construct green corporate social investment environmental dimension also normally distributed, with the mean score 3.06. The instrument was highly reliable
- The construct firm financial performance also normally distributed, with the mean score 3.9. The instrument was highly reliable
- The construct firm marketing performance also normally distributed, with the mean score 3.8. The instrument was highly reliable

Detailed results for all the mean values for the items are presented in Table 6.5

(b) Analysis of Frequencies [As a Measure of Variability]

I. Firm Commitment to green:

- ENVC1 to ENVC16 – The majority of respondents for the sixteen measurement instruments agreed with the statements that said "Our Company has an environmental policy, 13.2% strongly disagreed, 14.2% disagree, 8% was neutral while 44.8% and 19.8% agreed

and strongly agreed respectively "; "Our company has an environmental vision or mission"; Our company has an ISO14001 certification 14% strongly disagreed, 16% disagree, 10.8% was neutral while 42% and 16.5% agreed and strongly agreed respectively" and "Overall, I can say that our company is committed to green in its policy 3.3% strongly disagreed, 12.7% disagree, while 66% and 17.9% agreed and strongly agreed respectively." A majority of the respondents agreed with the statements relating to a firm commitment to green. These frequencies show that, in principle, a majority of the electronics manufacturing firms commit to green. However, there are still a significant, though a smaller proportion of firms is not committing to green.

II. Green Marketing capability-product:

- GMCP1 to GMCP8 – The majority of respondents for the eight measurement instruments agreed with the statements that said "Our company chooses materials that produce the least amount of pollution for conducting the product development or design"; "Our company chooses materials that consume the least amount of energy and resources for conducting our product development or design 4.2% strongly disagreed, 19.3% disagree, 13.2% was neutral while 45.3% and 17.9% agreed and strongly agreed respectively"; "Our company uses the least amount of materials to conduct the product development or design3.3% strongly disagreed, 21.2% disagree, 19.8% was neutral while 41.5% and 14.2% agreed and strongly agreed respectively"; and "Our company would circumspectly evaluate whether our products are easy to recycle, reuse, and decompose during the product development or design 4.2% strongly disagreed, 15.6% disagree, 28.3% was neutral while 37.7% and 14.2% agreed and strongly agreed respectively" among others.

III. Green Marketing Capability- Sales:

- GMCS1 to GMCS9 – The majority of respondents for the nine measurement instruments strongly agreed with the statements that said "Our company implements green planning activities 9.4% strongly disagreed, 14.2% disagree, 20.8% was neutral while 33% and 22.6% agreed and strongly agreed respectively"; "Our company implements green advertising activities 17.0% strongly disagreed, 13.2% disagree, 14.2% was neutral while 39.6% and 16.0% agreed and strongly agreed respectively""; "Our company implements green public relations activities 19.8% strongly disagreed, 14.2% disagree, 21.7% was neutral while 29.2% and 15.1% agreed and strongly agreed respectively";

• "Our company implements green labelling activities 12.3% strongly disagreed, 17.0% disagree, 25.5% was neutral while 32.1% and 14.2% agreed and strongly agreed respectively""; "Our company implements green distribution activities 8.5% strongly disagreed, 14.2% disagree, 16% was neutral while 45.3% and 16% agreed and strongly agreed respectively";

• "Overall our company considers green marketing a good thing 2.8% strongly disagreed, 12.3% disagree, 18.9% was neutral while 44.3% and 21.7% agreed and strongly agreed respectively."

IV. Green Relationship Learning:

• GRL1 to GRL5 – A majority of respondents for the five measurement items agreed with the statements that said "Our company exchanges information on environmental management of products with relevant partners 13.2% strongly disagreed, 17.9% disagree, 17.9% was neutral while 39.6% and 11.3% agreed and strongly agreed respectively"; "Our company learns from its relevant partners to adjusts its understanding of environmental trends in technology related to its business 11.3% strongly disagreed, 17.9% disagree, 22.6% was neutral while 34.9% and 13.2% agreed and strongly agreed respectively"; "Our company establishes joint teams with partners to discuss environmental issues 20.8% strongly disagreed, 17.9% disagree, 16% was neutral while 32.1% and 13.2% agreed and strongly agreed respectively"; "Our company is part of an industry association promoting green products 25.5% strongly disagreed, 14.2% disagree, 10% was neutral while 39.6% and 10.4% agreed and strongly agreed respectively"; "Overall our company considers green relations learning a good thing 4.7% strongly disagreed, 9.4% disagree, 13.2% was neutral while 56.6% and 16% agreed and strongly agreed respectively".

V. Green Human Capital Investment:

GHCI1 to GHCI5 – A majority of respondents for the five measurement items agreed with the statements that said "In our company, green teams are being setup to tackle environmental problems 21.7% strongly disagreed, 18.1% disagree, 11.3% was neutral while 34% and 14.2% agreed and strongly agreed respectively "; "In our company employees are actively involved in the process of determining environmental goals 17.0% strongly disagreed, 24.5% disagree, 16.0% was neutral while 26.4% and 16% agreed and strongly agreed respectively"; "In our company employees are encouraged to give suggestions on environmental performance improvements 16.0% strongly disagreed, 15.1% disagree, 23.6%

was neutral while 32.1% and 13.2% agreed and strongly agreed respectively"; "In our company joint and team problem solving on environmental issue are carried out 13.2% strongly disagreed, 19.8% disagree, 17.9% was neutral while 35.8% and 13.2% agreed and strongly agreed respectively"; "Our company trains employees in environmental issues 14.2% strongly disagreed, 13.2% disagree, 15.1% was neutral while 44.3% and 13.2% agreed and strongly agreed respectively"; "Overall, our company considers green human capital investment a good thing 9.4% strongly disagreed, 6.6% disagree, 19.8% was neutral while 49.1% and 15.1% agreed and strongly agreed respectively".

VI. Green Corporate Social Investment- Economic Dimension:

• GCSIE1 to GCSI10 – A majority of respondents for the five measurement items agreed with the statements that said "We are concerned about offering high-quality products and/or services to our customers 3.8% strongly disagreed, 6.6% disagree, 7.5% was neutral while 38.7% and 43.4% agreed and strongly agreed respectively'; "We are characterized as having the best quality-to-price ratio for our products and/or services 6.6% strongly disagreed, 8.5% disagree, 8.5% was neutral while 40.4% and 35.8% agreed and strongly agreed respectively"; "The guarantee of our products and/or services is broader than the market average 6.6% strongly disagreed, 6.6% disagree, 14.2% was neutral while 45.3% and 27.4% agreed and strongly agreed respectively"; "We provide our customers with accurate and complete information about our products and/or services 2.8% strongly disagreed, 11.3% disagree, 13.2% was neutral while 45.3% and 27.4% agreed and strongly agreed respectively"; "We foster business relationships with our suppliers 6.6% strongly disagreed, 5.7% disagree, 10.4% was neutral while 37.7% and 39.6% agreed and strongly agreed respectively"; "Respect for consumer rights is a management priority for our company 7.5% strongly disagreed, 5.7% disagree, 16% was neutral while 42.5% and 28.3% agreed and strongly agreed respectively ".

VII. Green Corporate Social Investment- Social Dimension:

a. GCSIS1 to GCSIS10 – A majority of respondents for the five measurement items agreed with the statements that said "We support the employment of disabled people and people at risk of social exclusion 2.8% strongly disagreed, 11.3% disagree, 17% was neutral while 37.7% and 31.1% agreed and strongly agreed respectively"; "We foster training and professional development of our employees"; "We comply with standards related to labour risks, health, safety and hygiene programmes 2.8% strongly disagreed, 7.5% disagree, 13.2%

was neutral while 42.5% and 34% agreed and strongly agreed respectively"; "We are committed to job creation 6.6% strongly disagreed, 6.6% disagree, 14.2% was neutral while 32.1% and 40.6% agreed and strongly agreed respectively"; "We have human resource policies aimed at facilitating the conciliation of employees' professional and personal lives. Of the 212 respondents, 6.6% strongly disagreed, 6.6% disagree, 15.1% was neutral while 47.2% and 24.5% agreed and strongly agreed respectively"; "We consider employees' initiatives and proposals in management decisions. Of the 212 respondents, 1.9% strongly disagreed, 12.3% disagree, 17.9% was neutral while 32.1% and 35.8% agreed and strongly agreed respectively"; "We are committed to the improvement of the quality of life of our employees. Out of the 212 respondents, 1.9% strongly disagreed, 8.5% disagree, 13.2% was neutral while 45.3% and 31.1% agreed and strongly agreed respectively".

VIII. Green Corporate Social Investment –Environmental Dimension:

GCSIENV1 to GCSIENV7 – A majority of respondents for the five measurement items agreed with the statements that said "We can minimise our environmental impact using environmentally-friendly products. Out of the 212 respondents, 3.8% strongly disagreed, 11.3% disagree, 9.4% was neutral while 48.6% and 26.9% agreed and strongly agreed respectively"; "We make investments in energy savings programmes. Out of the 212 respondents, 8.5% strongly disagreed, 14.2% disagree, 11.3% was neutral while 41.5% and 24.5% agreed and strongly agreed respectively"; "We adopt programmes for the introduction of alternative sources of energy. Out of the 212 respondents, 12.3% strongly disagreed, 5.7% disagree, 25.5% was neutral while 31.6% and 25% agreed and strongly agreed respectively"; "We participate in activities related to the conservation and betterment of the natural environment." Out of the 212 respondents, 12.3% strongly disagreed, 8.5% disagree, 21.7% was neutral while 32.1% and 25.5% agreed and strongly agreed respectively"; "We are in favour of reductions in gas emissions and the reduction of wastes, and in favour of recycling materials. Out of the 212 respondents, 2.8% strongly disagreed, 3.8% disagree, 18.9% was neutral while 40.5% and 33.8% agreed and strongly agreed respectively"; "We have a positive predisposition to the use, purchase, or production of green goods. Out of the 212 respondents, 2.8% strongly disagreed, 11.3% disagree, 14.2% was neutral while 46.2% and 25.5% agreed and strongly agreed respectively"; "We value the use of recyclable containers and packaging. Out of the 212 respondents, 0.9% strongly disagreed, 2.8% disagree, 13.2% was neutral while 51.4% and 31.6% agreed and strongly agreed respectively".

Table 6.6: Testing the Reliability of Constructs – Cronbach's Alpha

Research Constructs	Cronbach α Value	Standardised Cronbach α Value
Firm Commitment to green	0.952	0.953
Green Marketing Capability-product	0.929	0.929
Green relationship learning	0.904	0.903
Green Human Capital Investment	0.958	0.959
Green CSI- Environmental Dimension	0.917	0.910
Firm Marketing performance	0.912	0.911
Firm Financial performance	0.962	0.963

Source: This study (2017)

6.2 5 Demographic Differences in Firm Commitment to Green and Firm Performance

To determine if there were any discrepancies in the firm's commitment to green and firm performance among, different ages of managers, race, industry sector, number of years the firm had been in business, listing of firms on the leading stock exchange, a one-way ANOVA was conducted for each of the identified demographic variables (age, gender, sector, size of company, number of years firm has been in business, ownership of business and listing of firms on the main stock exchange). ANOVA is centered on the concept of variance. Practically, the procedure produces two different estimates of the population variance from the data. This is followed by calculating a statistic from the ratio of the two estimates (between a group and within group variation). The ration of the between group variance to the within group variance is the F-ratio. When population means are not equal, we get a significant F-ratio. To determine whether the scores in each group have homogenous variances, Levene's test is used. In this study, all necessary conditions of population normality and homogeneity were met before conducting the ANOVA test.

6.2.5.1 One Way ANOVA – for the different variables

To test whether there was any difference in firm commitment to green and firm performance across sex of the managers, level of education, age group, race, industrial sector, number of

years firm has been in business, listing of companies on JSE, ownership of company and position of respondent in company, a one-way ANOVA test was conducted. Table 6.9 presents the Levene's test of Homogeneity of Variances.

Table 6.5.1.: Test of Homogeneity of Variances

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
Sex	5.159	4	207	.001
Level of educational	1.408	4	207	.232
Age Group	1.224	4	207	.302
Race	7.299	4	207	.000
Industrial Sector	1.956	4	207	.103
Number of years Firm has been in Business	.707	4	207	.588
Listing of Company Shares on Major Stock Exchanges	8.554	4	207	.000
Ownership of Company	14.428	4	207	.000
Position of Respondent in firm	2.377	4	207	.053

Source: This study (2017)

P- Values greater than 0.05 are insignificant and show the population variance are not different across the sex, level or education or race studied. From our computation in this study, the P-value of 0.001 is less than 0.05- significant. Therefore, one can confidently say that the population variances are unequal across the different sexes- males and females. This was also the case for ownership of company and listing of company on stock exchange.

However, six of the nine constructs in the study had Levene's statistics with P-values greater than 0.05 or insignificant, showing that the population variances are different. These constructs were: age group, level of education, industrial sector, and number of year's firm has been in business and position of respondent in company. Therefore, one can confidently conclude that population variances are equal across different education levels, age groups, industrial sectors, firm age, and position of respondent in firm.

Table 6.5.2: ANOVA of Descriptive Variables

ANOVA								
				Sum of Squares	df	Mean Square	F	Sig.
Sex	Between Groups	(Combined)		1.184	4	0.296	1.732	0.144
		Linear Term	Unweighted	0.855	1	0.855	4.999	0.026
			Weighted	0.658	1	0.658	3.849	0.051
			Deviation	0.526	3	0.175	1.026	0.382
	Within Groups			35.396	207	0.171		
	Total			36.580	211			
Level of educational	Between Groups	(Combined)		1.125	4	0.281	0.383	0.820
		Linear Term	Unweighted	0.844	1	0.844	1.150	0.285
			Weighted	0.733	1	0.733	0.999	0.319
			Deviation	0.392	3	0.131	0.178	0.911
	Within Groups			151.856	207	0.734		
	Total			152.981	211			
Age Group	Between Groups	(Combined)		7.389	4	1.847	2.576	0.039
		Linear Term	Unweighted	1.956	1	1.956	2.727	0.100
			Weighted	0.949	1	0.949	1.323	0.251
			Deviation	6.441	3	2.147	2.993	0.032
	Within Groups			148.474	207	0.717		
	Total			155.863	211			
Race	Between Groups	(Combined)		0.698	4	0.175	1.023	0.396
		Linear Term	Unweighted	0.229	1	0.229	1.339	0.248
			Weighted	0.304	1	0.304	1.783	0.183
			Deviation	0.394	3	0.131	0.770	0.512
	Within Groups			35.321	207	0.171		
	Total			36.019	211			
Industrial Sector	Between Groups	(Combined)		3.426	4	0.856	0.521	0.721
		Linear Term	Unweighted	0.008	1	0.008	0.005	0.943
			Weighted	0.071	1	0.071	0.043	0.836
			Deviation	3.355	3	1.118	0.680	0.565
	Within Groups			340.499	207	1.645		
	Total			343.925	211			

	Sum of Squares	df		Mean Square	F	Sig.	Sum of Squares	df
Number of years Firm has been in Business	Between Groups	(Combined)		23.985	4	5.996	6.176	0.000
		Linear Term	Unweighted	6.445	1	6.445	6.638	0.011
			Weighted	2.267	1	2.267	2.335	0.128
			Deviation	21.718	3	7.239	7.456	0.000
	Within Groups			200.973	207	0.971		
	Total			224.958	211			
Listing of Company Shares on Major Stock Exchanges	Between Groups	(Combined)		0.469	4	0.117	1.927	0.107
		Linear Term	Unweighted	0.153	1	0.153	2.518	0.114
			Weighted	0.186	1	0.186	3.062	0.082
			Deviation	0.283	3	0.094	1.549	0.203
	Within Groups			12.606	207	0.061		
	Total			13.075	211			
Ownership of Company	Between Groups	(Combined)		7.458	4	1.864	3.429	0.010
		Linear Term	Unweighted	1.186	1	1.186	2.181	0.141
			Weighted	0.572	1	0.572	1.052	0.306
			Deviation	6.886	3	2.295	4.221	0.006
	Within Groups			112.561	207	0.544		
	Total			120.019	211			
Position of Respondent in firm	Between Groups	(Combined)		5.938	4	1.484	1.448	0.219
		Linear Term	Unweighted	1.614	1	1.614	1.574	0.211
			Weighted	0.432	1	0.432	0.421	0.517
			Deviation	5.506	3	1.835	1.790	0.150
	Within Groups			212.194	207	1.025		
	Total			218.132	211			

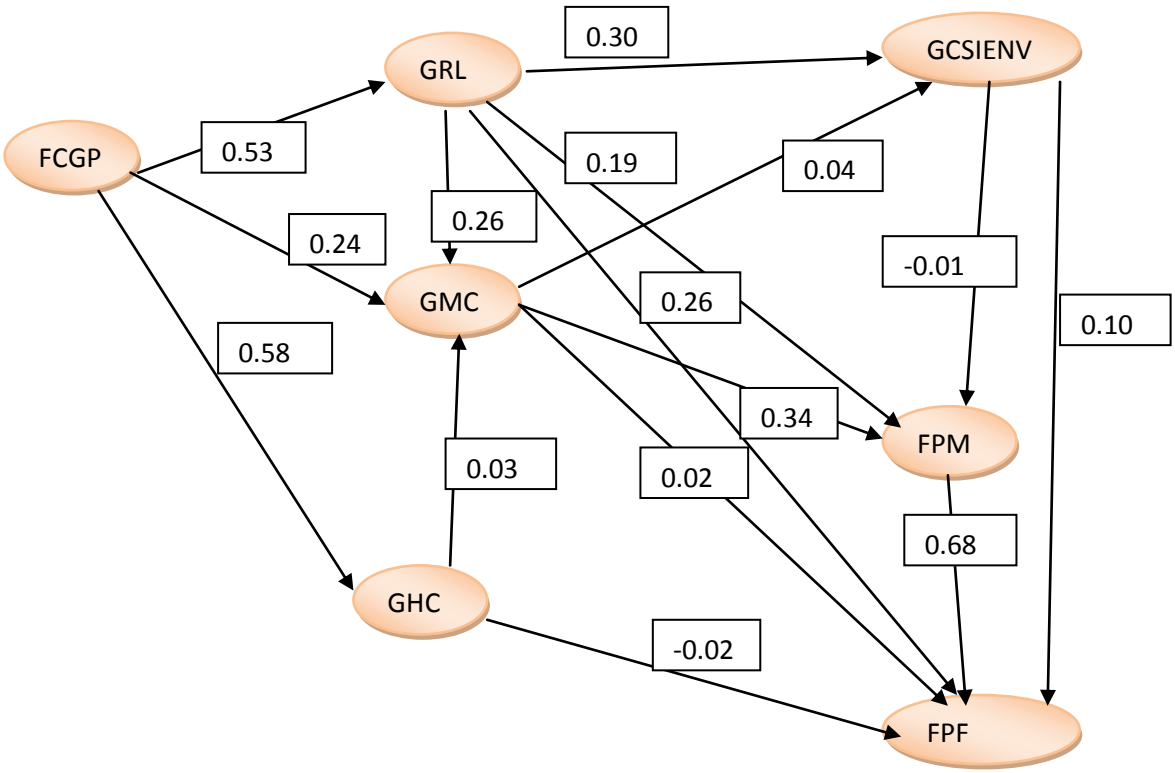
Source: This Study (2017)

Looking at the ANOVA table, the F-value is significant at $p<0.05$ level. Following from this and our computation, the F- values for ownership of the company, the number of years firm have been in business, age group and sex of respondent were significant with P-values less than 0.05. This can be interpreted as the firm commitment to green differs across age group of owner/manager, sex, ownership of company and number of year's firm has been in business. However, it must be mentioned that in large samples the F-value might be significant. On the other hand, some of the constructs had insignificant F-values with p-values greater than 0.05: these constructs included, race, the listing of company shares, industry sector and level of education. One can, therefore, conclude that firm commitment to

green did not differ significantly based on educational attainment, industry sector, the listing of shares on a stock exchange and race.

6.3 Testing for Mediation

Figure 6.3.1 TESTING MEDIATION EFFECTS



Source: This Study (2017)

6.3.1The effect of mediator variables on the relationship between FCG and FP, GCSI

The conceptual model of this study comprises of the independent variable, mediator variables, and the dependent variable. Firm Commitment to Green (FCG) is the independent variable, and the dependent variable is Firm performance (GCSENV) and Green Corporate Social Investment. Mediating variables are Green Marketing Commitment (GMC, Green Relationship learning (GRL) and Green Human Capital Investment (GHCI). In this study (Baron and Kenny, 1986) four steps (causal steps) will be used to examine the effect of mediation. This is carried out with the use of regression equations where the coefficients of dependent variables, outcome variables and the mediating variables at each step were

estimated. To determine whether there is partial, complete or no mediation, the following four step process is used.

- Step 1: a significant relation of FCG to GCSIENV or FP, derived from equation (1), is required.
- Step 2: a significant relationship of FCG to the hypothesized mediating variable, derived from equation (2), is required.
- Step 3: the mediating variable must be significantly related to GCSIENV and FP when both FCG and mediating variable are predictors of GCSIENV. This is derived from equation (3).
- Step 4: the effect of FCG on GCSIENV and FP controlling for the mediating variable should be zero to establish that the mediating variable completely mediates the FCG and GCSIENV relationship. Thus, the coefficient relating FCG to GCSIENV (i.e., c'= direct effect) in the regression model (step 3) with both the FCG and the mediating variable predicting FP should be zero.

If step 4 is not met, thus, the coefficient of GCSIENV (c') in step 3 is non-zero; then the mediation is partial. Discussed hereunder is the effect of each mediator variable on the relationship of FCG on GCSIENV by applying the four- step approach.

6.3.2 The effect of GRL on the Relationship Between FCG and GCSIENV

Table 6.5.1depicts the results derived from the regression equations based on the relationship of FCG, GRL, and GCSIENV. Since the coefficients of FCG in Steps 1 and 2, as well as that of GRL in step 3, is significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. However, the confidence interval of the effect of FCG on GCSIENV controlling for GRL did not include zero. Therefore, we conclude that GRL partially mediates the relationship of FCG on GCSIENV.

6.6.2: Regression analysis of FCG, GRL and GCSENV

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	*upper*			
1: GRL-->GCSI	0.259	0.067	0.127	0.390	0.000	Yes	Yes
2: FCG-->GRL	0.532	0.058	0.417	0.647	0.000	Yes	Yes
3: FCG-->GRL-->GCSIENV							
FCG	0.369	0.064	.242	0.496	0.000	yes	Yes
GRL	0.336	0.064	0.210	0.463	0.000	Yes	Yes
4: Interval of Coefficient of FCG in step 3 includes zero							No

Source: This study (2017)

6.3.3. The effect of GHCI on the relationship between FCG and GCSI

The results derived from the regression equations based on the relationship of FCG, GHCI, and GCSI are presented in table 6.5.2. Since the coefficients of FCG and GCSIENV in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. However, the effect of FCG on GCSIENV controlling for GHCI is non-zero (the coefficient of FCG in step 3 is 0.379, and the interval is between 0.245 and 0.513), therefore we conclude that GHCI partially mediates the relationship of FCG on GCSI.

Table 6.6.3: Regression analysis of FCG, GHCI and GCSIENV

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: GHCI-->GCSI	0.511	0.059	0.394	0.628	0.000	Yes	Yes
2: FCG-->GHCI	0.580	0.056	0.469	0.491	0.000	Yes	Yes
3: FCG-->GHCI-->GCSI							
FCG	0.379	0.066	0.245	0.513	0.000	Yes	Yes
GHCI	0.291	0.068	0.157	0.426	0.000	Yes	Yes
4: Interval of coefficient of FCG in step 3 is non-zero							No

Source: This study (2017)

6.3.4 The effect of GMC on the relationship between FCG and GCSI

The regression equations' results in Table 6.5.3 are based on the relationship of FCG, GMC, and GCSI. Since the coefficients of FCG and GMC in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. Secondly, the confidence interval of the effect of FCG on GCSI controlling for GMC includes zero. Therefore, GMC completely mediates the relationship of FCG and GCSI.

Table 6.6.4: The relationship between GCG, GMC and GCSI

Paths	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: GMC-->GCS	0.320	0.065	0.191	0.449	0.000	Yes	Yes
2: FCG-->GMC	0.398	0.063	0.273	0.522	0.000	Yes	Yes
3: FCG-->GMC-->GCSI							
FCG	0.500	0.062	0.376	0.623	0.000	yes	Yes
GMC	0.122	0.062	-0.002	0.245	0.000	Yes	Yes
4: Interval of coefficient of FCG in step 3 contains zero							Yes

Source: This study (2017)

6.3.5 The effect of GRL on the relationship between FCG and FPM

Table 6.5.4 depicts the results of a regression analysis based on the relationship of FCG, GRL, and FPM. Since the coefficients of FCG and FPM in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. However, the effect of FCG on FPM controlling for GRL is non-zero (the coefficient of FCG in step 3 is 0.222, and the confidence interval ranges from 0.075 to 0.369). Thus, the mediation requirement for step 4 was not met. Therefore, in conclusion, GRL partially mediates the relationship of FCG and FPM.

Table 6.6.5: The relationship between FCG and FPM controlling for GRL

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: FCG-->FPM	0.351	0.065	0.224	0.479	0.000	Yes	Yes
2: GRL-->FPM	0.532	0.058	0.417	0.647	0.000	Yes	Yes
3: FCG--> GRL-->FPM							
FCG	0.222	0.075	0.075	0.369	0.003	No	Yes
GRL	0.243	0.075	0.096	0.390	0.001	No	Yes
4: Interval of coefficient of FCG in step 3 is non-zero							No

Source: This study (2017)

6.3.6 The effect of GMC on the relationship between FCG AND FPM

The results of the regression analysis between these variables (GMC< FCG and FPM) is Depicted in table 6.5.5. Since the coefficients of FCG, FPM and GMC in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. However, the effect of FCG on FPM controlling for GMC is non-zero (the coefficient of FCG in step 3 is 0.104). Therefore, GMC partially mediates the relationship of FCG on FPM.

Table 6.6.6: Regression Analysis of FCG, GMC and FPM

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: FCG--->FPM	0.351	0.065	0.224	0.479	0.000	Yes	Yes
2: FCG--->GMC	0.399	0.063	0.273	0.522	0.000	Yes	Yes
3: FCG--->GMC--->FPM							
FCG	0.211	0.066	0.080	0.341	0.002	Yes	Yes
GMC	0.354	0.066	0.224	0.485	0.000	Yes	Yes
4: Interval of coefficient of FCG in step 3 is non-zero							No

Source: This study (2017)

6.3.7 The Effect of GHCI on the Relationship Between FCG and PFM

The results of the regression analysis between these variables (GHCI< FCG and FPM) is depicted in table 6.5.6. Since the coefficients of FCG, FPM and GHCI in Steps 1 and 2 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. In step three, only one of the relationships were significant, in examining the impact of FCG on FPM controlling for GHCI. However, the effect of FCG on FPM controlling for GHCI includes zero (the coefficient of GHCI in step 3 is 0.087 and the interval -0.070 to 0.243). Therefore, GHCI completely mediates the relationship of FCG on FPM.

Table 6.6.7: Regression Analysis of FCG, GHCI and FPM

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: FCG--->FPM	0.351	0.065	0.224	0.479	0.000	Yes	Yes
2: FCG--->GHCI	0.580	0.056	0.469	0.691	0.000	Yes	Yes
3: FCG--->GHCI--->FPM							
FCG	0.301	0.079	0.145	0.438	0.000	Yes	Yes
GHCI	0.087	0.079	-0.070	0.243	0.276	No	Yes
4: Interval of coefficient of FCG in step 3 is non-zero							Yes

Source: This study (2017)

6.3.8 The effect of GRL on the Relationship Between FCG and FPF

Table 6.5.7 depicts the results of a regression analysis based on the relationship of FCG, GRL, and FPF. Since the coefficients of FCG and FPF in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. However, the effect of FCG on FPF controlling for GRL is non-zero (the coefficient of FCG in step 3 is 0.222, and the confidence interval ranges from 0.075 to 0.369). Thus, the mediation requirement for step 4 was not met. Therefore, in conclusion, GRL partially mediates the relationship of FCG and FPF.

Table 6.6.8: The Relationship Between FCG and FPF Controlling for GRL

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: FCG-->FPF	0.500	0.067	0.195	0.465	0.000	Yes	Yes
2: GRL-->FPF	0.532	0.058	0.417	0.647	0.000	Yes	Yes
3: FCG--> GRL-->FPF							
FCG	0.327	0.067	0.195	0.460	0.000	Yes	Yes
GRL	0.325	0.067	0.193	0.457	0.000	Yes	Yes
4: Interval of coefficient of FCG in step 3 is non-zero							No

Source: This study (2017)

6.3.9 The Effect of GMC on the Relationship Between FCG and FPF

The results of the regression analysis between these variables (GMC< FCG and FPF) is depicted in table 6.5.8. Since the coefficients of FCG, FPF and GMC in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. However, the effect of FCG on FPM controlling for GMC is non-zero (the coefficient of FCG in step 3 is 0.104). Therefore, GMC partially mediates the relationship of FCG on FPF.

Table 6.6.9: Regression Analysis of FCG, GMC and FPF

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: FCG--->FPF	0.500	0.060	0.383	0.618	0.000	Yes	Yes
2: FCG--->GMC	0.452	0.062	0.331	0.574	0.000	Yes	Yes
3: FCG--->GMC--->FPF							
FCG	0.381	0.062	0.259	0.503	0.000	Yes	Yes
GMC	0.301	0.062	0.179	0.423	0.000	Yes	Yes
4: Interval of coefficient of FCG in step 3 is non-zero							No

Source: This study (2017)

6.3.10.The effect of GHCI on the Relationship Between FCG and FPF

The results of the regression analysis between these variables (GHCI, FCG and FPF) is depicted in table 6.5.9. Since the coefficients of FCG, FPF and GHCI in Steps 1, 2 and 3 are significant (p-value < 0.05) at 95% confidence level, the requirements for mediation were met. Secondly, the effect of FCG on FPF controlling for GHCI is included zero (the coefficient of FCG in step 3 is 0.451 and range are between -0.059 and 0.229). Therefore, GHCI completely mediates the relationship of FCG on FPF.

Table 6.6.10: Regression Analysis of FCG, GHCI and FPF

Steps	Coefficient	Standard error	95% confidence interval		p-value	Significance	Mediation requirement met?
			lower	upper			
1: FCG--->FPF	0.500	0.060	0.383	0.618	0.000	Yes	Yes
2: FCG--->GHCI	0.347	0.065	0.219	0.474	0.000	Yes	Yes
3: FCG--->GHCI--->FPF							
FCG	0.451	0.073	0.307	0.596	0.000	Yes	Yes
GHCI	0.085	0.073	-0.059	0.229	0.247	No	Yes
4: Interval of coefficient of GHCI in step 3 includeszero							Yes

Source: This study (2017)

6.4. Testing the Measurement Model (Structural Equation Modelling)

The initial phase of the SEM process was to verify the measurement model, by applying CFA to latent variable factors. AMOS 24 was used to test the reliability and validity as well as the conceptual model fit of measures using CFA that pooled together each research construct measured by reflective indicators (Anderson & Gerbing, 1988). The acceptability of the measurement model was assessed by:

- Checking the reliability of each of the variables, determined by the statistical significance of the indicator loadings;
- Checking validity – both convergent and discriminant validity;
- Testing the criteria of overall model fit with the data

6.4.1. Reliability: Analysis of the CR Values

Most factor loadings were found to be significantly above the recommended thresh-hold of 0.5 (Anderson & Gerbing, 1988). This study then calculated CR scores. This was because the Cronbach α is a necessary, but insufficient condition to confirm the reliability of a measure, CR was a satisfactory alternative to prove the reliability of the instruments. All the constructs met the minimum threshold of recommended by Bagozzi and Yi (1988) of above 0.6, an acceptable reliability score. Therefore, the tools measuring the constructs were high enough to yield acceptable CR scores for the constructs as recommended by Hulland (1999). This indicated that the reliability and internal consistency of most instruments had an acceptable score.

6.4.2. Validity: Discriminant and Convergent Validity

6.4.2.1. The Assessment of Discriminant Validity [Correlation Matrix]

To investigate the distinctiveness of the variables, an assessment of discriminant validity was done. Discriminant validity was assessed by transforming the data and then calculating the correlations between constructs. Table 6.8 below presents the results from the correlation matrix. Though the inter-correlations between the variable were relatively high, they were still marginally acceptable in line with suggestions by (Hulland, 1999). According to the results, there is no 100% correlation between constructs – i.e. no perfect similarity between variables. Therefore, the study variables were found to be unique or dissimilar – there was a

sense of inimitability. The inter-construct correlations ranged between 0.24 and 0.81. Since all of the correlations between constructs were less than 1, such results highlighted the existence of discriminant validity. Secondly, the variables did not display multicollinearity, for instance, a high correlation value of > 0.8 except for one variable measuring performance. All other correlations were under 0.8, meeting the threshold recommended by Fraering and Minor (2006) this thus indicated the existence of discriminant validity. The lesser the value, the more unique the variables are, for example, the correlation between Firm financial performance and green corporate social investment 0.21. Examining the inter-construct correlation matrix in Table 6.7 below, discriminant validity existed, given that the constructs were highly distinct from each other.

Table 6.7:Inter-Construct Correlation Matrix

Inter-Construct Correlation Matrix							
	Firm Commitment to Green	Green Marketing Capability	Green relationship learning	Green Human Capital Investment	Green CSI	Firm Marketing Performance	Firm Financial Performance
FCG	1.000						
GMC	0.398	1.000					
GRL	0.532	0.399	1.000				
GHCI	0.580	0.268	0.386	1.000			
Green CSI	0.548	0.320	0.533	0.511	1.000		
FPM	0.351	0.438	0.361	0.261	0.255	1.000	
FPF	0.500	0.452	0.499	0.347	0.413	0.805	1.000

Source: This study (2017)

Essentially, the above correlation matrix displayed that all the links between most the study variables were lower than 0.8 except firm performance. For this reason, discriminant validity is confirmed. Another alternative way of checking the existence of discriminant validity was to use the shared variance as discussed below.

6.4.3. Shared Variance (Squared Correlation)

Table 6.9: Squared Multiple Correlations

			Estimate
ENVC1			.886
ENVC2			.852
ENVC3			.866
ENVC4			.949
ENVC5			.521
FPF1			.815
FPF2			.891
FPF3			.948
FPF4			.944
FPM1			.618
FPM2			.547
FPM3			.956
FPM4			.915
FPM5			.761
GCSIENV1			.618
GCSIENV2			.911
GCSIENV3			.930
GCSIENV4			.895
GCSIENV5			.630
GHCI1			.862
GHCI2			.915
GHCI3			.773
GHCI4			.834
GHCI5			.711
GRL1			.775
GRL2			.824
GRL3			.952
GRL4			.646
GRL5			.604
GMP1			.764
GMP2			.887
GMP3			.932
GMP4			.841
GMP5			.712

Source: This study (2017)

Findings from the squared multiple correlations between the consructs can be explained as follows, taking GMP5 for example, (GMP5: 0.712), means that 71 percent of the variance is explained by the variable and the remaining 29 percent is explained by the error term. We see from the table that averagely over 80 percent of the variance of the various variables was

explained by the different variables. Studies by (Afthanorhan & Ahmad, 2013) suggest that shared variance represents the amount of variance that one construct can explain in another construct. Discriminant validity between constructs can be checked by comparing the variance extracted estimates of the measurement instruments with the square of the parameter estimates between these measures. The procedure requires that the least AVE value for every multi-item variable should be greater than the highest combined variance between constructs (Nunnally and Bernstein, 1994). If the variance-extracted estimates of the constructs are found to be higher than the square of the correlation between two constructs, there would be evidence to justify the existence of discriminant validity (Fornell & Larcker, 1981). Following this approach, there is sufficient evidence to conclude that there was discriminant validity as every item under study showed that the variance extracted was greater than the squared correlation between the constructs. Therefore, the results confirmed an acceptable level of the validity of the research scales. This was also in line with preliminary confirmation using the Cronbach alpha test in SPSS. For example, the shared variance between Green Comm and Green MKT was calculated to be 0.78032 = 0.609. The variance-extracted estimates for the two constructs, as explained above, were greater than the square of the correlation. And so, the computed findings supported the discriminant validity of constructs as 'the variance extracted estimates should be greater than the squared correlation estimate' to warrant the existence of discriminant validity (Hair et al. 2006).

Further determination of discriminant validity, was performed by the researcher through a chi-squire difference in any paired latent constructs (which constrained the factor inter-correlations to unity) through the use of CFA tests as suggested by Anderson and Gerbing, 1988). Findings from the CFA tests results and all sets of the variables revealed a satisfactory level of discriminant validity. By and large, the various methods used in this study to test for discriminant validity confirmed that discriminant validities existed. One would, therefore, based on the findings of this study confirm that there is support for the existence of discriminant validity is provided.

The next important check that was carried out in this study was to check whether the tool measures what it set out to measure is through convergent validity, and the results are discussed below.

6.4.4. The Assessment of Convergent Validity

Findings from the AVE calculations are presented in Table 6.8 below, and the actual calculations can be found in Appendix II. To measure convergent validity, this study used

two methods. Firstly, in line with recommendations by Nunnally and Bernstein (1994), the least AVE value for every multi-item variable should be 0.5. However, in the social sciences, the minimum threshold of 0.30 is a marginally accepted (Hair et al., 2006). The results of this study showed an AVE value of above 0.5. Table 6.2 presents key descriptive statistics of reliability analyses for the seven constructs. Findings from this study showed that composite reliabilities were above 0.85 and therefore well above the recommended minimum threshold of 0.6 (Bagozzi and Yi, 1988). The average variance extracted (AVE) ranges from 0.0 to 0.78 (Fornell and Larcker, 1981). Furthermore, all of the coefficient alpha values from the study exceeded 0.8. This is above the threshold of 0.7 recommended by (Nunnally, 1978) or the threshold of 0.5 recommended by (Anderson and Gerbing, 1988). Therefore, these results confirmed that the measurement was measuring what they set out to measure in this study. This implies both reliability and support for an acceptable degree of internal consistency between the corresponding indicators and for satisfying the minimum requirements for justifying convergent validity (Bagozzi, Yi, and Phillips, 1991).

This study also showed composite reliabilities above 0.6 in line with recommendations by Bagozzi and Yi(1988). The AVE values ranged from 0 to 0.68 (Fornell & Larcker, 1981). Moreso, it was also found that all of the coefficient alpha values exceeded the marginally acceptable threshold of 0.6 (Nunnally, 1978) except for two regression weights that were below the 0.5 (Anderson & Gerbing, 1988). Looking at these results, one can conclude that the minimum requirements for justifying convergent validity were successfully met in line with suggestions from (Bagozzi, Yi, &Phillips, 1991).

This study also used the item-to-total correlations for the constructs to test convergent validity. Findings displayed on Table 6.6, showed that most of the constructs achieved the recommended threshold of 0.5 and the marginally acceptable threshold of 0.4. However, the convergent validity of a few instruments is questionable; all the items reached the recommended threshold to justify a relatively acceptable level of convergent validity.

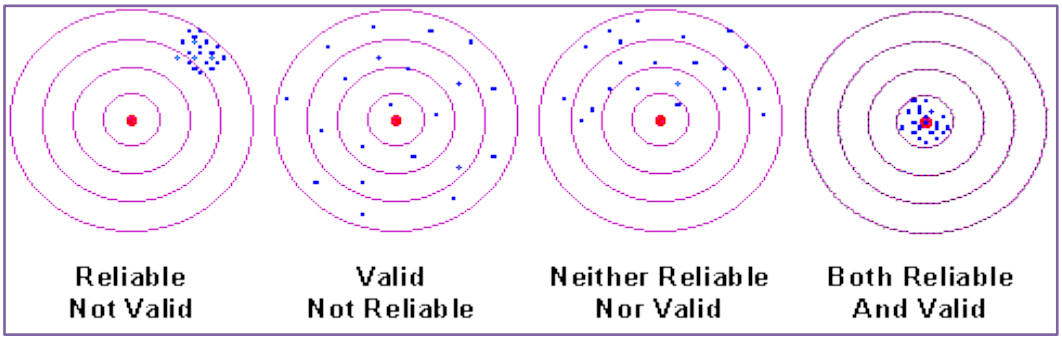
6.4.5. Similarities Between Shared Variance and Average Variance Explained (AVE)

According to (Farrell, 2009), shared variance is the amount of variance in non-latent variables about another variable that a latent variable can explain while AVE is the mean amount of variation in observed variables that a latent variable can explain. In line with Fornell and Larcker (1981), if AVE for every single variable is more than its shared variance in comparison with any other variable, then discriminant validity is reinforced. This was further explained by Hair et al. (2006) who suggested that “the variance extracted estimates

should be greater than the squared correlation estimate." The current study found that discriminant validity does exist and the results of this are presented below – i.e. the highest shared variance of 0.309 (0.5562) was less than the lowest marginally acceptable value of 0.40. Hence this justified the existence of discriminant validity as concluded above.

Figure 6.2 shows some of the expected outcomes following the calculation of both validity and reliability.

Figure 6.10: Expected Outcomes from Reliability and Validity Computation



Source: Google Images (2017)

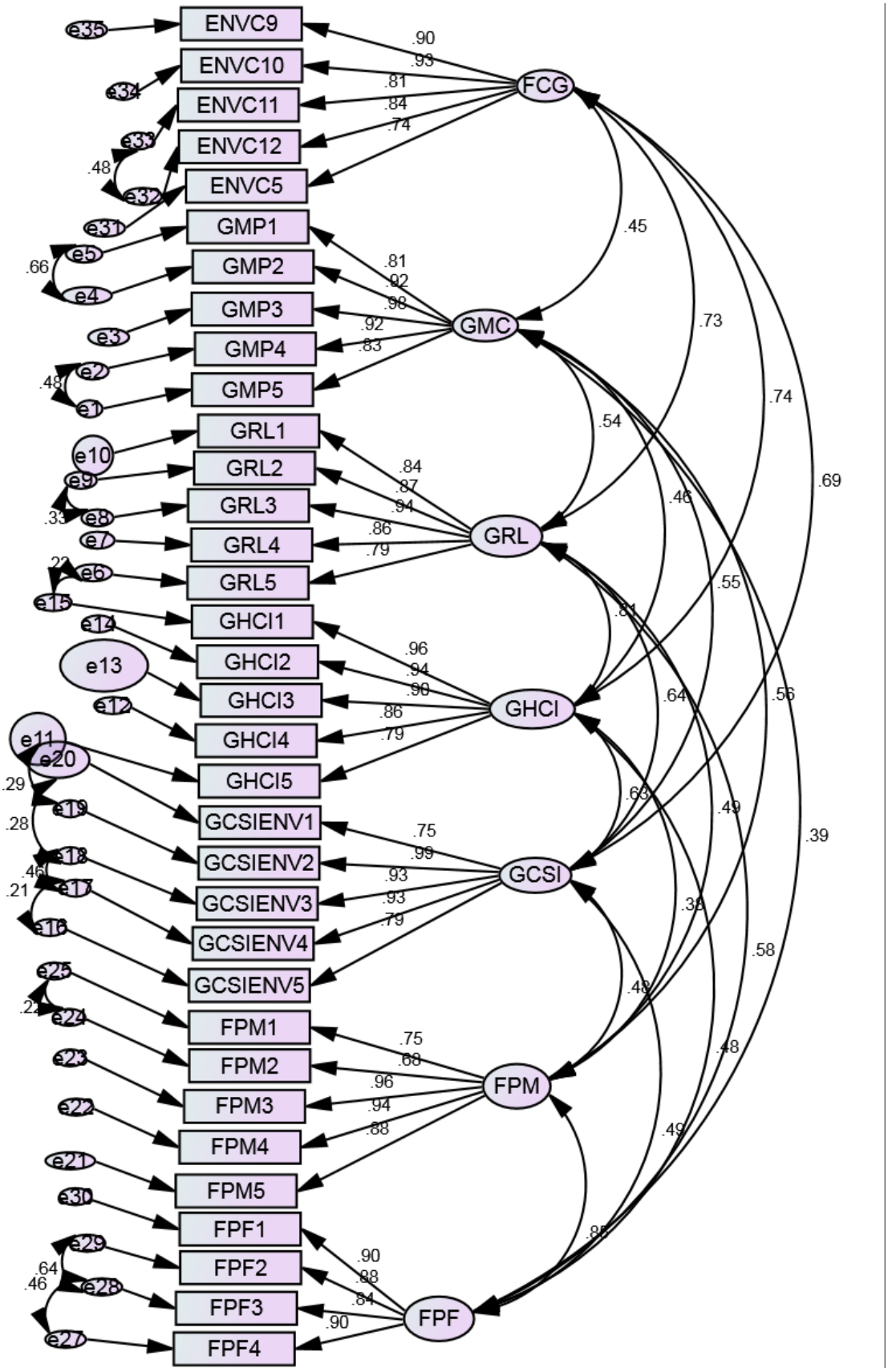
According to figure 6.10, researchers should expect four main possible outcomes from calculations of validity and reliability. Estimates from the current study showed that all the instruments were reliable, given that both the computed Cronbach's α and CR values met the recommended threshold. Moreover, 10 out of 12 constructs were both reliable and valid. However, one of the remaining variables, i.e., GHCI was found to be reliable but fell just below the marginally acceptable threshold. This finding implied that it is possible for a measure to be reliable and yet be invalid; this is in line with previous studies. Hence, a measure can be reliable without being valid as suggested by Weiner (2007). Overall, the current study provided satisfactory evidence to justify the fact that the item scales used were reliable and measured what they set out to measure.

The next section will present the findings and calculations from inferential statistics – i.e. CFA and Path Modelling. The measurement model was tested first before testing the structural model – a two-step process suggested by Jöreskog and Sörbom (1993) as well as Anderson and Gerbing (1988), who termed it 'a two-stage procedure'.

6.5. Inferential Statistics

To analyse the impact on the firm performance of firm commitment to green and green marketing capability, the current study used the Structural Equation Modelling (SEM) approach. The first reason for using this method was because some of the determinants of firm performance are not observed directly, for example, brand loyalty. Unobserved variables could be regarded as latent variables and thus can only be measured by more than one item. Secondly, SEM allows for a simultaneous analysis of the relationships between endogenous and exogenous variables in the model relating firm commitment to green, green marketing capability and firm performance (Khine et al., 2013). Following our conceptual model developed in Figure 4.2, structural equation modeling was used to determine the link between the constructs in this study. A two-step model building approach was used in this study: the measurement model was tested before testing the structural in line with suggestions from Jöreskog and Sörbom (1993). SEM has also been termed ‘a two-stage procedure’ by Anderson and Gerbing (1988) given that it begins with CFA and ends with Path Modelling. Therefore, the calculation of CR values (for reliability) and AVE values (for validity) was carried out before path modeling in this study.

Figure 6.11: CFA Model Analysis: Measurement Reliability, Validity and Model Fit



Convergent validity was evaluated for the seven constructs in this study using the criteria recommended by Fornell and Larcker (1981). According to these criteria, the following conditions must be met:

1. The measurement factor loadings for all the measurement instruments must exceed 0.70
2. The reliabilities of the constructs must exceed 0.80
3. The Average Variance Extracted (AVE) extracted from each construct should be greater than the variance due to measurement error (AVE should exceed 0.50).

Fornell and Larcker, (1981), recommend that for convergent validity in SEM, the factor loadings together with the mean variances extracted (AVE) should be greater than 0.50. In this study and, in line with suggestions by Hair et al., (1995), the average variance extracted (AVE) for each factor were manually calculated following the procedure proposed by Hair et al., (1995):

$$AVE = \frac{(\sum^{n}_{I=1} \lambda^{2}_{i})}{(\sum^{n}_{I=1} \lambda^{2}_{i}) + (\sum^{n}_{I=1} \delta^{2}_{i})}$$

In the above formula λ is the standardized factor loadings and δistheindicator measurement error. In simple terms, it is the sum of squared standard loadings divided by the sum of squared standard loadings plus the sum of indicator measure errors. For example, the AVE for the first factor, firm Commitment to Green (GCG) was calculated as:

$$AVE = \frac{(0.90+0.93+0.81+0.84+0.74)}{(0.90+0.93+0.81+0.84+0.74) = (0 + 0.065+0.06+0.06+0.064)}$$

= 4.22/4.469 =**0.944**

A CFA model was developed order to validate the variables under study and the results from the computation presented in figure 6.3 above. The CFA allowed the researcher to check the validity of instruments and the model fit. Reliability (with regards to Composite Reliability) and validity (for AVE) have been discussed above, but the calculated values for these measurements have not been presented. The table below shows the results of CR and AVE values.

Table 6.8: Accuracy Analysis Statistics

Research Construct		C.R. Value	AVE Value	Factor Loading
Firm Commitment to Green	ENVC1	0.986	0.944	0.90
	ENVC2			0.93
	ENVC3			0.81
	ENVC4			0.84
	ENVC5			0.74
Green Marekting Capability	GMP1	0.991	0.961	0.81
	GMP2			0.92
	GMP3			0.98
	GMP4			0.92
	GMP5			0.83
Green Relationship Learning	GRL1	.987	0.946	0.91
	GRL2			0.92
	GRL3			0.96
	GRL4			0.81
	GRL5			0.79
Green Human Capital Investment	GHCI1	0.990	0.956	0.96
	GHCI2			0.94
	GHCI3			0.90
	GHCI4			0.86
	GHCI5			0.79
Green Corporate Social Investment	GCSIENV1	0.989	0.950	0.88
	GCSIENV2			0.94
	GCSINV3			0.98
	GCSIENV4			0.94
	GCSIENV5			0.78
Firm Financial Performance	FPF1	0.989	0.965	0.90
	FPF2			0.88
	FPF3			0.84
	FPF4			0.90
Firm Marketing Performance	FPM1	0.990	0.960	0.82
	FPM2			0.71
	FPM3			0.95
	FPM4			0.90
	FPM5			0.86

**Scales: 1 – Strongly Disagree; 3 – Neutral; 5 – Strongly Agree*

Table 6.8 presents the AVE and the CR and the factor loading for the different constructs. The AVE values in the table above are all greater than 0.5 with all of them above 0.80. This indicates that all the constructs had a high loading and thus demonstrate convergent validity. This implies that this research satisfies the criteria of convergent validity. All the composite reliabilities indicated reliability scores that were more than 0.60 – i.e., they were marginally acceptable.

6.5.1 Composit Relaibility

Score reliability is a requirement for construct validity. The degree to which measurements are free from error and thus yielding consistent results is called reliability. According to (Carmines & Zeller, 1979) the extent to which a measure, procedure or instrument yields consistent results on repeated trial is called reliability. Reliability is used to assess the level of consistency among some measurements of variables (Hair, Anderson, Tathman, & Black, 1998). One can define reliability operationally as the internal consistency of a scale. This examines the degree of homogeneity among items. Path loadings of >=0.70 are used to show internal consistency for construct validity. The overall reliability of a construct is measured using composite reliability (CR). The value of CR ranges between 0 and 1 with values greater than 0.70 considered good composite reliability values, however, there is a consensus among researchers that values between 0.60 and 0.70 are acceptable as good (Hair et al., 2006). In this research, (Fornell and Larcker, 1981) composite reliability was used to test internal reliability. The reliability of the constructs was computed by calculating the composite reliability. In this study, following (Fornell and Larcker, 1981), we suggested that composite reliability needed to be greater than 0.70 to be good CR. We used the below formula to calculate the CR values:

$$\text{Composite Reliability } (\rho) = \frac{(\sum^{n}_{I=1} \lambda_i)^2}{(\sum^{n}_{I=1} \lambda_i)^2 + (\sum^{n}_{I=1} \delta_i)}$$

From the above formula, λ is the standardised factor loading, and δ is the indicator measurement error. To explain the above formula, the composite reliability is gotten by squaring the standardised factor loadings and dividing the results by the squared standardised factor loadings plus the measurement error. For example, the composite reliability for the construct Firm Commitment to Green (GCG) was calculated as follows:

$$\text{Composite Reliability } (\rho) = \frac{(0.90+0.93+0.81+0.84+0.74)^2}{(0.90+0.93+0.81+0.84+0.74)^2 + (0.065+0.06+0.06+0.064)}$$

$$\text{Composite Reliability } (\rho) = \frac{(4.22)^2}{(4.22)^2 + (0.249)} = 17.808/18.0574 = 0.986$$

Therefore, the composite reliability (CR) for a firm commitment to green is 0.986. Following the same approach, the composite reliabilities for all the other constructs were calculated and the results presented in table 6.8. The results showed that all the composite reliabilities were above the threshold of 0.70. This indicated the adequate internal consistency of the constructs.

As presented in table 6.8 above factor loadings all were above 0.60 this is in line with general factor loading threshold of 0.30, and particular 0.50 loading in marketing considered reasonably acceptable (Chinomona, 2014; Hair et al., 2006). Research also points to the fact that the higher the factor loading, the better the outcomes (Peterson, 2000; Hair et al. 2006).

6.5.2 Discriminant Validity

This study also measured the extent to which the different constructs in the study were indeed distinct from other constructs or discriminant validity. Accordingly, the variance of an indicator must be explained better by its latent variables. This means that the loadings of a construct on its assigned latent variables should be higher than its loading on all other variables. Practically, to check discriminant validity, the AVE's are compared to the squared correlations for each of the constructs. Discriminant validity exists when the AVE is higher than the squared correlations between the latent variable and all other latent variables (Cooper & Zmud, 1990, Hair et al., 1998). Evidently, when each measurement item correlates weakly wit all other constructs, except for the one to which it is theoretically associated, and then discriminant validity exists.

There are two basic conditions to be fulfilled for discriminant validity to happen:

1. A correlation matrix in which the measurement constructs load highly on its theoretically assigned factor and poorly on others.

2. There needs to be an AVE analysis. Practically examining if the square roots of every AVE for each construct is larger than the correlation among any pair of latent variables and should be at least 0.50 (Chin,1998; Fornell and Larker,1981).

In this research, discriminant validity was examined by comparing the shared variances between the constructs with the AVEs of the individual factors in line with suggestions by (Fornell and Larker, 1981). Table 6.8 presents the proof of discriminant validity in this study, with the square roots of the AVE's measuring the variance between a construct and its

indicator compared to squared correlations between indicators. As indicated, the lowest AVE was 0.944 for FCG, which exceeded the largest squared correlation between any pair of constructs. The diagonal numbers on the table represent the AVE values for the different constructs and the rest of the amount the correlations among factors. Following this analysis, the shared variance between factors was lower than the AVE of the individual factors, thus confirming discriminant validity.

Table 6.11: Factor Matrix Showing Discriminant Validity

Inter-Construct Correlation Matrix							
	Firm policy commitment to green	Green Marketing Capability	Green relationship learning	Green Human Capital Investment	Green CSI Environmental	Firm Marketing Performance	Firm Financial Performance
FCG	**0.944**						
Green GMC	0.398	**0.961**					
GRL	0.532	0.399	**0.946**				
GHCI	0.580	0.268	0.386	**0.956**			
GCS	0.548	0.320	0.533	0.511	**0.950**		
FMP	0.351	0.438	0.361	0.261	0.255	**0.965**	
FFP	0.500	0.452	0.499	0.347	0.413	0.805	**0.960**

Source: This study (2017)

This section discusses the measurement model and model fit (under CFA), as reliability and validity were discussed in the previous sections. Measurement of the Confirmatory Factor Analysis (CFA) Model – SEM was performed through AMOS 24 statistical software to estimate the underlying relationships between the independent variables on the outcome variable – firm performance and green corporate social investment. The study made use of the Maximum Likelihood (MLH) technique. This is because the MLH technique has desirable asymptotic properties, for instance, minimum variance and that of unbiasedness (Chinomona, 2014). According to the initial specification results, there was no need to exclude any of the measurement items all the scales had item loadings above the least acceptable threshold of 0.5 as suggested by Byrne (2001) and Hair et al. (2003). The measurement items converged fairly (therefore, convergent validity reached a fairly good level – as per the AVE values) and reliably measured their corresponding variables (seen from CR values).

6.5.3 Model Fit (CFA Analysis)

According to (Arbuckle & Wothke, 2004), the overall model fit can be described by some fitting indices. Researchers disagree on the cutoff point for the number of indices to be used in reporting. This issue is further compounded by the contradictory evidence relating to the number of indices to be used in reporting. However, fitting indices are used to assess the validity of the assessment model Hair et al. (2006). Also, analysis of these indices must depend on at least one incremental fit index and one absolute fit index. To account for the influence of sample size, dividing the X2 measure (CMIN) by degrees of freedom (DF) is frequently applied (Hair et al., 2006). To demonstrate an acceptable fit, the value should be lower than 3.0 (Hair et al., 2006).

The RMSEA (Root Mean Square Error of Approximation) is also an absolute fit index and the increase in the index is based on the error in prediction (Hair et al., 2006). According to (Browne & Cudeck, 1993), RMSEA should be below 0.07. Comparative Fit Index (CFI) is used to accounts for model complexity. The suggested threshold is > 0.9, where 1 symbolizes a perfect fit (Hair et al., 2006; Arbuckle & Wothke, 1999). The parsimony fit measures signify the extent of model fit for each projected coefficient. It attempts to adjust any 'over-fitting' of the model and assess the parsimony of the model in comparison with the Goodness of Fit Index (GFI).

When taking into account all of these fit indexes for the overall-model valuation as represented in Table 6.9 below, it can be said that there is a fairly acceptable fit between the proposed model and sample data. All of the indices, including the so-called Goodness of Fit indices exceeded the 0.90 minimum thresholds and thus indicating a provisionally acceptable model fit (Wang, Wang & Yang 2005). Furthermore, the results show that the model is parsimonious for the reason that the PRATIO value is not far off to 1 and x2/g.l and is incorporated amongst the interval values recommended by Arbuckle and Wothke (2004).

As per the above discussion, the results of the model fit (under CFA) are presented in Table 6.9 below

.

Table 6.12: Model Fit Summary (CFA)

Model Fit Indices	Acceptable Threshold	Study Threshold	Acceptable / Unacceptable
Chi-Square Value:$\chi 2/(df)$	<3	2.096	Acceptable
Comparative Fit Index (CFI)	- > 0.900	0.943	Acceptable
Goodness of Fit Index (GFI)	> 0.900	0.961	Acceptable
Incremental Fit Index (IFI)	> 0.900	0.944	Acceptable
Normed Fit Index (NFI)	> 0.900	0.916	Acceptable
Tucker Lewis Index (TLI)	> 0.900	0.914	Acceptable
Parsimony Fit (PRATIO)	Close to 1	0.660	Acceptable
Random Measure of Standard Error Approximation (RMSEA)	< 0.08	0.091	Fairly Acceptable

Source: This Study (2017)

6.6. Path Modelling Analysis: Testing the Structural Model

A structural model is a prototypical component that connects endogenous and exogenous variables (McDonald, 1996).This study used path modeling to approximate the causal relationships between the study variables, based on the conceptual modeling Figure 4.1. The MLE (Maximum Likelihood Estimation) was used to estimate the structural coefficients of the path model, through the use of AMOS 24 statistical software. As previously stated, the MLE method was chosen as it was deemed to have the right asymptotic properties – i.e., low variance, unbiasedness and that it is scale-free. Standardized structural coefficient estimates were employed to associate the comparative significance of exogenous variables.

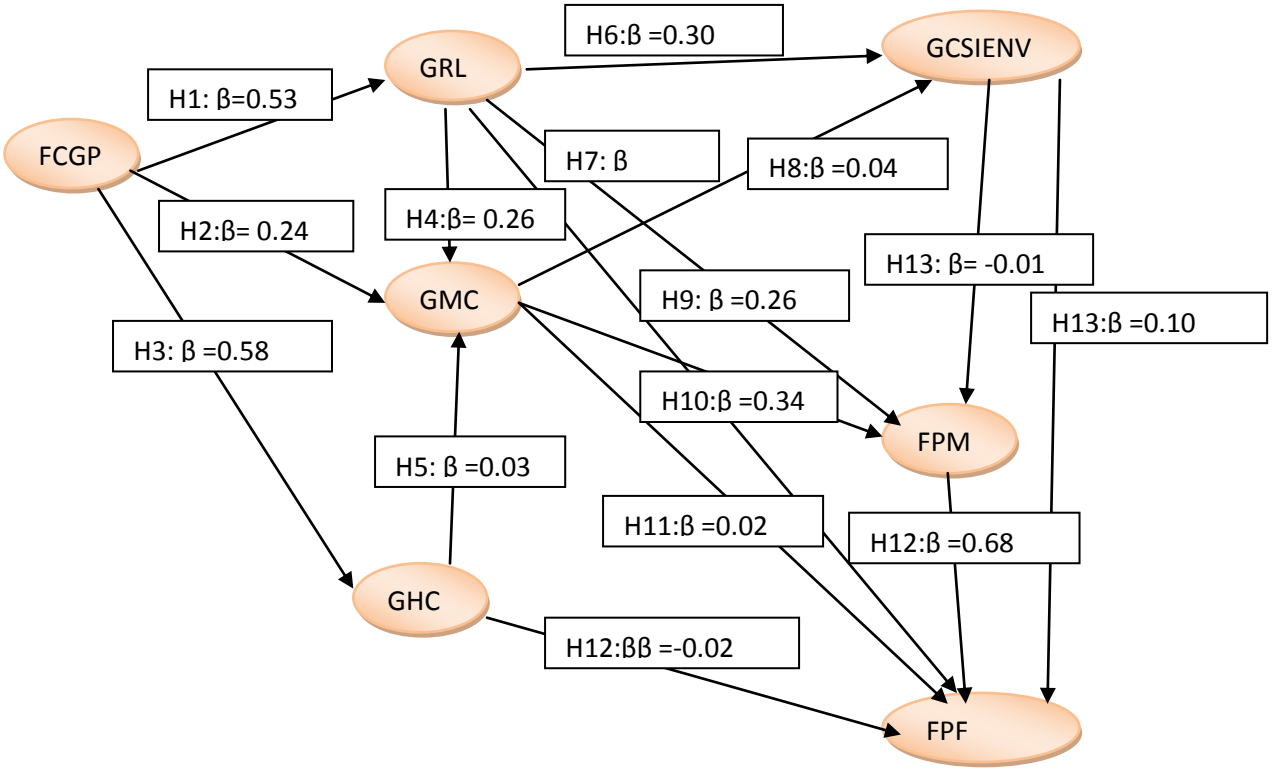
Our SEM structural model is a graphical representation of all the mathematical equations relating dependent variables to various explanatory variables. We represent the relationships between, firm financial performance, firm marketing performance, green corporate social investment, green relationship learning, green human capital investment, green marketing capability and a firm commitment to green on the path diagram. Single sided arrows show the relationship between dependent variables and explanatory variables; it also shows the factor loading regression weights. Double sided arrows show correlations among errors.

6.6.1. Model Fit: Path Modelling

Various authors (Lei & Wu, 2007) agree that path modeling also requires that model fit should be assessed in advance of testing the structural paths of the hypothesised model. In this study, model fit indices were calculated the same way as they were computed under CFA. According to the valuation of the overall fit of the hypothesised model, the model was

a plausible representation of the complete set of casual interactions. In addition to the section on absolute fit indices above, these indices assessed the extent to which the overall model (measurement and structural models) forecasted the observed inter-construct correlation or covariance matrix. As a result, model fit was calculated, and the findings thereof are presented in Table 6.9 below.

Figure 6.12: Out Put Path Model



Source: This study (2017)

Figure 6.12, above illustrates the output model showing the various paths and the variances from the output SEM model. It would be important to analyse beyond the variances of the different paths and to explain the path coefficients to illustrate the model fit. The following section presents the model fit coefficients to demonstrate whether they fall within or outside the acceptable range and what that means for the study.

Table 6.13: Model Fit Summary (Path Modelling)

Model Fit Indices	Acceptable Threshold	Study Threshold	Acceptable / Unacceptable
Chi-Square Value:χ2/(df)	<3	2.323	Acceptable
Comparative Fit Index (CFI)	- > 0.900	0.996	Acceptable
Goodness of Fit Index (GFI)	> 0.900	0.994	Acceptable
Incremental Fit Index (IFI)	> 0.900	0.996	Acceptable
Normed Fit Index (NFI)	> 0.900	0.993	Acceptable
Tucker Lewis Index (TLI)	> 0.900	0. 956	Acceptable
AGFI	> 0.900	0.910	Acceptable
Random Measure of Standard Error Approximation (RMSEA)	< 0.08	0.08	Marginally Acceptable

Source: This Study (2017)

The results above displayed an acceptable model fit. Comparing the results of the model fit with that of the CFA model, the findings from path modeling showed that none of the measurement indices fell below the acceptable threshold limit as illustrated on table 6.9 above. Therefore, with these results, it can be concluded that the model fit of this study was acceptable and all indices fell above the suggested threshold. These findings indicate that the previously derived conceptual model was a plausible representation of the collected data.

Unlike in the CFA analysis, none of the variables were deleted to eventually have the final best fitting model. However, two relationships or hypothesis though had a positive loading as predicted in the hypothesis model were delectated from the final model due to low loading to improve the model fit. These statements were deleted as a result of low factor loadings (i.e., < 0.5). The structural model in Appendix III illustrates the final and simplified validated best-fit model. Notably, this simplified model only depicted hypotheses that were finally supported – i.e. all the remaining ten hypotheses were supported.

Following the analysis of the structural model fit and its outcomes showing an acceptable fit threshold, the researcher proceeded to test the structural paths of the assumed model. The following section details the test of structural paths and hypothesis from this study.

6.6.2 Hypothesis Testing / Significance Testing

The testing of the model fit is one of the most significant results of fitting a path model (Hoyle, 1995). After checking model fit (under path modeling), and finding a reasonably acceptable fit, the next step was to test the hypotheses of the current study. Hypothesis testing is a procedure used for testing a claim about a parameter in a population, through the utilisation of the data measured in a sample (http://www.sagepub.com/upm-

data/40007_Chapter8.pdf). The attractiveness of SEM was deduced from its flexibility in specifying and testing hypotheses between both manifest and latent variables. The causal paths in SEM were assessed using statistical significance and strength, through the use of standardized path coefficients that ranged between -1 and +1. In line with Chin (1998), standardized paths must be no less than 0.20 and preferably above 0.30 to be considered significant for discussion. Some of the standardized paths for the current study met this recommended threshold.

Despite the fact that causal relationships are hypothesized when using SEM, causality cannot be ascertained by the findings computed by any of the techniques used (Kline, 2011). However, causality can be determined only by the soundness of the research design as well as the underlying theory (Weston & Gore Jr., 2006). A structural model was used to describe inter-relationships between the study variables. In contrast, when both measurement and structural models are considered together, the model may be referred to as a full structural or composite model (Jörg, Ringleand & Sinkovics, 2009). However, a composite model was not applicable to the current study.

The relationships between latent variables can be described as direct effects, covariances, or mediated (indirect) effects (Baron & Kenny, 1986). Covariances are equivalent to correlations because they are regarded as non-directional associations amongst exogenous latent variables. They are indicated graphically through the use of double-headed arrows (Arbuckle, 2005). However, because the current study did not expect any non-directional associations between the latent variables, no covariances were specified in the structural model as seen in Appendix III. Only direct effects or relationships were anticipated.

Direct effects are associations between manifest and latent constructs, and these are similar to those that are found in multiple regressions and ANOVA (Weston & Gore Jr., 2006). These effects were indicated graphically through the use of single-directional arrows (e.g., between commitment to green and marketing capability). Noteworthy, although indicators point toward directionality in SEM statistics, Baron and Kenny (1986), as well as Weston and Gore Jr.(2006), cautioned that investigators must not interpret associations between latent variables as causal, except in cases where they evaluate experimental or longitudinal data. Moreover, in line with Weston and Gore Jr. (2006), the coefficients that are generated to refer to the strength of these associations can be interpreted similarly as regression weights.

The path diagram of the structural model for the antecedents of firm commitment to green, green marketing, and firm performance is displayed in Appendix III. This diagram represents the causal relations as single headed arrows were used, while the latent variables were

represented as ellipses. Additionally, the standardized values (ranging between 0 and 1) of the coefficients for each indicator and latent construct were also presented.

The findings from model causality testing or hypotheses verification (also called significance testing) are presented in Figure 6.3 below.

Table 6.14: Testing the Hypotheses: Regression Weights:

			Estimate	S.E.	C.R.	P	Label
GRL	<---	FCG	.532	.058	9.133	***	par_3
GMC	<---	FCG	.258	.072	3.564	***	par_2
GMC	<---	GRL	.262	.072	3.619	***	par_5
GHCI	<---	FCG	.580	.056	10.343	***	par_1
FMP	<---	GMC	.354	.066	5.377	***	par_8
FMP	<---	FCG	.211	.066	3.198	.001	par_9
FFP	<---	FMP	.686	.039	17.537	***	par_4
GCSI	<---	GRL	.309	.062	5.005	***	par_6
GCSI	<---	GHCI	.256	.064	3.988	***	par_7
GCSI	<---	FCG	.235	.072	3.267	.001	par_10
FFP	<---	GRL	.158	.043	3.652	***	par_11
FFP	<---	FCG	.175	.045	3.914	***	par_12

Source: This study (2017)

The next figure presents the standardised estimates for the defferent constructs developed from this study.

6.15: Standardized Regression Weights

			Estimate
GRL	<---	FCG	.532
GMC	<---	FCG	.258
GMC	<---	GRL	.262
GHCI	<---	FCG	.580
FMP	<---	GMC	.354
FMP	<---	FCG	.211
FFP	<---	FMP	.694
GCSI	<---	GRL	.311
GCSI	<---	GHCI	.257
GCSI	<---	FCG	.237
FFP	<---	GRL	.160
FFP	<---	FCG	.177

Source: This Study (2017)

Figure 6.14, represents results from the study showing ten statistically significant relationships (FMP, FFP,FCG, GMC), while two of the relationships are statistically insignificant.

6.6.3. Hypotheses Verification

This section was dedicated to verifying some of the hypotheses under study. All the hypotheses that were tested were grounded on literature, and all the above were confirmed in this study.

Examining the outputs from the research model, as proposed in the hypothesis, most of the relationship between the constructs were positively related as suggested in the study except for the relationship between firm commitment to green and firm performance which was not an initially proposed hypothesis but was included to improve the model fit. The following section examines the details outputs from the variously stated hypothesis.

(A) Firm Commitment to Green (X1) – Green Human Capital Investment(Y)

Our first hypothesis (H1) was that there was a positive relationship between GCC and GHCI. Mostly, we proposed that firm's policy and implementation commitment to green is likely to result in the firm investing more in green human resources. In line with H1, the findings indicated that firm commitment to green was positively related to green human capital investment, with a standardised estimate value of+0.581. However, this correlation was not only positive, but it was significant at $p<0.01$ or at 99% confidence level or simply at ***. Therefore, a positive relationship between FCG and GHCI was supported in this study, and such a relationship was also found to be significant at 99% confidence level. Interestingly, GHCI offered the most significant results when compared to the other significant variables. This supports the importance of human resources in supporting the green initiatives of firms. As a result, one failed to reject H1, as sufficient evidence exists to support the claim that FCG has a positive and significant (as computed) influence on GHCI.

(B) Firm Commitment to Green(X2) – Green Marketing Capability (Y)

The second claimed hypothesis (H2) tested the association between Firm Commitment to green (FCG) and Green Marketing Capability (GMC). Based on the outcome of this study, it was hypothesised that this relationship was positive. According to the finding from this study, the hypothesis H2 was supported, as a positive relationship between FCG and GMC was established, with a standardised regression weight of +0.536. These results showed a significant linkage between these variables at a 95% confidence level. Therefore, these findings confirm the hypothesis that the relationship is both positive and significant. From the above results, one failed to reject the hypothesis that there is a positive relationship between

FCG and GMC. Therefore, sufficient evidence exists to support the claim that a positive relationship exists between FCG and GMC, a significant and positive relationship was found.

(C) Corporate Governance Commitment to Green (X3) – Green Relationship learning (Y)

The third hypothesis (H3) proposed that there was a positive relationship between corporate governance commitment to green and green relationship learning. The standardised coefficient of CGC to green and GRL was positive and with a coefficient value of 0,36 and was significant as hypothesised. This indicated that H3was in line with the assumed relationship. As a result, one failed to reject the hypothesis that there is a positive relationship between CCG and GRL. This may also imply that there is sufficient evidence to support the claim that CCG has a positive effect on GRL.

(D) Green Human Capital Investment (X4) – Green Marketing Capability (Y)

The fourth hypothesis (H4) posited that there was a positive relationship between GHCI and GMC. Findings from the study showed a positive but insignificant relationship between green human capital investment and green marketing capability (i.e., a factor loading of (0.081). This hypothesis was dropped from the final model to improve the overall model fit as it contributed only 0.08 of the proposed hypothesis. Dropping this hypothesis improved the overall model fit by bringing down the RMSE from over 0.05 to below 0.05in the acceptable range, making all model fit indices acceptable. Therefore, though there was a positive relationship between green human capital investment and green marketing capability, it was insignificant in this study.

(E) Green Relationship Learning (X5) – Green Marketing Capability (Y)

Hypothesis 5 (H5) claimed that there was a positive relationship between GRL and GMC. Findings from the study support this claim as there was indeed a positive and significant relationship between green relationship learning and green marketing capability with a coefficient of 0.261. This direct and positive relationship between these variables the relationship was significant at a 95% confidence level. Therefore, there is sufficient evidence from the study to not reject the stated claim that there is a direct and positive relationship between green relationship learning and green marketing capability.

(F) Green Marketing Capability(X6) – Green Corporate Social Investment (Y)

The sixth hypothesis (H6) suggested that there was a positive relationship between GMC and GCSI. Findings from this study showed that there was indeed a positive but insignificant relationship between green marketing capability and green corporate social investment. This relationship was not significant at a 95% confidence level for both green environmental and green economic, corporate social investment. Given that this relationship was insignificant explaining less than one percent of the variance between these variables. Using the modification indices, this hypothesis was dropped from the final model to improve the overall model fit.

(G) Green Relationship learning (X7) – Green Corporate Social Investment (Y)

The seventh specified hypothesis (H7) claimed that there was a positive relationship between GRL and GCSI. In line with H7, the results of the current study indicated that GRL was positively associated with GCSI (i.e., had a standardised estimate of 0.481). On the other hand, this relationship was not only positive, but it was significant at $p<0.01$. Thus, a positive relationship between GRL and GCSI was supported in this study, and this linkage was also found to be significant at 99% confidence level. Consequently, one failed to reject H7, as sufficient evidence existed to support the claim that GRL has a positive influence on GCSI (with p-value being significant at ***).

(H) Green Human Capital Investment (X9) – Green Corporate Social Investment (Y)

Hypothesis eight (H8) claimed that there was a positive relationship between GHCI and GCSI. The results showed that indeed a positive relationship exists between GHCI and GCSI. This relationship had a factor loading value of +0.481. According to these findings show that firms that invested more in ensuring that their human capital knew more about green were more likely to support green corporate social Investment. In this light, one failed to reject the stated hypothesis that there is a positive relationship between GHCI and GCSI. Moreover, this study also found that this relationship was not only positive, but it was also significant at p = ***. For this reason, and consistent with H8, evidence existed to support the claim that there is a positive relationship between GHCI and GCSI.

(I) Green Marketing Capability (X9) – Firm Performance (Y)

Hypothesis nine (H9) claimed that there was a positive relationship between GMC and FMP. The results showed that indeed a positive relationship exists between GMC and FMP. This relationship had a factor loading value of +0.351. According to these findings firms that

invested more in developing green marketing, capabilities were more likely to have better firm marketing performance. In this light, one failed to reject the stated hypothesis that there is a positive relationship between GMC and FMP. Moreover, this study also found that this relationship was not only positive, but it was also significant at p = ***. For this reason, and consistent with H9, evidence existed to support the claim that there is a positive relationship between GMC and FMP.

(J) Green Relationship Learning(X10) – Firm Performance (Y)

Hypothesis ten (H10) claimed that there was a positive relationship between GRL and FFP. The results showed that indeed a positive relationship exists between GMC and FFP. This relationship had a factor loading value of +0.191. According to these findings firms that invested more in developing a green relationship, learning was more likely to have better firm marketing performance. In this light, one failed to reject the stated hypothesis that there is a positive relationship between GRL and FFP. Moreover, this study also found that this relationship was not only positive, but it was also significant at a 95% confidence level. For this reason, and consistent with H9, evidence existed to support the claim that there is a positive relationship between GMC and FFP.

(K) Firm Marketing performance (X11) – Firm Financial Performance (Y)

Hypothesis eleven (H11) claimed that there was a positive relationship between FMP and FFP. The results showed that indeed a positive relationship exists between FFP and FMP. This relationship had a factor loading value of +0.721. According to these findings firms that had high marketing were more likely to have high financial performance. In this light, one failed to reject the stated hypothesis that there is a positive relationship between FMP and FFP. However, this study also found that this relationship was not only positive, but it was significant at a 95% confidence level. For this reason, and consistent with H11, evidence existed to support the claim that there is a positive relationship between FMP and FFP.

(L) Green Corporate Social Investment (X12) – Firm Marketing Performance (Y)

Hypothesis eleven (H12) claimed that there was a positive relationship between GCSI and FMP. The results from this study showed that this relationship between GCSI and FMP was positive with a coefficient value of 0.01. According to these findings firms that had high green corporate social investment were more likely to have high marketing performance.

Given the low variance of this relationship though it was positive it was excluded from the final model using the modification indices to improve the overall model fit.

6.7. Chapter Summary and Conclusion

The aim of this chapter was to provide a broad discussion on how the data was analysed and how the results were computed. A series of steps were followed, and they started from data coding on Excel, followed by data cleansing process, and data importation to SPSS 24 (for descriptive statistics) and AMOS 24 (for SEM). Once the data was imported into the statistical software, the analysis process started. Consistent with McEachern and Willock's (2004)'s suggestion, the researcher found it advantageous to adopt a SEM for the current study as this tool created the capacity to simultaneously scrutinize a series of relationships. Various studies (for example, Saba & Messina 2003; Tarkiainen &Sundqvist 2005) demonstrated that SEM is a somewhat 'strong' technique to analyse aspects relating firm commitment to green, green marketing capability, and firm performance. Following from these, a two-step procedure as suggested by Anderson and Gerbing (1988) was used to validate the conceptual model using SEM.

Inferential statistics were split into two sub-sections: CFA (for reliability, validity and model fit) and path modeling (for model fit and eventually hypothesis testing). The positive factor loadings between FFG, GMC, GRL, GHCI, and GCSI and firm performance (0, 58; 0, 26; 0, 58; 0, 38; 0, 26; 0, 36; 0, 69; 0, 16 respectively) indicated that the stated hypotheses based on the conceptual model for these variables were verified. This study further established that firms that commit to green and develop green marketing capabilities have a positive impact on firm performance. The next chapter provides a broad discussion of the results and highlights the limitations of the current study.

CHAPTER VII

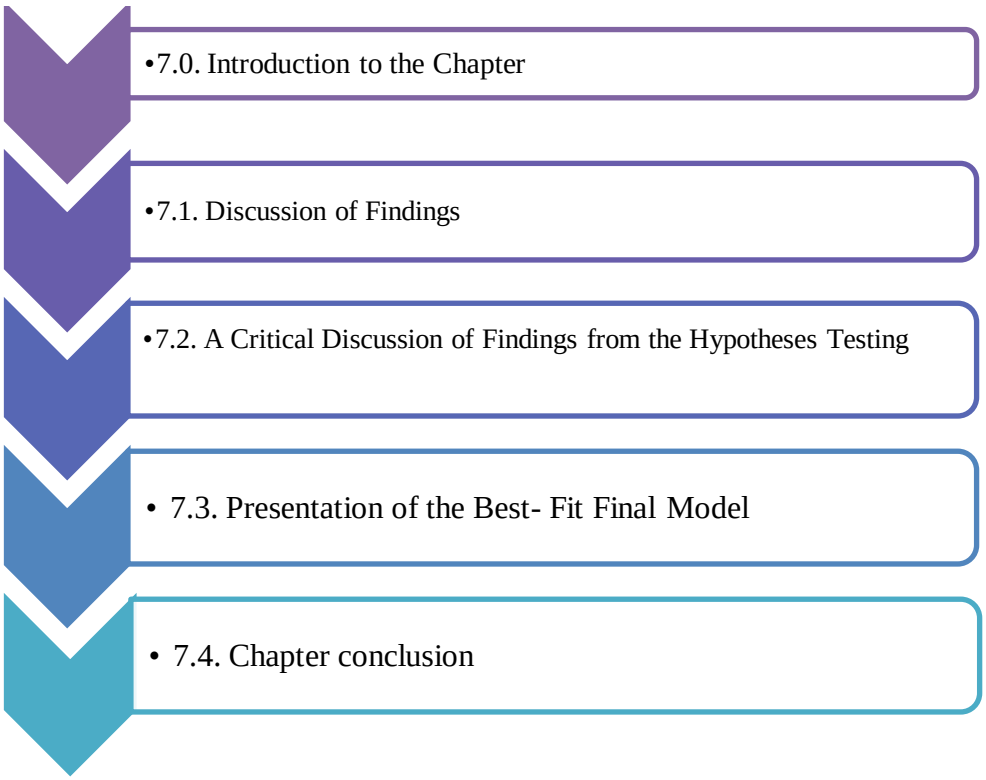
DISCUSSION OF RESULTS, LIMITATIONS

"Capitalism can change the world for the better but, to do so, it needs to reinvent itself. Marketing can contribute, but only by challenging its traditional ways."- Christophe Crosnier,

7.0. Introduction to the Chapter

The first portion of this chapter is focused on the discussion of the findings from the study. In this light, this section expands on the details of the results presented in chapter six to provide better meaning to the findings presented in chapter six. By so doing, a holistic evaluation of the results of the study is presented. Results from descriptive statistics are discussed first, and after that, the findings from inferential statistics are analysed and discussed. Based on the results, a final best-fit model is presented in Figure 7.1.

Figure 7.1: Structure of the Chapter



Source: This Study (2017)

Figure 7.1 presents the structure of the chapter. As presented on the figure, the chapter consists of five main sections: introduction, discussion of findings, a critical discussion of findings from hypotheses testing, presentation of the best fit model and conclusion of the chapter. The following section decusses in details each of the sections of this chapter.

7.1. Discussion of the Findings

Structural Equation Modelling (SEM) through the AMOS 24 statistical software was used to compute the results of the study. The choice of AMOS was in line with the recommendation

from previous studies (Chen, 2010; Baranchi Narayan, 2013) proposed and used SEM in studies on electronics manufacturing sectors and related various variables of the firm to performance. They suggested that the use of SEM is likely to make it possible for researchers to scrutinize a series of relationships simultaneously as was the case in this study. Therefore, SEM has been found to be a relatively reliable technique to analyse various variables of the firm including green marketing capabilities as they relate to a company's performance (De Xia et al., 2014; Carmelo Reverte et al., 2015). The use of structural equation modeling (SEM) was further complemented by the use of Anderson and Gerbing (1988)'s two-step methodology to validate the conceptual model and through SEM. Theories were quantified and tested through this procedure by the researcher. In line with suggestions by Bollen (1989), the use of SEM in this study specified which unobserved variables directly or indirectly affected other latent variables in a model. All the latent variables in the measurement model for this study were validated, and the re-specified model had a better fit to ensure a more parsimonious model.

Table 7.1 Results from Hypotheses testing

Hypotheses	Estimate	S.E.	P
H1: there was a positive relationship between FCCG and GHCI	.532	.058	***
H2: there was a positive relationship between FCCG and GMC	.258	.072	***
H3: there was a positive relationship between FCCG and GRL	.262	.072	***
H4: there was a positive relationship between GHCI and GMC	.580	.056	***
H5: there was a positive relationship between GRL and GMC	.354	.066	***
H6: there was a positive relationship between GMC and GCSI	.211	.066	.001
H7: there was a positive relationship between GRL and GCSI	.686	.039	***
H8: there was a positive relationship between GHCI and GCSI	.309	.062	***
H9: there was a positive relationship between GMC and FPM	.256	.064	***
H10: there was a positive relationship between GRL and FFP	.235	.072	.001
H11: there was a positive relationship between FMP and FFP	.158	.043	***
H12: there was a positive relationship between GCSI and FFP	.175	.045	***

Source: This study (2017)

The results from Structural Equation Modelling- especially on hypotheses testing highlighted the inter-relationships between numerous variables that influence firm performance the

electronics manufacturing sector in South Africa. According to the results of the hypotheses testing, only two of the twelve tested hypotheses were insignificant. More specifically the findings from this study assisted in validating the explanatory ability of Firms Commitment to Green on a firm's performance and green corporate social investment, the explanatory ability of green marketing capability, green relationship learning and green human capital investment on firm performance and green corporate social investment. Furthermore, the findings also offered substantial support for the robustness of a company's commitment to green in explaining firm performance and green corporate social investment. Following from the results of this study, this research sheds light on how a company's commitment to green in explaining green marketing capability, green relationship learning, green human capital investment and how these explain firm performance and green corporate social investment. In this analysis of how a company's commitment to green, green marketing capability relates to a firm's performance and green corporate social investment. A firm's commitment to green was found to be a predictor of a firm's performance while green marketing capability, green relationship learning, and green corporate social investment were found to be mediators. Findings from this study were in line with previous findings (Kushwaha and Sharma, 2016; Belz, 2005; Baker & Sinkula, 2005). The present study also validated a model that predicted how firm commitment to green and green marketing capabilities relates to a company's performance for electronic manufacturers in South Africa. The study showed that ENV, GMCP, GMCS, GRL, GHCI all had a positive relation to both firm performance and green corporate social investment. Further analysis also revealed that GCSI also had a positive impact on firm performance. The variable that had the greatest positive impact on firm financial performance was a firm's marketing performance.

Before performing SEM, a descriptive analysis of demographic variables such as gender, age group, particular industry sector, the number of year’s firm has been in business, educational level, the position of the respondent in the firm, ownership of the firm, and listing of the firm on the leading stock exchange was carried out. For this descriptive analysis, SPSS 24 was used. However, no inferential tests (regarding hypothesis testing) were done on the demographic variables, and the discussion is mainly based on previous studies. Descriptive analysis was also carried out on the consumer response to various variables under study including a firm commitment to green, green marketing capability, green relationship learning, green human capital investment, green corporate social investment and firm performance. The study showed that many respondents (i.e., 77.4%) were male and 22.6%

were female. A conceivable explanation for this may be because many manufacturing firms in South Africa are still mainly owned by mostly white men (Commission on Employment Equity 2016). Moreso, manufacturing is still considered a masculine field, and this has not changed in South Africa since the transition to democracy.

Examining the age of the respondents, findings from the study showed that it was also normally distributed with a majority of the respondents between the ages 46 and 65 years old.0.5% of the respondents were between the ages of 18 to 35, 8.5% between the ages 36-45 years old, 31.6% between 46 and 55years old, 43.9% between 56 and 65 years old and 15.6 % above 65 years. The age distribution with a majority of respondents over 45years old was not surprising as the respondents were mostly senior managers and owners of electronic manufacturing companies in South Africa and not individuals still starting off their carriers. Previous studies (Jose and Jabbour, 2011); Hillestad et al., 2010); Papadopoulos et al., (2010) on green marketing in manufacturing companies also focused on respondents within this age as they were found to be in senior positions and able to reflect the company position on commitment to green and green marketing. Conventional wisdom will also support the fact that employees that have been with the company for a long time and are more mature or owners of the company are more likely to know the company position on issues of corporate governance and commitment to green than younger or lower level employees.

This study also found out that a majority of the respondents over 80 percent had a post matric qualification. 35.8% had a Diploma, 40.6% had a university degree, and 11.3% had a post-graduate degree. Given the fact that the respondents were mostly senior managers and owners, in a skilled profession, there is a need for post matric education, and that was reflected in the findings.

The results showed that the respondents were highly educated and could understand the English language used on the questionnaires. Research has shown that more educated managers or company owners are more likely to comprehend the pressures from both consumers and legislators to go green and are more apt to respond positively to these pressure by committing to green.

Current literature has extensively examined the impact of manager's education level on firm performance. For example (Bertrand and Schoar, 2003; P_erez-Gonz_alez, 2006; Bennedsen, P_erez-Gonz_alez and Wolfenzon, 2006; Bennedsen et al., 2007; Goodall, Kahn and Oswald, 2011; Kaplan, Klebanov and Sorensen, 2012; Bandiera, Prat and Sadun, 2013; Becker and

Hvide, 2013; Mion and Opromolla, 2014; Custodio, Ferreira and Matos, 2015; and Lazear, Shaw and Stanton, 2015). Studies further showed the positive relationship between manager's education levels and coordination ability and firm performance (Penrose, 1959; Chandler, 1977; Bloom and Van Reenen, 2007; Queiro, 2016). However, there are studies showing no definitive relationship between education levels and managers commitment to green or other performance related policies of the organisation. In this study, the focus was not mainly to test the relationship between manager education level and a firm commitment to green or any other performance variable. This study, however, realised that majority of the companies were managed by owners or managers with post matric education levels.

According to the general descriptive analysis, a majority of the respondents were mostly males and mostly white. The figures showed that 76.9% of the respondents were males as compared to only 23.1 % females. It was further revealed that 78.3% of the respondents were whites compared to only 32.7% blacks. This shows that the industry is still dominated by both management and ownership by white males.These figures are less impressive within the context of South Africa where the transformation of industry from its pre-994 era remains a key government priority. All respondents were either managers only or managers and owners. Given the senior position of the respondents, it was more likely to get the required information concerning firm commitment to green. A majority of the respondents also fell between the ages of 46 and 65 years old (43.9%). This was expected given the senior position of the interviewees within their organisations. It was also found that over 51% of the business had been in business for over 20 years. This gave us an indication of some stability and ability of these managers to articulate policies of the organisation. The above discussion showed that the demographics of managers of electronics companies in South Africa showed that they had the necessary capability to take decisions for the firm to commit to green. They were also in a position to know the current board position of the company concerning commitment to green. Given that these respondents were top management, it was also important that they had a strategic view of the organisation and were able to respond to issues of marketing capability and firm performance.

The following section is focused on describing how the measurement of reliability and validity were computed both descriptively and through inferential statistics. After that, the study discusses how the model fit was calculated. Under reliability, the Cronbach's α value for the study variables varied between 0.616 and 0.861. As a result, all the constructs surpassed the acceptable threshold of 0.6 (i.e., $0.6 \leq \alpha < 0.7$ = Acceptable). Other constructs

surpassed the threshold recommended by Byrne (2006) of 0.7 (i.e., $0.7 \leq \alpha < 0.9$ = Good). More importantly, some of the variables reached or surpassed the 'excellent' threshold of > 0.9. Overall, the study constructs were deemed to be reliable. As descriptive statistics, together with the Cronbach's α, is relevant but insufficient to confirm the reliability of constructs, the researcher opted for a more statistically valid way of computing reliability. Accordingly, Composite Reliability (CR) values were computed, and they ranged between 0.661 and 0.856. Therefore, all study constructs met the threshold suggested by Fornell and Larcker (1981) as well as Hulland (1999). At that stage, the researcher was self-assured and confirmed that the variables were indeed reliable. After passing the reliability requirements, the researcher also checked whether constructs were valid – i.e., whether or not they measured what they purported to measure (Ghauri & Gronhaug, 2002). All the items reached the recommended threshold of > 0.5 to justify a fairly acceptable level of convergent validity. AVE was also computed, and findings showed that most of the variables met the minimum threshold of above 0.5. Others met the marginally acceptable threshold of 0.4 suggested by Fraering and Minor (2006). Furthermore, discriminant validity was guaranteed because all correlations from the inter-construct correlation matrix did not show any problems of multicollinearity (i.e., there was no high correlation value of > 0.8 between constructs). Given that the inter-construct correlation was <0.8 for all constructs was prove that a sense of uniqueness did exist among the constructs. Accordingly, all variables met Fraering and Minor (2006)'s recommended threshold.

Once the other variables were confirmed to be reliable and valid, the researcher went on to check model fit. Under CFA, the model was found to be relatively acceptable as the overall model fit indices met the threshold of > 0.9 as recommended by various authors (Bentler, 1990; Browne and Cudeck, 1993; Marsh et al., 1996). The $\chi 2/(df)$ was < 3 (i.e., 2.096) while RMSEA was < 0.08 (i.e., 0.064). Model fit under path modeling showed minor differences when compared with the findings from CFA. The provisionally acceptable model fit was achieved after deleting some items (though no parameters were added) to improve the overall fit. Ultimately, the model reached the acceptable fit thresholds and hence was provisionally accepted. After the model was confirmed and reached the acceptable fit requirements, the last step was to test the structural paths of the previously hypothesised model. The following section provides more meaning to the findings from hypothesis testing.

7.2. A Critical Discussion of the Findings from Hypotheses Testing

7.2.1. Firm Commitment to Green- Green Marketing Capability

This study hypothesised that there was a direct and positive relationship between firm commitment to green and green marketing capability.Based on the proposition by the stakeholder theory different stakeholders pressure firms to take certain actions (Freeman & Reed 1983, Jawahar & McLaughlin 2001, Clarkson 1995; Hill & Jones 1992, Langtry 1994), this study used the stakeholder theory to relate corporate commitment to green and green marketing capability. We developed the construct firm commitment to green and green marketing capability and stated the hypothesis that green marketing capability in electronic manufacturing firms in South Africa emanates from a company's commitment to green due to pressure from both consumers and government legislation (Darnall et al. 2010; Frynas and Yamahaki, 2016).Current studies hold that businesses that commit to green replace its natural resources use with alternatives which have positive outcomes for both the business and the environment (Dallas 2008).This was amplified by (Gunningham, Kagan & Thornton 2003), who state that companies that commit to green must do so by having among other things green vision with strategic plans based on long-term objectives and not on short-term goals only. Following from these studies and our stated hypothesis one would expect firms with a higher commitment to green to develop more green marketing capability. This was tested in the electronics manufacturing sector in South Africa, and the findings from the study supported this hypothesis that firm commitment to green relates positively to green marketing capability. Current studies have also found a positive relationship between firm commitment to green and green marketing capability (Kushwaha and Sharma, 2016; Belz, 2005; Baker & Sinkula, 2005). Moreso, this study did not only find that there was a positive relationship between firm commitment to green and green marketing capability but the relationship was significant at $p < 0.01$. The findings from the study were in line with (Ambec and Lanoie, 2008; Berchicchi et al., 2012, Clarkson et al., 2011; Molina-Azorin et al., 2009), who found that firm commitment to green positively and significantly influence green marketing capability. The factor loading for this hypothesis was +0.26. One can, therefore, assert that the current study established that firms that committed to green from a corporate governance level were more likely to develop green marketing capability.

However, a hand full of authors (KC Shang, CS Luand S Li, 2010; K Agestam and M Karlsson, 2010) have found that firm commitment to green relates negatively with green

marketing capability. A hand full of other authors even found that the relationship between firm commitment to green and green marketing capability was inconclusive. Following the discussion above, one can, therefore, caution that the positive and significant relationship between firm commitment to green and green marketing capability is far from being conclusive, though the evidence from this study supports the claim. One would need to continue to research on this hypothesis controlling for different variables like industry sector, race, location, sex, the size of firm among others to continue to get improved results.

7.2.2. Firm Commitment to Green-Green Relationship Learning

Looking at the results of the relationship between a firm's commitment to green and green relationship learning, the statistical results of this study revealed that there was indeed a positive correlation between firm commitment to green and green relationship learning.The results also showed that apartment from being a positive relationship between these two constructs; the relationship was very strong with a factor loading of +0.53. This relationship was also found to be significant at (P= ***). These results were similar to those of previous studies that showed that there is a positive relationship between firm commitment to green and green relationship learning. This was in line with previous research showing that the increase in global warming, increased environmental degradation and its effects on humanity and other creatures the world over have resulted in a new kind of consumer today. A new kind of customer that demands more from companies and the government and vote with their buying power (Chamorro and Bañegil, 2005). Research evidence points to the fact that these types of consumers are increasing globally and businesses can no longer ignore their concerns. The findings from this study reinforce the green need for businesses to learn about the needs of their consumers. There is also an increased regulatory framework in South Africa such as environmental agreements signed by governments and governance codes such as the King 3 code of governance for South African companies (Institute of Directors, 2008). Businesses need to increase their green relationship learning and understand of these regulations. These regulations require companies to comply with integrated reporting and to ensure that needs of stakeholders especially consumers and communities are catered for by businesses. In this light, committing to green has become prevalent in businesses the world over. According to (Graci and Dodds, 2008) various industries have now focused on understanding the business case for green as evident in the findings from this study.

7.2.3. Firm Commitment to Green-Green Human Capital Investment

Our literature review showed that the business case for firms to go green is at an all time high and firms across industries including manufacturing are aligning their human resources to this new normal ((Ambec & Lanoie, 2008). There are increased calls in current literature for firms to go beyond a commitment to green to actual green HR practices (Jackson &Seo, 2010). This has led to various organisations aligning their HR policies to green commitments and ensuring that firms HR practices are aligned to green (Jabbour, 2013a), and to the strategic view of the firm (Haddock-Millar., Sanyal. & Müller-Camen, 2015). Literature ((Harvey, Williams, &Robert, 2013), positive links employee's green practices to a firm commitment to green. Therefore, within this context, this study initially hypothesised that there is a positive relationship between firm green commitment and green human capital investment.

The results from the calculations and modeling in this study indicated that firm commitment to green was positively related to green human capital investment, with a standardised estimate value of+0.581. This outcome showed a strong positive relationship between these variables and thus supported our proposed hypothesis. Secondly, this relationship was both positive and significant at $p<0.01$ or at 99% confidence level or simply at ***. Therefore, a positive relationship between FCG and GHCI was supported in this study, and such a relationship was also found to be significant at 99% confidence level. Interestingly, GHCI offered the most significant results when compared to the other significant variables. This supports the importance of human resources in supporting the green initiatives of firms.While various authors have shown that companies are increasingly committing to green today due to increased and fast environmental degradation the world over (Kock et al., 2012; Madsen, 2009; Nejati et al., 2014; Walker and Wan, 2012; Zou et al., 2014), the link between this commitment to green and green human capital investment had not yet been established especially in the electronics manufacturing sector in South Africa. Findings from this study though related to current literature, have extended current literature by proposing and testing new linkages between a firm commitment to green and green human capital investment. Findings from this study are in line with recommendations from (Jackson S. E et al., 2011), who suggested that research should be carried out linking green human resources to other business areas. These findings further support literature proposing the integration of firm commits to green to different areas of business. For example, (Jabbour and Jabbour, 2016), integrated firm commitment to green to supply chain management, we have now extended the

application of such integration to green human capital investment through the construct in this study.

7.2.4. Green Human Capital Investment– Green Marketing Capability

Human capital investment is increasingly becoming a critical management imperative according to literature in line with the capability theory of the 1960s (Sweetland, 1999). Firms can no longer ignore the importance of empowering their human capital that enables the production processes to ensure that the goals and missions of the organisation are met. Research shows that firms are increasingly aligning their human capital to green with the increased business case for green the world over (Ambec & Lanoie, 2008). This has resulted to researchers studying the relationships between investing in greening human resources and other business areas. Areas focused on in recent literature have included but not limited to: aligning Human Resource Management (HRM) policies, systems, and practices with environmental management (Jabbour, 2013a). In line with current research which related green HR investment with green output, this study proposed and tested the relationship between green HR investment and green marketing capability (Aragon-Correa, Martin-Tapia, & Hurtado-Torres, 2013; Renwick, Redman, & Maguire, 2013). We proposed that there was a positive relationship between GHCI and GMC. The results from our analysis in this study showed a positive but insignificant relationship between green human capital investment and green marketing capability (i.e., a factor loading of (0.081). Given this low factor loading, we decided to drop this hypothesis in the best fit model given that dropping it improved the overall model fit. Dropping this hypothesis improved the overall model fit by bringing down the RMSE from over 0.05 to below 0.05 in the acceptable range, making all model fit indices acceptable. Therefore, though there was a positive relationship between green human capital investment and green marketing capability, it was insignificant in this study. Though this relationship was found to be insignificant in this study, this is not conclusive as current literature shows that human capital investment enables green production and firm output (Yap C. and Rashid Md, 2011). Given that our study was carried out only in the electronics manufacturing sector, in line with current research, it might be necessary to test this same hypothesis in other sectors on within same sector using other grouping variables such as firm size (Bao, 2015).

7.2.5. Green Relationship Learning – Green Marketing Capability

In this study, the research adopted the definition of the relationship being connections and networks that exist between businesses and companies, businesses and consumers, companies and suppliers or with any other stakeholder (Lin and Chang (2008). This was used in this study in the context of the relationship that exist between manufacturers and other manufacturers through industry associations and other informal relationships, relationships between manufacturers and suppliers, relationships between manufacturers and consumers, relationships between manufacturers and government and legislators, relationships between manufacturers and other stakeholders in the electronics manufacturing in South Africa. The literature showed that relationship learning improves quality and reliability of services and products offered by companies (Lin and Chang, 2008; Lukas et al., 1996; Selnes and Sallis, 2003). In line with existing literature, this study developed and tested a hypothesis that proposed that there was a positive relationship between GRL and GMC. Results from the study supported this claim showing that there was indeed a positive and significant relationship between green relationship learning and green marketing capability with a coefficient of 0.261. The relationship between these two constructs was not only positive and direct but was also significant at a 95% confidence level. Therefore, there is sufficient evidence from the study to not reject the stated claim that there is a direct and positive relationship between green relationship learning and green marketing capability. These findings are supported in literature that proposes that firms marketing capability can be improved through relationship learning that enables firms to learn from firm's stakeholders such as consumers, suppliers, government, communities who carry lots of knowledge that can enable the firm's ability to deliver its products or services more efficiently and effectively to meet the needs of consumers (Singh et al., 2008).

Despite the fact that our findings were supported in the literature, there is also literature that shows that findings from studies relating relationship learning and marketing capability were mixed or inconclusive (Sheng and Chien, 2016). Within this context, findings from the construct in this study need to be applied with caution especially when applying them to other sectors or context. However, these findings form the basis for further academic research as we continue to resolve the puzzle of relating relationship learning to marketing capability especially green relationship learning that was developed in this study. This is because the literature shows that cost of relationship learning sometimes inhibits firms from engaging in some relationship learning activities (Witajewski-Baltvilks et al. (2015).

7.2.6. Green Marketing Capability– Green Corporate Social Investment

In this study, we defined marketing capability as a firm's ability to "integrate, reconfigure, gain and release" resources (Eisenhardt & Martin, 2000) and "business strategy facilitators" that enable a company to implement its strategy and archive superior performance in the market (Vorhies, Morgan and Autry (2009). Following from these definitions, we developed the concept of green marketing capability which is the ability of the firm to integrate reconfigure, gain and release resources in a manner that is environmentally friendly and with minimal impact on various stakeholders. In line with existing literature, we proposed and tested a hypothesis that suggested that there was a positive relationship between GMC and GCSI. Results from this study showed that there was indeed a positive but insignificant relationship between green marketing capability and green corporate social investment. This relationship was not significant at a 95% confidence level for both green environmental and green economic, corporate social investment. Given that this relationship was insignificant explaining less than one percent of the variance between these variables. Using the modification indices, this hypothesis was dropped from the final model to improve the overall model fit.

Despite our findings, current literature has shown a positive and significant relationship between green marketing capability and green corporate social responsibility. For example (Kushwaha and Sharma, 2016), found a positive and significant relationship between marketing capability and green CSI. However, it must be noted that their study was focused on the auto mobile sector. This indicates that sector specific studies might give mixed results on the relationship between green marketing capability and green CSI. Other studies have shown that the relationship between green marketing capability and green corporate social investment was significant for small firms (Kumar, 2015). This also shows that within the same industry, using grouping variables such as firm size can result in significant relationships between the variables. In the case, of electronics manufacturing companies in South Africa, there might need to carry out the same studies using grouping variables such as firm size. Based on the discussion above, the findings from this study should not be taken as definitive as there is a need for further research to resolve some unanswered questions.

7.2.7. Green Relationship learning– Green Corporate Social Investment

This study adopted the definition of green relationship learning from the works of (Chen and Chang, 2011) who defined GRL as learning activities about environmental management that

are facilitated by business relations, information exchange, developing common learning arenas and updating corporate action accordingly from suppliers, customers, partners, and stakeholders. We then developed a hypothesis that related green relationship learning to green corporate social investment in line with literature and the stakeholder theory. We proposed and tested the hypothesis that there was a positive relationship between GRL and GCSI. Results from my study indicated that GRL was positively associated with GCSI (i.e., had a standardised estimate of 0.481). On the other hand, this relationship was not only positive, but it was significant at $p<0.01$. Thus, a positive relationship between GRL and GCSI was supported in this study, and this linkage was also found to be significant at 99% confidence level. Consequently, this study failed to reject H7, as sufficient evidence existed to support the claim that GRL has a positive influence on GCSI (with p-value being significant at ***). These findings were in line with current literature that found a similar relationship between green relationship learning and firm performance. For example, (Mirvis P. et al., 2016) studied the relationship between knowledge from external stakeholders and innovations in CSI. Their findings showed a positive and significant relationship between the variables under study. Despite the discussions and findings from this study showing a positive and significant relationship between green relationship learning and green CSI, the findings are can still be improved by examining industry specific, continent, firm size or using any other grouping variables.

7.2.8. Green Human Capital Investment– Green Corporate Social Investment

Current research suggests that greening HR role is crucial for realising strategic sustainability goals of an organisation including green CSI (Haddock-Millar et al., 2015). The literature further relates success in green initiatives including green CSI to green HCI (Paille´ et al., 2014). Within this context, this study developed and tested a construct that proposed that there was a positive relationship between GHCI and GCSI. Findings from our analysis showed that indeed there is a positive relationship between GHCI and GCSI. The factor loading for this relationship was +0.481. The results in line with existing literature (Haddock-Millar et al., 2015) showed that firms that invested more in ensuring that their human capital knew more about green were more likely to support green corporate social Investment. The findings enabled the study to fail to reject the stated hypothesis that there is a positive relationship between GHCI and GCSI. Moreover, this study also found that this relationship was not only positive, but it was also significant at p = ***. In line with the resource dependent theory, findings from this study also highlight the fact that green human resources

especially green management and boards are more likely to enhance the realisation of green initiatives or green goals of the organisation such as green CSI (de Villiers et al. 2011, Ortiz-de-Mandojana et al. 2012, Hafsi & Turgut 2013, Mallin et al. 2013).

This construct was further grounded in the resource based view theory of the firm (Penrose, 1959). Penrose showed that there were fundamental differences in firm's strategic and resource capability including human resources. Therefore, firms that explore their resources better were more likely to get better sustainable results. This study in line with this theory and other literature showed that firms that explore their human resources more by greening them and using them better were more likely to get greener CSI outcomes. Other authors for example, (Chen et al. 2006), found out that capabilities or resources developed by firms to realize firm performance and green CSI. This is in line with our findings that enhancing green human capital investment results in green CSI.

Despite the discussion above and conclusions supporting our tested hypothesis, there is room to do more analysis in other sectors, on a broader scale or using other measurement units to continue to improve the understanding of the relationship between these constructs.

7.2.9 Green Marketing Capability– Firm Marketing Performance

Following the Resource Based View of the Firm as Proposed by Penrose (1959), this study proposed that electronic manufacturing companies in South Africa possess rare, hard to copy green marketing capability. We further in line with current literature proposed that such capabilities are directly related to firm marketing performance through enabling the firm to have a competitive advantage over others (Falkenberg & Brunsael 2011, Peters et al. 2011). We then stated and tested a hypothesis that there was a positive relationship between GMC and FMP.

According to the findings, indeed a positive relationship exists between GMC and FMP. This relationship had a factor loading value of +0.351. The findings showed that firms that invested more in developing green marketing capabilities were more likely to have better firm marketing performance. In this light, one failed to reject the stated hypothesis that there is a positive relationship between GMC and FMP. Moreover, this study also found that this relationship was not only positive, but it was also significant at p = ***. Our findings that a positive and significant relationship existed between green marketing capability and firm marketing performance were in line with studies by various authors. For example, (Greene,

Walls, and Schrest, (1994), found out that marketing success depends on internal marketing capability. Other authors in support of this view, found out that green product innovation was related positively to firm marketing performance (Clare D'Souza Mehdi Taghian Peter Lamb Roman Peretiatkos, (2006), green product development related positively to marketing performance (Jabbour C. J, Jugend D, Sousa Jabbour A, Gunasekaran A, and Latan A (2015), green marketing innovations and firm performance (Kushwaha and Sharma, 2016; Yu-Shan Chen, 2008).

Other authors did industry specific research on green initiatives, for example, green marketing capability and firm performance. In line with our findings, there was also a positive relationship found in various industry specific studies. For example (Kushwaha and Sharma, 2016), studied the relationship between green marketing initiatives and firm marketing performance in the automobile industry and found a positive and significant relationship. Other authors examined this relationship with a focus on the entire manufacturing sector and found a positive relationship. For, example (Digalwar et al., 2013) focused on the performance impact of green manufacturing in India and found a positive relationship with green marketing capability and performance.

However, other authors in examining the relationship between green marketing capability and firm marketing performance, called for the need for synergy with other business areas to enhance performance impact (Xu et al., 2015). Other authors also suggested that a broad domain of green marketing should be studied to fully understand the performance impact. For example (Chahal et al., 2014) proposed the following domains: greening the process, green supply chain management, green strategic policy initiative, proactive energy conservation and green innovation of green marketing and that there was a positive relationship between these domains ad firm marketing performance.Following from the findings from this study and the above discussion, the results from this study are not definitive as there still exist various gray areas for research to fully understand how green marketing capability relates to firm marketing performance.

7.2.10 Green Relationship Learning– Firm Financial Performance

In this study, the researcher adopted (Chen and Chang, 2011) definition of green relationship learning and defined GRL as learning activities about environmental management that is facilitated by business relations, information exchange, developing common learning arenas and updating corporate action accordingly from suppliers, customers, partners, and

stakeholders. The study in line with (Luo and Bhattacharya, 2009) related green relationship learning to firm financial performance. This research thus proposed and stated a hypothesis that claimed that there was a positive relationship between GRL and FFP. The findings from the analysis showed that indeed there was a positive relationship between GMC and FFP. This relationship had a factor loading value of +0.191. These findings showed that firms that invested more in developing green relationship learning were more likely to have better firm marketing performance. In this light, one failed to reject the stated hypothesis that there is a positive relationship between GRL and FFP. Moreover, this study also found that this relationship was not only positive, but it was also significant at a 95% confidence level. This study found evidence in line with previous research (Carter, 2005) to support the claim that there is a positive relationship between GMC and FFP. Various other authors have also found a positive relationship between firm learning and performance. For example (Akgün A. E and Kirçovali 2015) found a positive relation between firm wisdom and firm performance; different learning orientations had different impacts on performance (Wong; Cheung; and Fan, 2009); knowledge sharing behaviours was found to be positively related to performance (Marques et al., 2008).

Other found that the impact of relationship learning on firm performance was influenced by other factors such as innovation (Akguna et al., 2007); market orientation and CSI influenced the way relationship learning impacted performance (Han et al., 2013); supervised learning from stakeholders through the firms annul reports impacted positively on performance (Qiu et al., 2014); competitive leaning through competitive learning intelligence enabled product innovation and firm performance (Yap and Rashid; 2011). Other studies found a negative relationship between relationship learning and firm performance (Goerzen, 2007). Therefore, the findings from this study are not definitive, and more research needs to continue to better understand the relationship between these variables.

7.2.11 Firm Marketing Performance– Firm Financial Performance

Based on previous literature (Sun, 2010; McAlister, 2007), it is established in literature that marketing capability relates positively to financial performance. Literature further shows that firm marketing performance relates positively to financial performance. Based on this, this study proposed that there was a positive relationship between FMP and FFP. This hypothesis was tested on the collected data, and the findings showed that indeed a positive relationship exists between FFP and FMP. This relationship had a factor loading value of +0.721.

According to this finding firms that had high marketing were more likely to have high financial performance. In this light, one failed to reject the stated hypothesis that there is a positive relationship between FMP and FFP. However, this study also found that this relationship was not only positive, but it was significant at a 95% confidence level. For this reason, and consistent with H11, evidence existed to support the claim that there is a positive relationship between FMP and FFP.

These findings are well supported in the literature. For example (Matute, 2013), found out that marketing performance is directly related to firm financial performance. On the other hand, Chen (2008), showed that marketing performance is not only related to firm financial performance but also innovation performance.Other studies found out that marketing performance is enabled by efficient management to result in firm performance (Amores-Salvad et al., (2014), this was very important for our findings as it continues to show variables that could be studied as mediating variables in studying the relationship between marketing and firm performance.The literature further showed that firm marketing performance is influenced by various domains of green marketing. These domains are positively related to firm's performance (Chahal et al., 2014)

It was interesting to note that none of the past studies have yet found a negative relationship between marketing performance and firm financial performance. It was not surprising research focus on reviewing the state of research in green marketing supported this assertion (Kumar, 2016). It is not surprising as the findings from this study showed that this was the strongest positive relationship with the highest factor loading. Despite this discussion and findings, there will need to continue to study the factors that enable marketing performance as they vary and have different impacts on marketing performance as indicated above.

7.2.12 Green Corporate Social Investment– Firm Marketing Performance

With increased environmental legislations the world over, companies have not only moved to green manufacturing but also green CSI (Kumar, 2016). Based on this imperative and the fact that various studies have developed the conceptual relationship between green CSI firm performances (Barnett 2007, 2014), this study proposed and tested a hypothesis that there was a positive relationship between GCSI and FMP. The findings from this study showed that this relationship between GCSI and FMP was positive with a coefficient value of 0.01. According to these findings firms that had high green corporate social investment were more likely to have high marketing performance. Given the low variance of this relationship

though it was positive it was excluded from the final model using the modification indices to improve the overall model fit. The findings from the study were in line with various other studies that found a positive relationship between green CSI and firm performance (Wang & Choi 2013, cf. Mellahi et al. 2016). The literature further showed that firms that are good corporate citizens could also do well financially (Wang and Hus, 2011). Based on these findings other authors examined the relationship between green CSI and firm performance and realised that consumer loyalty enables firm performance when firm get involved in green CSI (Khalid and Rahman, 2015). Green CSI was further found to improve consumer's psychological attachment to a brand and thus loyalty and firm performance (Arikan and Gunner, 2013).

However, many more empirical studies have either shown mixed or negative results from studying the relationship between green CSI and firm performance (Wang & Choi 2013; Oikonomou et al., 2014; Saeidi and Sofian, 2014). Therefore, it wasn't surprising that the factor loading was so low and the hypothesis has to be eliminated from the final model to improve the model fit.Based on the above discussion and findings, one can, therefore, state that the conclusions from this hypothesis are therefore not conclusive. There will be a need for further research on the variables under study.

7.2.13 Firm commitment to Green- Firm Performance

This study initially proposed and stated the hypothesis that showed that the relationship between firm commitment to green and firm financial performance was mediated by various factors such as green marketing capability, green relationship learning and green CSI as identified in the literature. However, the empirical analysis suggested a direct relationship between firm commitment to green and firm financial performance to improve model fit. This relationship was proposed and incorporated as it has both theoretical and empirical backing. For example, (Munisi and Randøy, 2013) examined the relationship between corporate governance commitment to green and firm performance; governance and performance of listed companies (Zabri, Ahmad, and Wah, 2016). The relationship between firm commitment to green and firm financial performance was tested, and a positive and direct relationship was found. The relationship was also significant at a P-value less than 0.05 or ****.

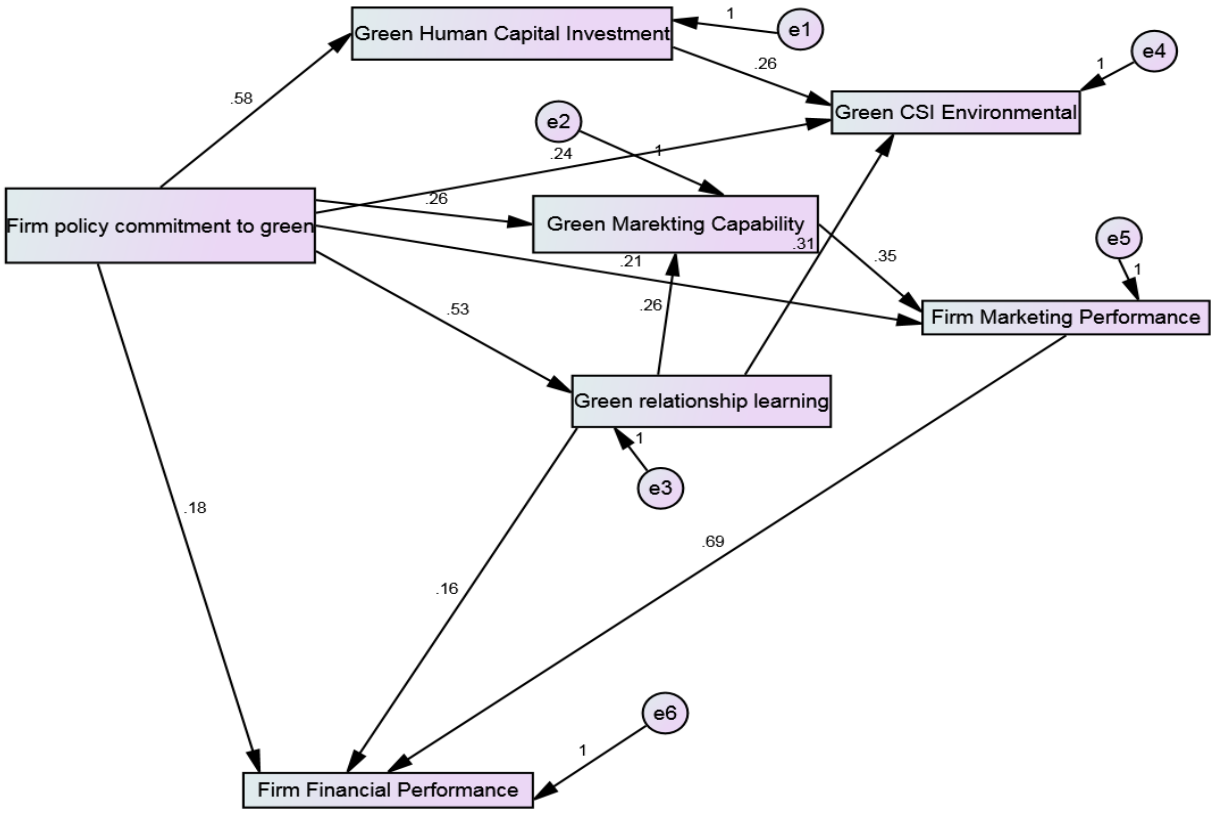
The findings from this study were in line with previous studies that found that firms are shifting strategy to derive dividends from commitments to green (Noonan and Coleman,

2013); there was a positive relation between a firm commitment to green and environmental and financial performance (Dallas 2008). The discussion in this section showed that the findings are supported in the literature, however, one needs to not take the findings as conclusive given that only the electronics manufacturing sector was studied and results may show otherwise in other sectors. Thus, there is a need for continuous studies on the subject and also looking at other variables and sectors of the economy to continue to develop knowledge in the area.

7.3. Final Best-Fit Model for the relationship between Firm Commitment to Green, Green Marketing Capability, and Firm Performance

The findings above were obtained through the final best-fit model, which demonstrated that SEM is an effective data-analytic technique that can be further used in examining the relationship firm commitment to green, green marketing capability and firm performance. This model is represented in Figure 7.1 below.

Figure 7.1: The Final Best-Fit Model



Source: This study (2017)

The final best fit structural model presented in Figure 7.1 above reveals that the four main variables both predictor and mediating variables, namely, FCG, GMC, GRL and GHCI directly and significantly influenced green corporate social investment and firm financial and marketing performance. All the variables were retained in the final model and however, some of the relationships were dropped from the final model though they were positive relationships to improve the model fit.

Briefly stated, the final best-fit from SEM suggested that:

(i) CFCG significantly and positively influenced Green marketing capability
(ii) FCG significantly and positively impact green human capital investment
(iii) FCG significantly and positively affect green relationship learning
(iv) FCG positively influenced firm financial performance
(v) GRL positively and significantly impact green marketing capability
(vi) GRL positively and significantly impact GCSI
(vii) GRL positively and significantly influence firm performance
(viii) GHCI positively affected green marketing capability
(ix) GHCI positively affected green marketing capability
(x) GHCI positively affected green CSI
(xi) GMC positively and significantly affects firm marketing performance
(xii) GMC positively influence Green CSI
(xiii) GCSI related positively but insignificantly to firm performance
(xiv) FMP related significantly and positively to firm performance

7.4. Chapter Conclusion

The above section provided a discussion of the results that were presented in Chapter 6 above. This discussion sought to give meaning to the computed findings from the previous chapter. A discussion on the findings from both descriptive and inferential statistics was provided. After this debate, and based on the results of the current study, the final best-fit model was presented. It excluded non-significant relationships from the model but retained all variables. The next chapter seeks to highlight some of the recommendations, implications resulting from the above discussion on the findings of this study and also provides limitations, a conclusion as well as directions for future research endeavours.

CHAPTER VIII

RECOMMENDATIONS

&

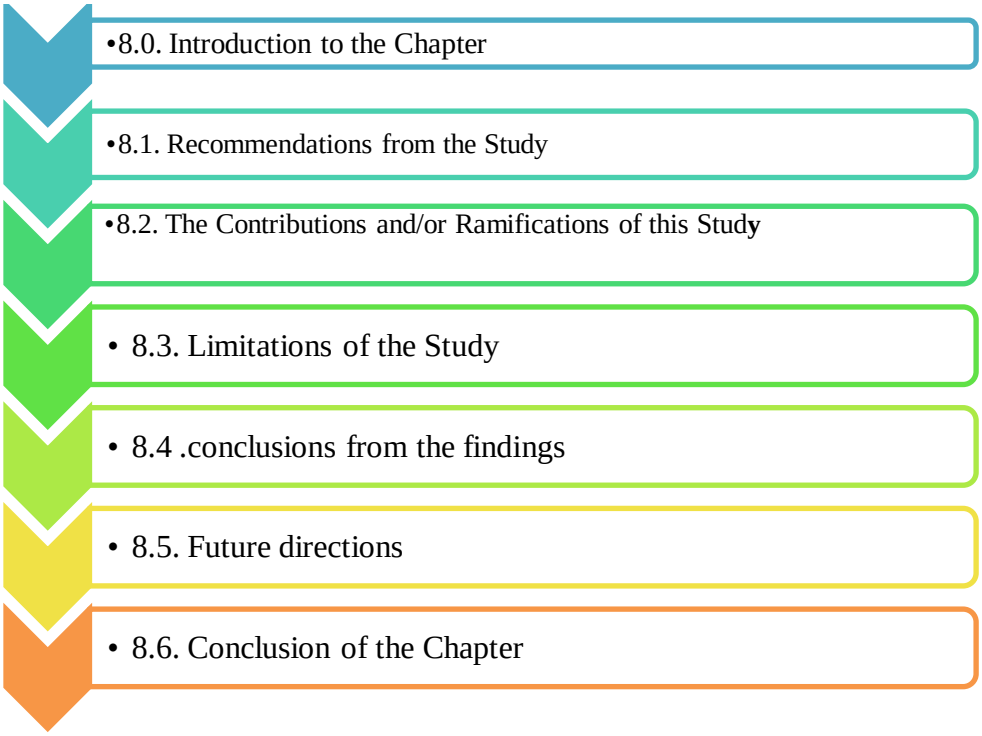
CONCLUSION

"I believe in innovation and that the way you get innovation is you fund research and you learn the basic facts. " **-Bill Gates**

8.0. Introduction to the Chapter

This chapter presents the recommendations based on the results and the discussions on the findings of this study. Followng the presentation of the recommendations, an analysis of the implications together with the contributions of the research to academia and practice is presented. Given that no study is immune from the inevitable constraints, this study also outlined some of the fundamental limitations relating to it. Following the presentation of these limitations a conclusion is provided together with future directions (that will mainly be drawn from the limitations and/or the delimitations of this study).

Figure 8.1. Structure of the Chapter



Source, This study (2017)

Figure 8.1 above presents the structure of the chapter. The below section will discusses each section detaillly.

8.1. Recommendations for the Study

Based on the results of this study, this section provides suggestions to assist marketers and manufacturers in improving firm performance and green corporate social investment. Following a careful analysis, it became evident that for firms to improve firm performance

and green corporate social investment there is a need to first commit to green from a corporate governance perspective and then build green marketing capability, green relationship learning and green human capital investments. Equally, the mediating role of green marketing capability, green relationship learning, and green human capital investment was also highlighted. Green corporate social investment was also found to directly impact on firm performance. Accordingly, the suggestion is that firms need to commit to green at a corporate governance level for it to have a positive relationship with firm performance. The other suggestion is that firms must consciously build green marketing capabilities- both product and process. There is a need for firms to invest in green human capital. This will enable firms to be able to get measurable benefits from their commitment to green through improved firm performance. Firms also need to improve green relationship learning. This will assist firms to get best practices and share challenges and increase industry green practice and benefits from green commitment.

Firms need to go beyond the legislative requirements of conducting business a way that is not harmful to the environment to committing to green at a corporate governance level if they want to benefit both their consumers, bottom line and the society.

A more accurate and detailed account of recommendations is provided below.

8.1.1. The Larger Context: Committing to green as a business imperative not just a legislative requirement

The following section provides specific recommendations to manufacturers to commit to green as a business imperative, not just a legal obligation. Some of the aspects may be a reiteration of the already mentioned suggestions that were discussed above.

- The stated policy stands on firm's green commitment – Manufacturers are encouraged to take policy positions on their commitment to green and articulate this writing. Written policies send a clear message to all employees and stakeholders of a firm on where it stands on green matters. This will enable the incorporation of such written policies into business operation by management and employees. This is in line with findings from this study that showed that more green marketing capability was developed when firms committed to green at a corporate governance level.

1. **Develop systems to translate company position on green to green Practices** – Business processes that ensure that green policies are translated into practice are important for firms maximising the benefits of committing to green and delivering

green value to consumers. Research points to the fact green systems enables the development of green marketing capabilities, and this relates to increased firm performance and green CSI.

2. **Develop and implement green audits –** Manufacturers must develop green audit systems and procedures to ensure regular audit of the firm's green commitment and practice. Such audits will uncover areas that require modification, areas of good practice and enhance a culture of green within the organisation. This will enable green marketing capability, green relationship learning, and green human capital investments.
3. **Build green marketing capability** – Given the strategic role of marketing capabilities in enhancing firm's performance. Green marketing capabilities have been shown in this study as positively related to firm performance and green CSI. Electronic manufacturers in South Africa need to deliberately and purposefully build green marketing capability to enhance firm performance and also complying with legislation.
4. **Enhance green relationship learning–** This study has shown a positive relationship between green relationship learning and firm performance. It would, therefore, be important for electronic manufacturers in South Africa to build green relationship learning with consumers, suppliers, industry partners and other stakeholders to enhance the learning and sharing of green knowledge. Such knowledge will enhance the firms understand of green issues, the state of green in the industry, consumers green needs and better meet them. Industry associations are a great platform to enhance green relationship learning within the industry. Consumer feedback surveys and other interactions will enable the firms to learn more about the green needs of consumers. Exchanging green knowledge with suppliers will also enable green relationship learning with suppliers to the industry and thus enhance the green performance of the firm as green relationship learning has been found by this study to be positively related to firm performance.
5. **Enhance green Human capital investments–** Human resource remains the key drivers of any strategic direction of a company. For firms to effectively realize their green commitment from a corporate governance point of view. The human resources in the firm need to be trained in implementing green manufacturing through enabling green processes and products. They need to understand what green products are, what the green vision of the firm is how the firm intends to realize it and they have to be

part of that process. The more the human resources of the firm are green conscious in their practice, the more green marketing capabilities are built within the firm. This also directly relates to firm performance and green CSI.

6. **Research and development (R&D) as at tool for enhancing green commitment** – there is lots of skepticism in the industry among practitioners on the economic benefits of green commitment. This has resulted to under investments in the green despite the legislative imperatives and consumer and societal pressure. More research on the subject will dispel some myths in the industry and enhance firm's commitment to green within the electronics manufacturers in South Africa. There are still areas of research whose findings will enable firm commitment to green within South Africa.

The next section will provide the contributions of this study and/or the managerial implications of the findings of the current study.

8.2. The Contributions and/or Ramifications of this Study

Beneficiaries of the current study include electronic manufacturers in South Africa, suppliers to the electronics industry, consumers of electronics products, communities benefiting from CSI by the electronics industry among others.Frequently, theoretical contributions and/or ramifications are a prime objective of any academic investigation, but practitioners may as well propose or develop a set of associations that are as interrelated and complex as an academically grounded theory. Within this study, manufacturers in the electronics industry can derive benefits resulting from the recommendations and findings of this study.

8.2.1. Contributions of this Study

Initially, this study set out to determine if there are any benefits to firm performance resulting from firms committing to green at a corporate governance level and building green marketing capability. Following from this purpose, I derived research questions and formulated hypotheses from the overall objective. By answering the research questions and confirming and/or rejecting some hypotheses, this study contributed to the knowledge that is drawn from preceding studies within the field of green marketing, and corporate governance. In line with the problem statement and the research gap identified, there were a few, if not any studies that have, so far, been conducted on the relationship between firm commitment to green, green marketing capability and firm performance in South Africa. Therefore, this study set out to determine performance impact of firm commitment to green in the electronics manufacturing sector in South Africa as investors and firms continue to grapple with the

question of whether or not to commit or invest in green. Consequently, this study attempted to fill the gap that exists in the extant literature, which has not been covered by studies in other context or locally. This study undoubtedly contributed to the body of research within the area of green marketing in the electronics manufacturing sector in South Africa especially as it relates to firm performance.Following from this main contribution, the study also contributed to the growing body of knowledge that supports the use of theories such as stakeholder theory, the resource based theory and the agency theory among others to understand the firm commitment to green and how it relates to green marketing capability and firm performance. Thus, this study presents the use of agency theory, resource based theory and stakeholder theory among others as useful theories to study green marketing and a firm commitment to green.

8.2.1.1. Contribution to Knowledge

This study examined the relationship between firm commitment to green, green marketing capability and firm performance for electronic manufacturers in South Africa. The study developed a unique conceptual model that was tested using the data collected from electronic manufacturers in South Africa. The unique conceptual model developed in this study (Figure 4.1) applied and integrated some previous theoretical models (Kushwaha and Sharma, 2016; Belz, 2005; Baker & Sinkula, 2005), relating firm commitment to green and green marketing capability. The model was expanded by bringing different mediating variables such as green relationship learning, and green human capital investment. The findings from the study provided a strong empirical evidence to support and verify the relationship between firm commitment to green, green marketing capability and firm performance. The predictor and mediating variables in the study were positively related to the outcome variables of firm performance and green corporate social investment for electronic manufacturers in South Africa. Understanding how firm commitment to green relates to green marketing capability and firm performance for electronic manufacturers in South Africa sheds light into an understanding firm commitment to green and how it relates to green marketing capability and firm performance in the manufacturing sector in South Africa as a whole. Given that the policies governing firm commitment to green form the government of South Africa and internationally apply to the manufacturing sector as a whole. Consumer pressure for green products is also not limited to green electronic products in South Africa but across the manufacturing sector. The model developed in this study is intended to demonstrate benefits to both academics and practitioners.

Any good research study is expected to contribute to knowledge in line with its uniqueness and add value to existing knowledge from previous studies. According to (Beech, 2005), the main contributions to academia from a study may include the following:

- New research may corroborate existing theories
- It may bring out new juxtaposition between different theories or research areas
- It may improve research methodology
- It might advance the application of techniques
- It brings new evidence or the generation of corroborated insights
- It might refute or invalidate a null-hypothesis

Following from these suggestions this study most significantly developed a new model to predict firm performance and green corporate social investment using the input variable of a firm commitment to green and mediator variables of green marketing capability, green relationship learning, and green human capital investment. In developing the theoretical model in this study, different theories and research areas were juxtaposed together. The study brought out new evidence from the data collected to support the hypothesis relating firm commitment to green and firm performance. Therefore, one may argue that this study contributes to academia in ways not previously explored in the literature.

8.2.2. Contribution to Practice

Research is expected to contribute to practice- this is an important expectation from research, especially in the domain of applied research. Contribution to practice acknowledges the need to provide relevant information to practitioners or policy makers, in a way that the investigation implications and inferences can be of assistance to them in decision making related to business or societal issues. Given that marketing research is applied research, for it to apply to practice, there is need to specify the context and classify the research robustly during the theory building phase. Secondly, marketing researchers have also focused research on the applicability of research to practice. There is need to connect theory to practice. Within this context, it is necessary to highlight how this study contributes to practice. Firstly, this study contributes to practice by helping marketers and decision makers within manufacturing companies to device appropriate policies that enable them to commit to green. The evidence supplied in this study can assist decision makers in the electronics manufacturing sector to make informed decision about committing to green, building green marketing capability and enhancing marketing and financial performance of the firm.

This study also highlights important practical implications for marketers, policy makers, and other stakeholders within the electronics manufacturing sector in South Africa. We will discuss some of these implications in the section below. These findings can enhance firm performance in electronics manufacturing companies in South Africa through enabling greater firm commitment to green, green marketing capability, green relationship learning and green human capital investment within the industry.

8.2.3. Managerial or Practical Ramifications

Any good research study should generate findings that assist in guiding critical decisions on various practices and policies. While many electronics manufacturing firms in South Africa will be very interested to continue to improve profits, some of the ways through which these can be archived are not very clear. Others have even been worried to commit to green despite a call from government and consumers because of the cost and fear of whether it makes economic sense.Findings from this study have highlighted the economic benefit of managers and owners committing to green in the electronics manufacturing sector and mediating variables of such relationship. Given that the main expectation from any good study is to provide practical implications, findings from this study shed light on practical implications for the electronics manufacturing sector, and implications for marketing research particularly in the field of green marketing and its relationship to corporate governance commitment to green and firm performance. The following section details some of the practical implications from this study.

8.2.3.1. Marketing-Related Ramifications Implications

The need and relevance for studies on the relationship between firm commitment to green, green marketing, and firm performance cannot be over emphasised. Especially with increasing pressure on firms from both consumers (Ar Ilker, 2012) and governments to go green, how this relates to green marketing and firm performance is very critical to marketing management (Kushwaha et al.; 2016). This study set out to examine the under researched area of the relationship between firm commitment to green, green marketing capability and firm performance, with a focus on the electronics manufacturing sector in South Africa. The findings from this study offer valuable practical insight to marketing practitioners as detailed below. This study resulted in some practical implications as illustrated below.

The Role of Firm Commitment to Green in Development of Green Marketing Capability– This study showed that while green marketing capability remains important to marketing performance, marketers need to continue to analyse the impact of firm commitment to green on green marketing capability. This information is very significant in informing marketers to analyse the determinants of firm commitment to green. Important factors such as firm policy with respect to green need to be further investigated. The operating processes within the organisation that enable green implementation needs to be investigated by practitioners, the monitoring, and auditing of green commitment and implementation needs to be analysed by marketers and other researchers. While it is important that marketers analyse these factors within the electronics manufacturing sector, it would be important for these factors to be researched in other sectors and firm sizes to understand if there are any differences.

Marketers should analyse demographic factors impacting on firm commitment to green– Demographic factors such as firm size, age of management, sector, whether firm is listed on stock exchange and number of years the firm has been in business are important factors to be analysed by marketers as we continue to understand the impact of firm commitment to green, green marketing capability, and firm performance. Regulation might impact different sectors differently and thus impact the levels of commitment. Different firm sizes might impact on firm commitment to green. There might be more commitment to green in larger listed company's due to reporting requirements on the JSE compared to none listed firms.

Marketers need to continue to analyse green marketing capability- the concept of marketing capability have been well researched in marketing and mostly grounded in the resource based theory of the firm. This study developed the construct of green marketing capability that needs to be further analysed in different sectors and how they relate to other areas of business and firm financial and marketing performance. This is an important construct in the study of returns on green marketing. The composition of green marketing capability including green products, green branding, and green sales, green advertising needs to be analysed. Marketers need to understand how green marketing capability relates to other business areas such as green relationship learning.

This study developed the construct of green relationship learning and green human capital investments. The found out that these constructs influence both firm performance and green marketing capability. It would be interesting for marketers to continue to unpack the role of these constructs in influencing green marketing capability and firm performance. This is particularly important given that marketing does not work in isolation but within the context of other business functions. The fact that this study generated a high error term meant that

there are still other factors that need to be introduced to our model to improve the prediction of firm performance apart from the constructs identified in this study. Marketers need to continue to identify and test such constructs as they relate to green marketing capability and firm performance.

Marketers need to continue to analyse the determinants of marketing and financial performance- While marketing and financial performance are not new constructs, how they are imparted by various factors especially firm commitment to green, green marketing capability, green relationship learning and green human capital investment needs to be analysed further by marketers. This study realised that marketing performance was the highest contributor to firm financial performance based on the constructs developed and analysed in the study. However, given that the outcome presented an error term, there is need to continue to examine other factors and even different combinations of the constructs identified in the study. This is very important especially given the fact that green marketing capability was found to be negatively related to firm financial performance in this study. The sector and sample size studied might have influenced this outcome. However, it would be important for marketers to continue to study this construct as the field of green marketing evolves, and the business case for green marketing continue to be stated.

The results from this study showed that marketers need to work with strategic leadership at board levels in companies in South Africa to ensure that firm commit to green at a corporate governance level. Ensuring that the policy is stated, that there are processes in place to implement it, that its implementation is monitored and progress in corporate governance commitment to green audited was identified as important steps in ensuring that firm actually commit to green at a corporate governance level. A firm commitment to green had both direct and indirect impact on firm performance. With the increased pressure for firms to go green both from consumers, legislation and other stakeholders, understanding what and how this commitment to green means for marketing and financial performance of the firm remains a strategic corporate imperative as it will guide the allocation of resources within the organisation and investors and other stakeholders will want to know the financial and marketing impact of these new business requirements.

This study also established green marketing capability, green relationship learning and green human capital investment were mediating constructs in the relationship between firm commitment to green, firm performance and green corporate social investment. The findings showed that the indirect route had a greater impact on firm financial performance compared

to the direct path. This means that marketers, need to ensure that firms build green marketing capability, green relationship learning and green human capital investment as these enhanced the relationship between firm commitment to green and firm performance. There is the need for more studies to continue to understand these relationships as marketers strive to improve marketing and financial outcomes within the electronic industry in South Africa.

It was also identified in this study that green corporate social investments are impacted positively by a firm commitment to green. Within this context, while green corporate social investment; impacted positively on marketing performance, its determinants need to be identified and enhanced by marketers. These determinants included green marketing capability, green relationship learning and a firm commitment to green. With the increased role of all other stakeholders, including environment, civil society, consumers and government, marketers need to ensure that the right CSI initiatives are carried as they impact on the image of the organisation, and also on the marketing and financial performance of the firm. Gone are the days when shareholders were the important primary stakeholders of the firm. Marketers need to ensure that the interests of all other interested parties, including the environment, are taken care, from a policy commitment point of view, green marketing capability accumulation and implementation to ensure green CSI in line with other business imperatives.

Finally, marketers must pay attention to the direct and indirect determinants of firm performance. While all electronics manufacturing firms in South Africa want to continue to improve performance-both marketing and financial performance, it will be important to understand the direct and indirect factors that impact on this performance. This will help marketers to promote such factors within the firm including a firm commitment to green, green marketing capability, green relationship learning with various stakeholders, consumers, producers, suppliers, industry associates and all other stakeholders. It will be important to for marketers to enhance the investment in green human capital investments within electronics manufacturing firms in South Africa as these all improves firm performance.

8.2.3.2 Policy Implications

The findings from this study have important policy makers within the corporate governance, and firm internal policy making and commitments within the electronics manufacturing sector in South Africa and the implications are discussed below.

Improving the environmental knowledge of companies – Though the South African government has been at the forefront of ratifying global conventions and policies on green and integrating those into local legislations, many businesses in South Africa still are not entirely aware of the need to commit to green. There is an urgent need for such education to take place given the reality of the need to protect the environment against pollution, degradation and the challenges of climate change globally. Boards and management of electronics manufacturing in South Africa need to be properly educated both on the legislative and empirical need to commit to green. The corporate governance regime in South Africa though it speaks of the integrated reporting and the need to protect the environment, we still operate on a "comply or explain" route. This gives companies who are not fully educated on the need to comply, to come up with explanations on why they fail to commit to green. The government can use different media such as television, radio, business newspapers and electronic media to communicate with corporate on the need to commit to green. This can be complemented with talks and other formal engagements with industry associations in the electronics manufacturing sector and other sectors.

Promote Firm Commitment to Green Through Legislations– In addition to educating companies on the need to commit to green as explained above, the South African government can go a step further to expedite the commitment to green within the electronics sector through legislation. While South Africa there is a couple of legislations such as (The Constitution of the Republic of South Africa, 1996; National Climate Change Response White Paper of, 2011;Renewable Energy Strategy (2003),National Energy Efficiency Strategy (2005), National Energy Act, 2008: Long-term Mitigation Scenario , Industrial Policy Action Plan (IPAP) (2010), National Development Plan (NDP) (2010), Green Economy Accord (2011), Long-term Adaptation of green economy (2012), Carbon Tax (implementation postponed to 2016) (2013), Medium Term Strategic Framework 2014-201) among others. There is still need for industry specific legislation that will enhance the commitment to green within the electronics manufacturing sector in South Africa. This can be complemented with strengthening the corporate governance regime about compliance to

green in South Africa. There is a need for policy makers to enhance systems to ensure that policies are adopted, committed to and implemented within corporate in the electronics manufacturing sector. This can be facilitated through the simplification of systems of adopting policies, implementation milestones, and realistic targets. This has to be complemented with proper systems of monitoring and evaluation of policy adoption and implementation.

Support from industry Associations and other related bodies– In South Africa there are various industry associates in different manufacturing sectors enhancing the development of the sector through information sharing collaborations, trade and export development, education and joint bargaining with government and other sectors. South African Electronics Export Council (SAEEC, 2016) represents a majority of the manufacturers in the electrons industry in South Africa and is an important stakeholder in promoting firm commitment to green within the sector. This sector has a local value of US$58 billion encompassing electrical engineering, electronics, information technology and telecommunications. The Department of Trade and Industry (DTI, 2016) documents that the sector contributes in the region of 12.5% to the South African gross domestic product (GDP), this is. Therefore, a key sector in the economy and its commitment to green can be fostered through its various industry associations. Industry associations have various forums to promote peer learning within the industry, share knowledge and promote green relationship learning that can also stir firm commitment to green within the industry. The more information on green is collected and shared within the industry, the more firm's commitment to green will be enhanced through the sector. Therefore, various industry associations within the electronics manufacturing sector in South Africa has a major role to play in promoting firm commitment to green within the industry.

Full support and commitment from company boards– The successful commitment to green by any firm in the electronics manufacturing sector in South Africa will largely depend on the support from the board of directors through their corporate governance practices. Legislations guiding the board in South Africa such as the new Company's Act Companies Act (No. 71 of 2008), the king codes of governance (IoDSA 2009), are there to support boards to enhance proper corporate governance. These legislations promote integrated reporting, and thus boards need to support the commitment to green within companies to ensure that these organisations will meet their legislative requirements. Boards also need to work with and educate executive management on the needs to protect all stakeholders including the environment. Board of directors can facilitate the commitment to through

ensuring that the right management is recruited, trained and retained within the organisations that understand the visions of the organisations, the legislative requirements and are willing to commit to green.

The managerial and policy implications discussed in this section, highlighted the fact that all stakeholders, managers, boards of directors of electronics manufacturing companies, government regulators, etc. must alter their strategies and regulatory standpoint to enhance firm commitment to green, green marketing capability and firm performance within the electronics manufacturing sector in South Africa. Evidence from this study supported the fact that firm commitment to green had a genera positive impact on firm performance. The evidence also showed that this impact was enhanced indirectly than directly. The mediating factors such as green relationship marketing, green human capital investments, and green marketing capability improved this relationship. Based on these theoretical and practical implications from this study all stakeholders in the electronics manufacturing industry in South Africa need to consider such implications as they strive to continue to grow the important sector and create jobs and raise returns on investment for all stakeholders.

8.3. Limitations of this Study

Characteristics that define boundaries or limit the scope of a study as described in the practical choices to include or exclude certain variables, measurement instruments, etc. through the development of the study are called limitations of a study (Wanjohi, 2012). This study attempted to answer the question on whether there is any benefit for firms in the electronics manufacturing sector to commit to green and develop green marketing capabilities. Findings from the study identified a firm commitment to green, green marketing capability, green relationship learning, green human capital investment as all contributing to firm performance and green corporate social investment. However, there were various limitations encountered in this study, and these include the following: Firstly, the study was carried out on a statistically significant sample of electronics manufacturing firms in South Africa and the findings generalised to the whole sector. Generalising findings to other sectors pose a limitation for the specificity of firm size, industry sector; growth rate type of board etc. might have impacted different businesses differently. Secondly, given the error term determined by the study, there are other factors that influence firm performance and green CSI that were not accounted for by this study thus the scope was limited to particular companies and only one sector.

Thirdly, the study was conducted in one country – South Africa, and within this country, only electronics firms were surveyed. The exclusion of other manufacturing sectors, like chemical manufacturing sector, textile, among others further limited the scope of this study. Maybe a comparative analysis of firm commitment to green, green marketing capability and its relation to green CSI and firm performance might have given greater insights on the relationship of such constructs. Therefore, future research can broaden the scope to replicate its findings across the entire manufacturing sector in South Africa. Such studies might contribute greatly to the literature on firm performance and green CSI as a result of a firm commitment to green and green marketing capability.

Fourthly, given that the respondents of this study were mainly managers and owners of electronics manufacturing sector in South Africa, the views of the employees were not heard, and thus the results might have been biased in that sense. Moreover, given the fact that the conceptual, model incorporated such constructs as a green human capital investment, green relationship learning, the explanatory power of the research model might have been raised by the incorporation of such constructs.

Current literature on the relationship between firm commitment to green and firm performance showed mixed findings. This academic puzzle was not fully resolved in this study as the study also found a negative relation between green marketing capability and firm performance. All other relationships were found to have a positive relation as hypothesised. Given that many firms in the industry still do not commit to green, the fact that green marketing capability related negatively to firm performance according to the findings from this study might continue to deter management and board's commitment to green. There is need to improve the scope and relook at the relationships between the constructs to resolve this academic puzzle.

There is need to clarify the role of boards and management in a firm commitment to green, to clarify the composition of green marketing capability. There is a need for further clarity on the concepts and constructs of green relationship learning and green human capital investment within the electronics manufacturing sector in South Africa. Many companies are still new to these constructs, and their implementation of these constructs within their firms will depend on their understanding. There will need to carry out studies on the understanding of these constructs within the manufacturing sector in South Africa. The clarity of the legislative imperatives needs to be further carried out within the industry to promote firm commitment to green. Moreover, due to financial and time constraints, the researcher for this

study was able to only gather a limited amount of responses (i.e., 212 valid responses). Though this data satisfied the requirements for using AMOS for SEM, the total number of valid responses may have fallen far below the representative threshold of all electronics manufacturing sector firms in South Africa. Despite the above limitations, this study undoubtedly contributed vastly to practice and the existing body of knowledge on the determinants of firm performance in the electronics manufacturing sector in South Africa. Specifically focused on the relationship between firm commitment to green, green marketing capability and firm performance in the electronics manufacturing sector.

8.3.1. Scope of the Study

The scope of this study was determined in line with important questions outlined by Hair et al. (2003). These include:

- Whether the study was going to be regional, national, or international

Based on the study objectives of this research and the limitations of time and resources, this study was confined to South Africa alone-national scope. Only electronics manufacturing companies operating within South Africa were surveyed. The scope was further limited by focusing on manufacturing businesses that were part of the industry association- specifically the manufacturing export council registered with the Department of Trade and Industry and the Association of small manufacturers. While this focus covered over 80 percent of the industry, some manufacturers were however excluded as they were not members of trade associations. Given that, within the manufacturing sector, only the electronics manufacturing industry was chosen in this study. Thus, the focus was again limited. This impacts on the generalisability of the findings from the study. Despite the limited scope of this study, the researcher hopes that in future, a similar study will be extended not to just to the whole manufacturing industry but to include other sectors of the economy to better understand these constructs. The scope could be further broadened to an international perspective, with a focus on Africa, BRICS countries, and other countries globally to get a further understanding of these constructs globally and in different sectors of the economy. The scope of the research could be extended to include other constructs not studied in this research, these could include things like supply chain implications of firm commitment to green, the impact of government incentives on firm commitment to green, and the role of specific policies and how these all relate to marketing capability and firm performance among others. Improving the scope of the study by increasing the sample size within the same industry or re-specifying some of the research constructs could also further improve the outcomes from the study.

8.3.2. Generalisability

There are some factors that restrict the generalisability of the findings from this study. This study defined the applicability of the research findings to other parallel contexts, with careful consideration of the degree of precision of the results emanating or derived from this study. In line with suggestions by Hair et al. (2003), the researcher had to answer the following question:

- Did the research call for making predictions or inferences about the defined target population, or only preliminary insights?

In line with the expectations that all quantitative studies which employ probability sampling (to increase the generalisability of the findings) should have generalisable results, this study also sought to generalise its findings to other related contexts. In this light, the entire manufacturing sector across South Africa might find the outcomes of this study applicable to their context to certain extends. However, there might be a need for further research to corroborate the applicability of the current findings to different manufacturing sectors. Given the limitations discussed above from this study, the research established that the research results might be less generalisable to other contexts. Similarly, it must be noted that this study offered insightful results, and as a result, it provides valuable basis or guidelines for future research endeavours relating to a related subject.

8.4. Conclusions from the Study

This study set out to examine if there was any impact on firm performance and green corporate social investment as a result of firms committing to green at the corporate governance level and developing green marketing capabilities. Grounded on the identified research gap, the purpose of the present study was to quantitatively determine the relationship between firm commitment to green, green marketing capability, green relationship learning, green human capital investment and firm performance in the electronics manufacturing sector in South Africa. It became evident that this study was one of the very few endeavours associated with corporate governance, green marketing capability and firm performance in the country. Firstly, current literature studies (for example, Kushwaha, et al.; 2016; Paswan, Guzmán, & Blankson, 2012; Chang, 2012) was examined to establish the research gap and need for the study, a conceptual model was formulated, in line with works by (Zabri, Ahmad and Wah, 2016; Lamberti and Noci, 2013; Munisi and Randøy, 2013). The electronics manufacturing companies operating in South Africa belonging to the various industry associations registered on the Department of Trade and Industry website were used as our

sampling frame. From this sampling frame, primary data was collected through the use of structured survey questionnaire from managers and owners of these companies. The variables on the questionnaires were measured on a five point Likert scale in line with previous studies (for example, Zahra and Gravis, (2000); Hult, Hurley, & Knight. (2004); Olson et al., (2005); Tang et al., (2008).The collected data was later analysed descriptively through the use of SPSS 22 statistical software. Using SEM and through AMOS statistical software, inferential statistics were analysed Chinomona (2013). Also, the results gained from the final best-fit model demonstrated that SEM is an efficacious and valuable statistical technique and can be effectively used to analyse the relationship between firm commitment to green, green marketing capability and firm performance.

According to the results, a firm commitment to green had both a direct and indirect impact on firm financial performance. The findings showed that the indirect impact of firm commitment to green on firm financial performance was more than the direct impact. Regarding the hypothesis tested, marketing performance yielded the most positive impact on firm financial performance. The entire hypotheses proposed and tested were validated to actually have a positive relationship as proposed. The study further found that 10 out of the 12-hypothesis tested did not only have a positive relationship but the relationship was also valid at a 99 percent confidence level. Only two of the hypothesis studied had an invalid relationship at a 99 percent confidence level. Furthermore, the results provided empirical evidence to validate the applicability of the research model developed in this study to explain the relationship between firm commitment to green, green marketing capability and firm performance in the electronics manufacturing sector in South Africa. Furthermore, it is expected that this study will provide a useful guide to all concerned stakeholders through its useful recommendations and implications for marketers, policy makers, and the electronics manufacturing sector among others.

8.5. Future Directions

In line with the expectations of the researcher, it was evident that this study was not immune to certain limitations, which opens up avenues for additional research on the subject. Accordingly, the identified confines of this study necessitate follow-up research studies and demands that prospective investigators need to be mindful of them to increase the generalisability of the findings and also to resolve some of the unresolved questions. In this light, forthcoming studies should address the limitations both from this study and similar studies in the field of green marketing and corporate governance commitment and test

comprehensive models explaining the links between a firm commitment to green, green marketing capability, and firm performance while at the same time addressing the limitations of the current study. For this reason, the limitations of this study provide fertile areas for future research endeavours.

Extending the present study to other manufacturing sectors in South Africa, chemical products, pharmaceuticals, among others, may heighten the likelihood of getting improved conclusions, and while using this study as a valuable guideline. In line with recommendations from Grunert and Juhl (1995), impending research studies must explore diverse samples within countries to establish whether the theories hold for all manufacturing sectors. Further, for upcoming research endeavours on firm commitment to green, green marketing capability and firm performance to be applied to other contexts, researchers must increase the scope of such studies (sample size and sectors studied) to ultimately obtain a balanced view from manufacturers in all sectors. A comparative model, between sectors, firm sizes, type of ownership, and a number of years the firm has been in business might result in important findings to improve knowledge on the subject. Therefore, additional research is indispensable, particularly when using other methods which were not used in this study, (i.e., qualitative methods) and other populations (i.e., different manufacturing sectors, different sectors of the economy) in an attempt to confirm or reject the results of the present study. Qualitative research which, especially, studies different variables that may be included in the model to better the predictive power and reduce the error term may be of great importance to upcoming research endeavours on the relationship between firm commitment to green, green marketing capability and firm performance in South Africa.

Additionally, a replication of this study (with supplementary variables like green management, green innovations, green loyalty among others) must be considered. The noted potential variables may be a noteworthy future research direction. Therefore, forthcoming research efforts must focus on other variables that mediate the impact of firm commitment to green and firm performance; this may greatly enhance the generalisability of the findings, which the researcher admitted had limitations in this study.

Given that companies in South Africa have only recently begun to commit to green in various manufacturing sectors and mostly big manufacturer with substantive resources and established boards are willing and able to commit to green at the corporate governance level. As South Africa's economic growth remains subdued and firms are very concerned about the economic impact on the firm of any strategic decision especially decisions that require firm to commit substantial resources to ensure that such decisions are followed through. Upcoming

studies in this area focus on creating more knowledge, that would result in many manufacturers becoming ‘more aware’ of the need to commit to green with evidence from studies being used to promote green commitment among companies. It would be also interesting for upcoming research efforts to shed more light on how to increase firm commitment to green in the various manufacturing sectors in South Africa. Similarly, there is, so far, little research attention on the factors that mediate the relationship between firm commitment to green and firm performance, which can be used to enhance firm commitment to green and also firm performance in the manufacturing sector. In line with the suggestions above, the researcher believes that it would be exciting for future research to put more emphasis on these aspects as showing what enables firm commitment to green, how firm commitment to green enables green marketing capability results in firm performance will improve the commitment to green among manufacturers in South Africa.

In future, longitudinal research is recommended, as it is expected that it will have more explanatory power when determining how the variables under study are linked over time. This is a vital future direction as further studies should draw a parallel between firms in different manufacturing sectors, sizes of the industry. This area appears to have limited research as some researchers tend to deliberately avoid it. Precisely, repetitive assessments of how green corporate governance commitment relates to green marketing and firm performance may perhaps provide an improved way of modelling the correlations between the variables under study. In this respect, modelling of how firm boards sees a corporate commitment to green, how these views are changing and how they relate to the development of green marketing capability will be important to understanding how these variables are related. Furthermore, prospective studies must also assess both positive and negative concerns of companies when it comes to the subject of commitment to green and development of green marketing capability.

Another noteworthy future of research direction includes reviewing the cross-national comparison of the variables under study. The data can be gathered in South Africa and other developing markets (like India, China, Russia, and Brazil) in addition to the industrialized countries (like Germany, USA, and the Great Britain). It would be interesting to find out more about the similarities and/or differences between a firm commitment to green, green marketing capability and firm performance in those settings. Such a study may elicit key factors that put forth a better model to predict the relationship between firm commitment to green, green marketing capability and firm performance globally. Such a model may be adopted to evaluate similar relationships in other settings and subject areas.

Putting everything together, though this study integrated green relationship learning firm commitment to green, and green human capital investment in analysing green marketing and firm performance, it seems as though future studies must incorporate a more multifaceted research design strategy incorporating other sectors and also integrate other notable variables in order to comprehensively assess how firm commitment to green relates to firm performance and what are the relevant mediating variables in this relationship. Therefore, the recommended future research efforts stand to enormously contribute to new and up-to-date information on the relationship between firm commitment to green and firm performance and the mediating role of green marketing capability, green relationship learning and green human capital investment and also provide fresh insights to the extant body of knowledge, within the marketing discipline.

8.6 Conclusion of Chapter

The chapter presented the recommendations, implications, conclusions, limitations and future direction for the study. The first section presented the recommendations from the findings of the study. This was followed by an analysis of the implications together with the contributions of the research to academia and practice. Given that no study is immune from the inevitable constraints, this study also outlined some of the fundamental limitations relating to it. Following the presentation of these limitations a conclusion was provided together with future directions (that were mainly drawn from the limitations and/or the delimitations of this study). Finally, a research timeline was also included, and it demonstrates how the research activities were undertaken, from the finalising the research proposal until the successful completion of this study.

REFERENCES

1. Aaker, D, A. Kumar, V. and Day, G, S. (2004). *Marketing research*.8th ed. USA: John Wiley & Sons.
2. Aaker, D. Kumar, V. Day, G. and Leone, R. (2010). *Marketing Research*, Tenth edition, John Wiley & Sons.
3. Akroush, M, N. and Al-Mohammad, S, M. (2010). The effect of marketing knowledge management on organisational performance: An empirical investigation of the telecommunications organisations in Jordan. *International Journal of Emerging Markets*, **5**(1), 38-77.
4. Aaker, J.L., et al., (2000). Non-target markets and viewer distinctiveness: The impact of target marketing on advertising attitudes,*Journal of Consumer Psychology*, **9**(3): 127-140.
5. Anayo D. Nkamnebe, (2011). Sustainability marketing in the emerging markets: imperatives, challenges, and agenda setting, *International Journal of Emerging Markets*, **6**(3): 217 – 232.
6. Arild Aspelund, Tage Koed Madsen, and Oystein Moen, (2007). "A review of the foundation, international marketing strategies, and performance of international new ventures", *European Journal of Marketing*, **41** (11/12): 1423 – 1448.
7. Archana Mahamuni A. and Tambe M., (2014). Green Marketing in Automobile andAncillary Industry: Issues and Implications. *Journal of Commerce & Management Thought* **5**(3): 363-377
8. Arikan E. and Gunner S (2013). The Impact of Corporate Social Responsibility, Service Quality and Customer- Company Identification on Customers. *Procedia - Social and Behavioral Sciences,* **99**: 304 – 313
9. Afthanorhan, A. & Ahmad, S. (2013). Modelling a high reliability and validity by using confirmatory factor analysis on five latent construct: Volunteerism program. *Research Journal Advanced Engineer and Scientific*, 1-7.

10. Ajzen, I. & Fishbein, F. (2008). Scaling and testing multiplicative combinations in the expectancy-value model of attitudes. *Journal of Applied Social Psychology*, **38**:2222-2247.
11. A. Oosthuizen & S. Lahner (2016). Board diversity and sustainability performance. *Southern African Business Review,* **20**:111-132.
12. Akguna A., Keskina H, Byrneb J., and Arena S (2007). Emotional and learning capability and their impact on product innovativeness and firm performance. *Technovation,* **27**: 501–513.
13. Abhijeet K. Digalwar Ashok R. Tagalpallewar Vivek K. Sunnapwar, (2013)."Green manufacturing performance measures: an empirical investigation from Indian manufacturing industries", *Measuring Business Excellence,* **17** (4): 59 – 75.
14. Akgün A. E and Kirçovali S. Y (2015). Organisational Wisdom and Its Impact on Firm Innovation and Performance**,** *Doğuş Üniversitesi Dergisi,* **16** (2): 193-202.
15. Amores-Salvad J., Martín-de Castro G., and Navas-Lopez (2014). Green Corporate Image: Moderating the Connection Between Environmental Product Innovation and Firm Performance. *Journal of Cleaner Production,* **83**: 356-365.
16. Anderson, J. C. & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin,* **103**:411–423.
17. Arbuckle, J. L. (2017). *IBM, SPSS, Amos 24 user's guide*. Chicago: Amos Development Corporation.
18. Ates, A. (2008). Fundamental concepts in management research and ensuring research quality: focusing on case study method, *8th Annual European Academy of Management (EURAM) Conference,* Slovenia, 1-34.
19. Arpita Khare (2015). Antecedents to green buying behaviour: a study on consumers in an emerging economy, *Marketing Intelligence & Planning*.**33**(3): 309-329.
20. A Grobler, Ml Bezuidenhout and A. Hyra (2014). Governance and HR: the development of a framework for South African Organisations.
21. B. Marx and V. van Dyk (2011). The Company as A Responsible Corporate Citizen: An Analysis of The Board's Commitment to Sustainability, *Journal of Economic and Financial Sciences,* **4**(1): 81-98.
22. BAF Sukhdeo and CA Arnolds (2016). Pursuing triple bottom line sustainability through conscious corporate governance. *South African Journal of Labour Relations,* **40** (1):83-107.

23. Bagher, A, N. Ali, S, F. andAli, K. (2014). The Effect of Marketing Tactical Capabilities on the Financial Performance of the Firms: Meta-Analysis Approach: *Iranian Journal of Management Studies (IJMS),***8**(1): 73-96.
24. Bernard, B. and Koerte, P. (2007). Strategic Responses to Multiple Dimension of Low cost Country Competition. Frankfurt: *European Management Publication*.
25. Bolton, R, N. (2004). Linking marketing to financial performance and firm value. *Journal of Marketing*, **68**: 73-75.
26. Bryman, A. and Bell, E. (2007). *Business Research Methods,* Oxford University Press.
27. Buelens, M. Broeck, van den, H. and Vanderheyden, K. (2006). *Organisational Behavior,* 3rd edition, McGraw Hill.
28. Buzzel, R, D. and Gale, T, B. (1987). *The PIMS Principles*: Linking Strategy to Performance, Free Press, New York.
29. Bacon, D. (1997). Using Amos for structural equation modeling in market research. *Journal of Market Research,* 1-18.
30. Bacon, D. R., Sauer, P. L. & Young, M. (1995), Composite reliability in structural equation modeling. *Educational and psychological measurement*, **55**(3):394-406.
31. Bagozzi, R. P. & Yi, (1988). On the evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, **16**:74-94.
32. Bellenger, D. N. & Greenberg, B. A. (1978). *Marketing research: A management information approach.* Homewood, IL: Richard D. Irwin.
33. Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin,***107**:238–246.
34. Blaxter L., Hughes C. & Tight M. (2001). *How to research* (2nd Edition.). 153-191. Buckingham: Open University Press.
35. Blumberg, B., Cooper, D. C. & Schindler, P. S. (2008). *Business research methods* (7th ed.). London, UK: McGraw-Hill.
36. Banerjee, Gulas, and Iyer (1995). Shades of green: A multidimensional analysis of environmental advertising, *Journal of Advertising*, **24** (2): 21-32.
37. Bollen, K. A. & Long, J. S. (1993). *Testingstructural equation models*. Newbury Park, CA: Sage Publications.
38. Bollen, K. A. & Stine, R. A. (1993). Bootstrapping goodness-of-fit measures in structural equation models. In Bollen & Long, (1993). *Testing structural equation models*. 111–135.

39. Bollen, K.A. (1989). *Structural equations with latent variables.* New York: John Wiley & Sons, Inc.
40. Bohas and Poussing (2016), An empirical exploration of the role of strategic and responsive corporate social responsibility in the adoption of different Green IT strategies. Journal of Cleaner Production **122**: 240-251.
41. Boone, H. N. & Boone, D. A. (2012). Analysing Likert data. *Journal of Extension*, 50(2). Available from: http://www/joe/2012april/tt2/php.
42. Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In Bollen, K. A. & Long, J. S. (Editors.). *Testing structural equation models*, 136–61. Newbury Park, CA: Sage Publications.
43. Bryman, A. (1984). The debate about quantitative and qualitative research: A question of method or epistemology? *The British Journal of Sociology*, **35**:75-92.
44. Bryman, A. (2004). *Social research methods*, (2nd Edition.). New York: Oxford University Press Inc.
45. Bryman, J. F. Jr., Babin, B., Money, A. H. & Samouel, P. (2003*). Essential of business research methods*. United States of America: John Wiley & Sons Publishers.
46. Byrne, B. M. (2001). *Structural equation modeling with AMOS: basic concepts, applications and programming*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
47. Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming* (2nd Edition.). Mahwah, New Jersey: Lawrence Erlbaum Associates.
48. Byrne, B. M. (2012a). Choosing structural equation modelling computer software: Snapshots of LISREL, EQS, Amos, and Mplus. In Hoyle, R. H. (Editor.). *Handbook of Structural Equation Modelling* (307-324). New York: Guilford Press.
49. Baranchi Narayan (2013). Green Marketing- Demonstrating a Strong Commitment to the Environment. *TSM Business Review,***1** (1): 26-35.
50. Chang and Fong (2010), Green product quality, green corporate image, green customer satisfaction, and green customer loyalty, *African Journal of Business Management,*
51. **4**(13): 2836-2844.
52. Cano, C. R., Carrillat, F,A. and Jaramillo, F. (2004). A meta-analysis of the relationship between market orientation and business performance: evidence from five continents. *International journal of Research in Marketing,* **21**(3): 179-200.
53. Chen Y., (2008). The Positive Effect of Green Intellectual Capital on Competitive Advantages of Firms.*Journal of Business Ethics*, **77** (3): 271-286.

54. Chiappetta & Lopes de Sousa (2015). Green Human Resource Management and Green Supply Chain Management: linking two emerging agendas. *Journal of Cleaner Production* **112** (1):1824-1833.
55. Creswell, J, W. (2009). *Research design*: Qualitative and Mixed methods Approaches. 3rd ed. Los Angeles: Sage .
56. Clare D'Souza Mehdi Taghian Peter Lamb Roman Peretiatkos, (2006)."Green products and corporate strategy: an empirical investigation", *Society and Business Review,* **1** (2): 144 – 157.
57. Castellini A, Mauracher C, Procidano I, and Sacchi G (2014). Italian market of organic wine: A survey on production system characteristics and marketing strategies**.** *Wine Economics and Policy,* **3**: 71–80.
58. Corley, K.G. and Gioia, D.A. (2011). 'Building theory about theory building: What constitutes a theoretical contribution?' *Academy of Management Review,* **36**(1): 12–32.
59. Craig R. Carter, (2005). "Purchasing social responsibility and firm performance", International *Journal of Physical Distribution & Logistics Management*, **35** (3): 177 – 194.
60. Cheung H., Kong H. and Kong H (2010), "Impacts of Different Learning Types in Hong Kong's ICT Industry". *The International Journal of Technology, Knowledge and Society* **6**, (2): 67-92
61. Claassen & Düwell (2013). The Foundations of Capability Theory: Comparing
62. Chabrak N., (2015). *Promoting corporate social responsibility and sustainability: a model of integrity*, Society and Business Review, **10**(3): 280 – 305.
63. Carriger, M. S. (2000). What is research design? *Journal of Research Design*, **1**:1-8.
64. Chatelin, Y. M., Vinzi, V. E. & Tenenhaus, M. (2002). State-of-Art of PLS Path Modeling through the Available Software,1-31, Available from: http://www.hec.fr/var/fre/storage/ original/application/d713bfa13eff075210485ada1a2f7c48.pdf.
65. Chin, W. W. (1998). Issues and opinion on structural equation modeling. *MIS Quarterly*, **22**(1):7-16.
66. Chinnici, G., D'Amico, M. & Pecorino, B. (2002). A multivariate statistical analysis on the consumers of organic products. *British Food Journal*, **104**(3/5):187-99.

67. Chinomona, R. & Pretorius, M. (2011). SME manufacturers' cooperation and dependence on major dealers' expert power in distribution channels, *South African Journal of Economics and Management Sciences,* **12**(2):170-186.
68. Chinomona, R. (2012). Research in Practice: the Start! The Da Vinci Institute Presentation, *Unpublished Slides*, 1-70.
69. Chinomona, R. (2014). Structural equation modeling in management sciences research: Postgraduate and staff development programme facilitation, *Unpublished Slides*, 1-53.
70. Clare D'Souza, Mehdi Taghian, Peter Lamb, and Roman Peretiatkos, (2006)."Green products and corporate strategy: an empirical investigation", *Society and Business Review*, **1** (2): 144 – 157.
71. Chiappetta Jabbour, Jugend, de Sousa Jabbour, Gunasekaran, and Hengky Latan (2015). Green product development and performance of Brazilian firms: measuring the role of human and technical aspects, *Journal of Cleaner Production*, **87:** 442-451.
72. Chen Y., (2008), The Positive Effect of Green Intellectual Capital on Competitive Advantages of Firms. *Journal of Business Ethics*, **77** (3): 271-286.
73. Chen and Chang, (2011). Utilize structural equation modelling (SEM) to explore the influence of corporate environmental ethics: the mediation effect of green human capital, *Qual Quant*, **47:**79–95.
74. Chiappetta Jabbour and de Sousa Jabbour (2016). Green Human Resource Management and Green Supply Chain Management: linking two emerging agendas. *Journal of Cleaner Production*, **112**: 1824-1833.
75. Chou, C-P., Bentler, P. M, & Pentz, M. A. (1998). Comparison of two statistical approaches to study growth curves: The multilevel model and the latent curve analysis. *Journal of Structural Equation Modeling*, **5**:247-266.
76. Churchill, G. A & Iacobucci, D. (2004). *Marketing research: Methodological foundations.* London: South-Western, Div of Thomson.
77. Christesen L.J., Peirce E. And Hartman L.P. (2007). Ethics, CSR and Sustainability Education in the *Financial Times* Top 50 Global Business Schools: Baseline Data and Future Research Directions, *Journal of Business Ethics***73** (4): 347-368.
78. Cohen, L., Manion, L. & Morrison, K. (2007). *Research methods in education* (6th ed.). New York: Taylor & Francis e-Library

79. Collins, K. M. T., Onwuegbuzie, A. J. & Jiao, Q. G. (2007). A mixed methods investigation of mixed methods sampling designs in social and health science research. *Journal of Mixed Methods Research*, **1**:267-294.
80. Conrad, C. F. & Serlin, R. C. (eds.) (2006). *The SAGE Handbook for research in education: Engaging ideas and enriching inquiry*. California: Sage Publications.
81. Converse, J. & Presser, S. (1986). *Survey questions: handcrafting the standardized questionnaire.* Newbury Park, California: Sage University Press.
82. Cooper, C. R. & Schindler, P. S. (2008). *Business research methods* (10th Edition.). Boston: McGraw-Hill.
83. COP17/CMP7, (2014). Durban climate change conference - November/December 2011, Available from: http://unfccc.int/meetings/durban_nov_2011/meeting/6245.php.
84. Cortina, J. (1993). What is coefficient alpha: An examination of theory and applications. *Journal of Applied Psychology*, 78:98-104.
85. Cox, K. K. & Enis, B. M. (1972). *The marketing research process*. Calirfonia. Pacific Palisades.
86. Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches*. Thousand Oaks: Sage Publications.
87. Creswell, J. W. (2003). Research design: Qualitative, quantitative and mixed methods approaches (2nd ed.). Thousand Oaks, New Delhi: SAGE Publications
88. Cronbach, L. J. (1951).“Coefficient alpha and the internal structure of tests.” *Psychometrika***22**(3):297-334.
89. Cronbach, L. J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, **64**:391-418.
90. Clulow V., (2005). Futures dilemmas for marketers: can stakeholder analysis add value?,*European Journal Of Marketing*, **39** (9/10) : 978 – 997.
91. Daily C.M., Daltin D. R., And Rajagopalan N (2003). Governance Through Ownership: Centuries of Practice, Decades of Research, *Journal of The Academy of Management*, **46** (2): 151-158.
92. Donaldson and Davis, (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns, Australian *Journal of Management*, **16** (1): 49-65.

93. Dempster, A. P., Laird, N. M. & Rubin, D. B. (1977). Maximum likelihood estimation from incomplete data via the EM algorithm (with discussion). *Journal of the Royal Statistical Society*, **39**:1-38.
94. Denzin, N. K., & LIncoln, Y. S. (2000). *Handbook of Qualitative Research* (2nd Edition.). Thousand Oaks: Sage Publications Inc.
95. Dillon, W. & Goldstein, M. (1984). *Multivariate analysis: Methods and applications*. New York: Wiley Publishers.
96. Denis D.K, (2001). Twenty-five years of corporate governance research and counting. *Review of Financial Economics* **10** *(3)*: 191–212.
97. Delery J. E and Doty H. D (1996). Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency, and Configurational Performance Predictions, *The Academy of Management Journal*, **39**(4): 802-835.
98. Dwyer R.J., (2009*). Keen to be green organisations: a focused rules approach to accountability*, Management Decision, **47**(7): 1200 – 1216.
99. Doole, I. and Lowe, R. (2003). *International Marketing Strategy*, 3rd ed., International Thomson Business Press, London.
100. De-Shan and Shi-Hua, (2008). Study on Strategic Management of Green Marketing. *2008 International Seminar on Business and Information Management.* ***IEEE Computer Society.***
101. Economic Commission for Africa. (2011). Economic Report on Africa 2011. Governing development in Africa - the role of the state in economic transformation. *United Nations Economic Commission for Africa. African Union. Addis Ababa: Ethiopia.*
102. Eagly, A. H. & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth: Harcourt Brace Jovanovich.
103. Easterby-Smith, M., Thorpe, R. & Lowe, A. (2004) *Management research: An introduction*. London: Sage Publications.
104. Elena Fraj Eva Martínez Jorge Matute, (2013)."Green marketing in B2B organisations: an empirical analysis from the natural-resource-based view of the firm", *Journal of Business & Industrial Marketing*, **28** (5): 396 – 410.
105. E. Swanepoel, J.W. Strydom & C. Nieuwenhuizen (2010). An empirical analysis of a private company's corporate social investment in SMME development in South Africa. *Southern African Business Review,* **14** (1): 58-78.

106. Elena Fraj Eva and Martínez Jorge Matute, (2013)."Green marketing in B2B Organisations: An Empirical Analysis from the Natural-Resource-Based.
107. Enders CK. 2002. Applying the Bollen-Stine bootstrap for goodness-of-fit measures to structural equation models with missing data. *Multivariate Behavioral Research*, **37**:359-377.
108. Eng L.L. and Mak Y. T. (2003). Corporate governance and voluntary disclosure *Journal of Accounting and Public Policy*, **22**: 325–345.
109. Eriksson, P. & Kovalainen, A. (2008). *Qualitative methods in business research*. London: Sage Publications.
110. Feng F., (2010*). "Green" company or "green" consumers: a Kantian retrospective*, International Journal of Social Economics, **37**(10): 779 – 783.
111. Fan, X. (2003). Power of latent growth modeling for detecting group differences in linear growth trajectory parameters, Journal of Structural Equation Modeling, 10:380–400.
112. Farrell, A. M. (2009). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu. *Journal of Marketing and Retailing Research*, 1-13.
113. Fahy, J. Moloney, S. and McAleer, S. (2005). Marketing in the 21st century: A Study of Marketing Practice and Performance in Ireland. *UL/IMI Centre for Marketing Studies.*
114. Fraj-Andre´s, Martinez-Salinas and Matute-Vallejo (2009). A Multidimensional Approach to the Influence of Environmental Marketing and Orientation on the Firm's Organisational Performance. *Journal of Business Ethics,* **88**: 263–286.
115. Field, A. (2006). Reliability analysis: Research methods II, Available from: http://www. statisticshell.com/docs/reliability.pdf.
116. Finkbeiner, C. (1979). Estimation for the multiple factor model when data are missing. *Psychometrika*, **44**:409-420.
117. Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1):39-50.
118. Frerichs, R. R. (2004). Equal probability of selection, Available from: http://www.ph.ucla. edu/epi/rapidsurveys/RScourse/chap4rapid_2004.pdf.
119. Fricker, R. (2011). Target Populations, Sampling Frames, and Coverage Error, Lecture Slides, 1-22, Available from:

http://faculty.nps.edu/rdfricke/MCOTEA_Docs/Lecture%209%20%20Target%20Populations,%20Sampling%20Frames,%20and%20Coverage%20Error.pdf

120. Fongsuwan, W. (1999). A comparative study of international marketing strategies between Japanese, American and European multinational companies: *Thailand 1997, CAS Discussion papers* No .25, Centre for ASEAN Studies: 1-19.
121. Fraj E., Eva Martı´nez E., and Matute J (2013). Green marketing in B2B organisations: an empirical analysis from the natural-resource-based view of the firm. *Journal of Business & Industrial Marketing,* **28** (5): 396–410.
122. Frynas J.G., and Yamahaki C (2016). Corporate Social Responsibility: Review and roadmap of theoretical perspectives. *Business Ethics: A European Review,* **25** (3): 258-285.
123. Fulong-Daniel Feng, (2010). "Green" company or "green" consumers: a Kantian retrospective", *International Journal of Social Economics*, **37** (10): 779 – 783.
124. Gama, A, P, D. (2011). An expanded model of marketing performance.*Marketing Intelligence &Planning*, **29**(7): 643 – 661.
125. Gatignon, H. and Robertson, T, S. (1991). *Innovative decision process*, in Robertson, T.S. and Kassarjian, H, H. (Eds), Handbook of Consumer Behavior, Prentice-Hall, Englewood Cliffs, NJ,:316-48.
126. Gali N., et al., (2016). The corporate governance and social responsibility nexus in the Lebanese banking industry, Corporate Governance: *The International Journal of Business in Society*, **16** (3).
127. Galia F., & Ingham M., (2015). "Incentives for green innovations in French manufacturing firms". *International Journal of Technology Management & Sustainable Development*. **14**(1)
128. Gali N., Hajjar D., & Jamali I., (2016). The corporate governance and social responsibility nexus in the Lebanese banking industry, Corporate Governance: *The International Journal of Business in Society,* **16** (I) 3
129. Garzella S. and Fiorentino R., (2014). An integrated framework to support the process of green management adoption. *Business Process Management Journal***20** (1): 68-89.
130. Gottesman, A. A., and M. R. Morey (2010). "CEO Educational Background and Firm Financial Performance", *Journal of Applied Finance*, 2: 70-82.
131. Ghouri, A, M. Khan, N.R. Malik, A.M. and Razzaq, A. (2011). Marketing practices and their effects on firm's performance: findings from small and medium sized catering

and restaurants in Karachi, *International Journal of Business Management*, **6**(5): 251–259.

132. Grant, R, M. (2010). *Contemporary strategy analysis* (7th ed.) West Sussex, UK: John Wiley & Sons Ltd.
133. Grewal, R. and Tansihaj, P. (2001). Building organisational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, **65**(2): 67–80.
134. Grewal, R. and Tansihaj, P. (2001). Building organisational capabilities for managing economic crisis: The role of market orientation and strategic flexibility. *Journal of Marketing*, **65**(2): 67–80.
135. Griffith, D. A. Yalcinkaya, G. and Calantone, R, J. (2010). Do marketing capabilities consistently mediate effects of firm intangible capital on performance across institutional environments? *Journal of World Business*, **45**: 217–227.
136. Ghauri, P. & Gronhaug, K. (2002). *Research methods in business studies: A practical guide*. London: Prentice Hall.
137. Goffin, R.D. (2007). Assessing the adequacy of structural equation models: Golden rules and editorial policies. *Journal of Personality and Individual Differences,* **42**(5):831-839.
138. Grafstrom, A. (2010). Entropy of unequal probability sampling designs. *Journal ofStatistical Methodology*, 7:84-97.
139. Green, S, Lissitz R, Mulaik S. (1977). Limitations of Coefficient alpha as an index of test unidimensionlity. *Journal of Educational Psychological Measurement,* **37**:827-838.
140. Green, S. B., Thompson, M. S. & Babyak, M. A. (1998). A Monte Carlo investigation of methods for controlling type I errors with specification searches structural equation modeling. *Journal of Multivariate Behavioral Research*, **33**:365–383.
141. Grewal, R., Cote, J. A. & Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: Implications for theory testing. *Journal of Marketing Science,* **23**(4):519–529.
142. G.J. Rossouw (2005). The philosophical premises of the second King Report on corporate governance. *Koers,* **70**(4):727-744.
143. Goerzen A. (2007). Alliance Networks and Firm Performance: The Impact of Repeated Partnerships. *Strategic Management Journal*, **28** (5): 487-509.

144. Hancock, M, R. (2000). Cultural Differences Between Construction Professionals in Denmark and United Kingdom, SBI Report No: 324, *Danish Building Research Institute, Hoersholm.*

145. Holden, M, T. and Lynch, P. (2004). Choosing the appropriate methodology: Understanding research philosophy. *The Marketing Review,* **4**(4): 397-409.

146. Homburg, C. and Pflesser, C. (2000). A Multiple-Layer Model of Market-Oriented Organisational Culture: Measurement Issues and Performance Outcomes, *Journal of Marketing Research*, **37**(4): 449-462.

147. Hooley, G. Greenley, G. Fahy, J. and Cadogan, J. (2001). Market-focused Resources, Competitive Positioning and Firm Performance. *Journal of Marketing Management*. **17** (5-6): 503-520.

148. House, R. J. Hanges, P. J. Javidan, M. Dorfman, P. W. and Gupta, V. (2004). Culture, leadership, and organisations. Sage.In international marketing studies. *Journal of Business Research*, **60**(3): 277-284.

149. HaniffaR.M., And CookeT.E (2005**).** The Impact of Culture and Governance on Corporate Social Reporting *Journal of Accounting and Public Policy* **24** (5): 391–430

150. Haddock-Millar J., Sanyal C. & Müller-Camen M. (2015). Green human resource management: a comparative qualitative case study of a United States multinational corporation, *The International Journal of Human Resource Management,* DOI:**10**.

151. Hardeep Chahal, Ramesh Dangwal and Swati Raina, (2014). "Conceptualisation, Development and Validation of Green Marketing Orientation (GMO) Of SMEs in India", Journal of Global Responsibility, **5** (2): 312 – 337.

152. HE Scholtz (2014). Assessment of the corporate governance compliance in the annual reports of companies listed on the Alternative Exchange (AltX). *Southern African Journal of Accountability and Auditing Research*, **16**: 1-14.

153. Hair Jr J. F., Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. (2006). *Multivariate data analysis* (6th Edition.).Upper Saddle River, New Jersey: Pearson-Prentice Hall.

154. Hair, J. F. Jr., Anderson, R. E., Tatham, R. L. & Black, W. C. (1998). *Multivariate data analysis* (5th Edition.). Upper Saddle River, New Jersey: Prentice Hall.

155. Hair, J. F., Bush, R. P. & Ortinau, D. J. (2003). *Marketing research: Within a changing information environment* (2nd Edition.).London: McGraw-Hill.

156. Hair, J. K., Anderson, R. E., Tatham, R. L. & Black, W. C. (2001). *Multivariate data analysis* (5th Edition.). Upper Saddle River, New Jersey. Prentice Hall.
157. Hair, J., Money, A., Samouel, P. & Page, M. (2007). *Research methods for business*. New Jersey: John Wiley & Sons, Inc.
158. Hathaway, R. S. (1995). Assumptions underlying quantitative and qualitative research: implications for institutional research, *Research in Higher Education,* **36**(5):535-562.
159. Henson, R. K. (2001). Understanding internal consistency reliability estimates: A conceptual primer on coefficient alpha. *Measurement and Evaluation in Counseling and Development,* **34**(3):177-189.
160. Han X., Hansen E., Panwar R., Hamner R. and Orozco N (2013). Connecting market orientation, learning orientation and corporate social responsibility implementation: is innovativeness a mediator? *Scandinavian Journal of Forest Research,* **28** (8): 784-796.
161. Hardeep Chahal Ramesh Dangwal Swati Raina, (2014)."Conceptualisation, development and validation of green marketing orientation (GMO) of SMEs in India", *Journal of Global Responsibility*, **5** (2): 312 – 337.
162. Höver, H (2005). Corporate Governance? Ethical evaluation of the Second King Report in the light of Peter Ulrich's Integrative Economic Ethics**.** *Deel,* **46** (1 & 2): 114-128.
163. HE Scholtz (2014). Assessment of the corporate governance compliance in the annual reports of companies listed on the Alternative Exchange (AltX), *Southern African Journal of Accountability and Auditing Research*, (**16**): 1-14.
164. Hoyle, R. H. (1995). Structural equation modeling: Concepts, issues, and applications. Thousand Oaks, CA: Sage Publications, Inc.
165. Hasan Z and Ali N. A (2015). The impact of green marketing strategy on the firm's performance in Malaysia. *Procedia-Social and Behavioral Sciences,* **172**: 463 – 470.
166. Holden, M. T. & Lynch, P. (2004) Choosing the appropriate methodology: Understanding research philosophy (RIKON Group). *The Marketing Review,* 4:397-409.
167. Hox, J. J. & Bechger, T. M. (1998). An introduction to structural equation modelling, *Family Science Review,* **11**:354-373.
168. Hox, J. J. & Maas, C. J. M. (2001). The accuracy of multilevel structural equation modeling with pseudobalanced groups and small samples. *Journal of Structural Equation Modeling*, **8**:157-174.

169. Hoyle, R. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage Publications.

170. Hu, L. & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Journal of Structural Equation Modeling*, **6**:1-55.

171. Hughes, J. & Sharrock, W. (1997). The philosophy of social research (3rd Edition.). Essex: Pearson Publishers.

172. Hulland, J. (1999). Use of Partial Least Squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, **20**(2):195–204.

173. Hunt, S. D. (1993). Objectiving in marketing theory and research. *Journal of Marketing*, **57**(2):1-23.

174. Hussey, J. & Hussey, R. (1997). *Business research. A practical guide for undergraduate and postgraduate students*. Palgrave: Basingstoke.

175. Huxham, C. & Vangen, S. (2003). Researching organisational practice through action research, *Organisation Research Methods*, **63**:383-403.

176. Huxham, C. (2003). Action research as a methodology for theory development. *Policy and politics*, **312**:239-248.

177. Ibtehal Orabi Awad and Ibrahim Raslan Hegazy (2016). Reviewing the Implications of Corporate Governance, Corporate Social Responsibility on Corporate Failure in the Literature: Developing Countries. *Journal of Emerging Trends in Economics and Management Sciences***7**(1): 22-30.

178. Jandagh, G. & Matin, H. Z. (2010). Application of qualitative research in management: Why, when and how. *Iranian Journal of Management Studies*, **3**(3):59-74

179. Jöreskog, K. & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language.* Chicago, IL: Scientific Software International Inc.

180. Jöreskog, K. G. (2000). *Latent Variable Scores and Their Uses*. LIncolnwood, IL: Scientific Software International.

181. Jörg, H., Ringleand, C. M. & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing,***20**:277–319.

182. Judd, C. M., McClelland, G. H & Culhane, S. E. (1995). Data analysis: Continuing issues in the everyday analysis of psychological data. *Annual Review of Psychology*, **46**:433–465.

183. James H. Davis, F. David Schoorman and Lex Donaldson (1997). Toward a Stewardship Theory of Management, The *Academy of Management Review*, **22,** (1): 20-47.

184. Jackson S., et al., (2011). State-of-the-Art and Future Directions for Green Human Resource Management: Introduction to the Special Issue Zeitschrift für Personalforschung / German *Journal of Research in Human Resource Management,***25** (2): 99-116.

185. Jaime Rivera-Camino, (2007). "Re-evaluating green marketing strategy: a stakeholder perspective", *European Journal of Marketing*, **41** (11/12): 1328 – 1358.

186. Jian-Zhong X, Jun Land Dan L, (2010*) Research on Enterprises' Green Marketing Competence Promotion Based on the PSR Model*. International Conference on Management Science & Engineering (17th) November 24-26.

187. Jackson S. E., Renwick W.S., Jabbour C. and Muller-Camen M (2011). State-of-the-Art and Future Directions for Green Human Resource Management: Introduction to the Special Issue-*Zeitschrift für Personalforschung / German Journal of Research in Human Resource Management,* Jahrg. 25, H. 2, Green Human Resource Management (2011): 99-116.

188. Jaime Rivera-Camino, (2007)."Re-evaluating green marketing strategy: a stakeholder perspective", *European Journal of Marketing*, **41** (11/12): 1328 – 1358.

189. Jabbour C. J, Jugend D, Sousa Jabbour A, Gunasekaran A, and Latan A. (2015). Green product development and performance of Brazilian firms: measuring the role of human and technical aspects. *Journal of Cleaner Production,* **87**: 442- 451.

190. Joh S. W (2003). Corporate Governance and Firm Profitability: Evidence from Korea Before the Economic Crisis, *Journal of Financial Economics***68** (2): 287-322.

191. Kammerer, D. (2009). The Effects of Customer Benefit and Regulation on Environmental Product Innovation. Empirical Evidence from Appliance Manufacturers in Germany. *Ecological Economics,* **68**: 2285-2295.

192. Kalafatis, S., Pollard, M., East, R. & Tsogas, M. (1999). Green marketing and Ajzen's Theory of Planned Behaviour: A cross-market examination. *Journal of Consumer Marketing*, **16**(5):441-460.

193. Kalof, L., Dan, A. & Dietz, T. (2008). *Essentials of social research*. New York: McGraw-Hill.

194. Kiessling, Isaksson and Yasar (2016). Market Orientation and CSR: Performance Implications. *Journal of Business Ethics***137**:269–284.

195. Kangyin Lu Jinxia Zhu Haijun Bao, (2015)."High-performance human resource management and firm performance", *Industrial Management & Data Systems*, **115** (2): 353 – 382.

196. K Barac and T. Molio (2010). Assessment of corporate governance reporting in the annual reports of South African listed companies**.** *Southern African Journal of Accountability and Auditing Research,* **10**: 19-31.

197. Kushwaha G. S and Sharma N. K (2016). Green initiatives: a step towards sustainable development and firm's performance in the automobile industry. *Journal of Cleaner Production***121**: 116-129.

198. Ko E, Kwang Y.K and Kim E.Y, (2012). Green marketing' functions in building corporate image in the retail setting. *Journal of Business Research,* **66**: 1709–1715.

199. K Barac and T Molio (2010). Assessment of corporate governance reporting in the annual reports of South African listed companies *Southern African Journal of Accountability and Auditing Research,* **10**: 19-31.

200. Khine, M. S., Ping, L. C. & Cunningham, D. (Editors.) (2013). *Application of Structural Equation Modeling in Educational Research and Practice: Contemporary Approaches to Research i n Learning Innovations*. Netherlands: Sense Publishers.

201. Kline P. (2000). *Handbook of psychological testing* (2nd Edition).Routledge: London.

202. Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford.

203. Kline, R. B. (2005). *Principles and practice of structural equation modelling* (2nd Edition.). New York: Guilford Press.

204. Kline, R. B. (2011). *Principles and practice of structural equation modelling* (3rd Edition.). New York: Guilford Press.

205. Klopper, H. (2008). The Qualitative Research Proposal, *Journal of Nursing*, 5-12.

206. Kothari, C. R. (2004). *Research methodology methods and techniques*. New Delhi: New Age International Publishers.

207. Kohli, A, K. and Jaworski, B. (1990). Market Orientation: The Construct, Research Propositions and Managerial Implications, *Journal of Marketing*, **54**: 1-18.

208. Kotler, P. (2002). *Marketing Management*, (11th ed.). New Delhi: Prentice Hall, 75 – 78.Kriese U., (2009). *Business and marketing strategies in responsible property investment*, Journal of Property Investment & Finance, **27** (5): 447 – 469.

209. Kushwaha G. S, and Sharma N. K. (2016), Green Initiatives: A Step Towards Sustainable Development and Firm's Performance in the Automobile Industry. *Journal of Cleaner Production*, **121**: 116 – 129.

210. Lance, C. E., Butts, M. M. & Michels, L.C. (2006). The sources of four commonly reported cutoff criteria: What did they really say? *Organisational Research Methods*, **9**(2):202-220.

211. Landau, S. & Everitt, B. S. (2004). *A handbook of statistical analyses using SPSS*. Boca Raton, Florida: Chapman & Hall/CRC Press

212. Leonidas C. Leonidou (2011): Evaluating the green advertising practices of international firms: a trend analysis. *International Marketing Review,* **28**(1): 6-33.

213. Lee, S-Y., Song, X-Y. & Poon, W-Y. (2004). Comparison of approaches in estimating interaction and quadratic effects of latent variables. *Multivariate Behavioural Research*, **39**:37–67.

214. Lei, P-W. & Wu, Q. (2007). Introduction to structural equation modeling: Issues and practical considerations.*An NCME Instructional Module*, 33-44.

215. Liang, J, Bentler, P. M. (2004). An EM algorithm for fitting two-level structural equation models. *Psychometrika*, 69:101-122.

216. Little, R. J. A. & Rubin, D. A. (1987). *Statistical analysis with missing data*. New York NEW YORK: John Wiley & Sons.

217. Little, T. D., Lindenberger, U. & Nesselroade, J. R. (1999). On selecting indicators for multivariate measurement and modeling with latent variables: when "good" indicators are bad and "bad" indicators are good. *Journal of Psychological Methods*, **4**:192-211

218. Loehlin, J. C. (1992). *Latent variable models*. Hillsdale, New Jersey: Lawrence Erlbaum Publishers.

219. Losby, J. & Wetmore, A. (2012). Using Likert scales in evaluation survey work. Bethesda: Centers of Diseases Control and Prevention, Available from: http://www.cdc.gov/dhdsp/pubs/docs/CB_February_14_2012.pdf

220. Lin H., Zeng S., Ma H., and Chen H., (2014). Does commitment to environmental self-regulation matter? *An empirical examination from China. Management Decision*. **53**(5):932-956.

221. LeCren, N. and Ozanne, L.K. (2011). "Consequences of corporate environmental marketing strategies in New Zealand organisations", *Marketing Intelligence and Planning*,**29** (2): 156-177.

222. Lalit M. Johri Kanokthip Sahasakmontri, (1998)."Green marketing of cosmetics and toiletries in Thailand", *Journal of Consumer Marketing*, **15** (3): 265 – 281.

223. Luthra1 S., Garg D., and Haleem A. (2013). Identifying and ranking of strategies to implement green supply chain management in Indian manufacturing industry using Analytical Hierarchy Process. *Journal of Industrial Engineering and Management*,**6**(4): 930-962.

224. N. Mans-Kemp, P. Erasmus & S. Viviers (2016). Advances in the corporate governance practices of Johannesburg Stock Exchange companies, *Southern African Business Review*, **20**: 71-93.

225. Nussbaum and Gewirth. *Ethic Theory Moral Prac*, **16**: 493–510.

226. N. Mans-Kemp, P. Erasmus & S. Viviers (2016). Advances in the corporate governance practices of Johannesburg Stock Exchange companies. *Southern African Business Review* **20**: 71-93.

227. MacCallum, R. C. (2003). Working with imperfect models. *Journal of Multivariate Behavioural Research*, 38:113-39.

228. MacCallum, R. C. & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. Annual Review of Psychology, 51:201-226.

229. MacCallum, R. C. (1986). Specification searches in covariance structure modeling. *Psychological Bulletin*, **100**:107-120.

230. MacCallum, R. C., Browne, M. W. & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Journal of Psychological Methods*, **1**:130-149.

231. MacCallum, R. C., Roznowski, M. & Necowitz, L. B. (1992). Model modifications in covariance structure analysis: The problem of capitalization on chance. *Psychological Bulletin*, 111:490-504.

232. MacCallum, R. C., Wegener, D. T., Uchino, B. N. & Fabrigar, L. R. (1993). The problem of equivalent models in applications of covariance structure analysis. *Psychology Bulletin*, **114**:185–99.

233. MacCallum, R. C., Widaman, K. F., Zhang, S. & Hong, S. (2001). Sample size in factor analysis. *Journal of Multivariate Behavioural Research*, **36**:611-637.

234. Markland, D. (2007). The Golden Rule is that there are no Golden Rules: A commentary on Paul Barrett's Recommendations for reporting model fit in structural equation modelling. *Journal of Personality and Individual Differences*, **42**(5):851-858.

235. Marsh, H. W., Hau, K-T. & Wen, Z. L. (2004). In search of golden rules: Comment on hypothesistesting approaches to setting cutoff values for fit indexes and dangers in

overgeneralizing Hu and Bentler's 1999 findings. *Journal of Structural Equation Modeling*, **11**:320-341.

236. Marsh, H. W., Wen, Z., Nagengast, B. & Hau, K.T. (2012). Structural equation models of latent interaction.In Hoyle, R. H. (Editor.). *Handbook of structural equation modeling* (436-458). New York: Guilford Press.

237. Martens, M. P. (2005).The use of structural equation modelling in counseling psychology research. *The Counselling Psychologist*, **33**:269-298.

238. Mauro, R. (1990). Understanding L.O.V.E. (left out variables error): A method for estimating effects of omitted variables. *Psychology Bulletin*. **108**:314-29.

239. Mirvis P., Herrera M., Googins B, and Albareda L. (2016). Corporate social innovation: How firms learn to innovate for the greater good. *Journal of Business Research.* http://dx.doi.org/10.1016/j.jbusres.2016.04.073

240. Marques D., Cardoso L., and Zappalá S. (2008). Knowledge sharing networks and performance. *Comportamento Organizacional E Gestão***, 14** (2): 161-192.

241. Mostafa, M.M. (2009). "Shades of green: a psychographic segmentation of the green consumer in Kuwait using self-organising maps", *Expert Systems with Applications***, 36** (8): 11030-11038.

242. Mitchell, R.W., Wooliscroft, B. and Higham, J. (2010). "Sustainable market orientation: a new approach to managing marketing strategy", *Journal of Macromarketing*, **30** (2):160-170.

243. McDonald, R. P. (1996): Path analysis with composite variables. *Multivariate Behavioral Research*, **31**(2):239-270.

244. Meredith, J. R., Raturi, A., Amoako-Gyampah, K. & Kaplan, B. (1989). Alternative research paradigms in operations. *Journal of Operations Management*, 8(4):297–326.

245. Miles, M. B. & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd Edition.). London: Sage Publications.

246. Moosbrugger, H., Schermelleh-Engel, K. & Klein, A. (1997). Methodological problems of estimating latent interaction effects. *Methods of Psychological Research*, **2**:95-111.

247. Morgan, G. & Smircich, L. (1980). The case of qualitative research. *Academy of Management Review*, **5**:491-500.

248. Mouton, J. & Marais, H. C. (1994). *Basic concepts in the methodology of social sciences*. Pretoria: Human Sciences Research Council.

249. Mouton, J. (1996). *Understanding social research.* Pretoria: Van Schaik.

250. Mueller, R. O. & Hancock, G. R. (2008). Best practices in structural equation modeling. In Osborne, J. W. (Editors.), *Best practices in quantitative methods* (488–508). Thousand Oaks, CA: Sage Publications.

251. Mueller, R. O. & Hancock, G. R. (2010). Structural equation modeling. In Hancock, G. R. & Mueller, R. O. (Editors.). *The reviewer's guide to quantitative methods in the social sciences* (371-383). New York: Routledge.

252. Mulaik, S. (2007). There is a place for approximate fit in structural equation modelling. *Journal of Personality and Individual Differences,* **42**(5):883-891.

253. Muth´en, B. O. & Curran, P. J. (1997). General longitudinal modeling of individual differences in experimental designs: a latent variable framework for analysis and power estimation. *Journal of Psychological Methods,***2:**371-402.

254. Michael Roarty, (1997). Greening business in a market economy, *European Business Review,* **97** (5): 244 – 254.

255. Nkamnebe AD., (2011). Sustainability marketing in the emerging markets: imperatives, challenges, and agenda setting, *International Journal of Emerging Markets,* **6**(3): 217 – 232.

256. Noonan and Coleman (2013). Marketing to green communities: How to successfully reach the green consumer. *Journal of Marketing Analytics*. **1**(1): 18–31.

257. Nihel Chabrak, (2015). Promoting corporate social responsibility and sustainability: a model ofintegrity, *Society and Business Review,* **10** (3): 280 – 305.

258. Ottman, J. (1993*). Green marketing: Challenges and opportunities for the new marketing age.* Lincolnwood, Illinois: NTC Business Books.

259. Oosthuizen & S. Lahner (2016). Board diversity and sustainability performance. *Southern African Business Review,* **20**: 118-136.

260. Osman A, Othman Y, Salahudin S.N, and Abdullah M.S, (2016). *The Awareness and Implementation of Green Concepts in Marketing Mix: A Case of Malaysia. Procedia Economics and Finance,* **35:** 428 – 433.

261. Pallant, J. (2010). *SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS Version 15* (4thEdition.). Maidenhead: Open University Press.

262. Patricia Martínez (2015).Customer loyalty: exploring its antecedents from a green marketing perspective. *International Journal of Contemporary Hospitality Management*. **27**(5): 896-917.

263. Prashant Kumar, (2016)."State of green marketing research over 25 years (1990-2014)", *Marketing Intelligence & Planning*, **34** (1): 137 – 158.

264. Papista, E. and Krystallis, A. (2013), "Investigating the types of value and cost of green brands: proposition of a conceptual framework", *Journal of Business Ethics*, **115** (1): 75-92.

265. Parker R. & Hine D (2014). The Role of Knowledge Intermediaries in Developing Firm Learning Capabilities. *European Planning Studies* ,**22** (5): 1048–1061.

266. Pedhazur, E. & Schmelkin, L. P. (1991). *Measurement, design and analysis: An integrated approach.* Hillsdale, New Jersey: Lawrence Erlbaum.

267. Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, Design, and analysis: An integrated approach*. London: Lawrence Erlbaum Associates, Inc.

268. Peterson, R. A. & Kim, Y. (2012). On the relationship between coefficient alpha and composite reliability. *Journal of Applied Psychology*, **98**(1):194-198.

269. Peterson, R. A. (2000). *Constructing effective questionnaires.* London: Sage Publications.

270. Prashant Kumar, (2016)."State of green marketing research over 25 years (1990-2014)", *Marketing Intelligence & Planning*, **34** (1): 137 – 158.

271. Prashant Kumar, (2015)."Green marketing innovations in small Indian firms", *World Journal of Entrepreneurship, Management and Sustainable Development*, **11** (3): 176 – 190.

272. Prudon, P. (2013). Confirmatory factor analysis: A brief introduction and critique. 1-18, Available from: http://home.kpn.nl/p.prudon/CFA-critique.pdf.

273. Pesqueux Y., (2004). *A critical view on corporate governance and its performance measurement and evaluation systems*, Managerial Finance, **30**(8): 34 – 53.

274. Rocky J. Dwyer, (2009). Keen to be green" organisations: a focused rules approach to accountability,*Management Decision*, **47** (7):1200 – 1216.

275. RaskaD, & Shaw D., (2012). When is going green good for company image? *Management ResearchReview*, **35** (3/4): 326 – 347.

276. Raska D. & Shaw D., (2012*). When is going green good for company image?* Management Research Review, **35**(¾): 326 – 347.

277. Randall, D. M. & Wolff, J. A. (1994). The time interval in the intention behaviour relationship: Meta-analysis. *British Journal of Social Psychology*, **33**:405–418.

278. Raykov, T. & Marcoulides, G. A. (2006). *A first course in structural equation modeling* (2nd Edition.). Mahwah, New Jersey: Erlbaum.

279. Raykov, T. (1997). Scale reliability, Cronbach's coefficient alpha, and violations of essential tau-equivalence with fixed congeneric components. *Multivariate Behavioral Research,* **32**:329-353.

280. Raykov, T. (1998). Coefficient alpha and composite reliability with interrelated non-homogeneous items. *Applied Psychological Measurement,* **22**:375-385.

281. Rigdon, E. E. (1998). Structural equation modeling. In Marcoulides, G. A (Editor). *Modern Methods for Business Research* (251-294). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

282. Rigdon, Edward E. (1997). Identification of structural equation models with latent variables: A review of contributions by Bekker, Merckens and Wansbeek. *Structural Equation Modeling,* **4**:80-85.

283. Rovine, M. J. & Molenaar, P. C. M. (1998). A LISREL model for the analysis of repeated measures with a patterned covariance matrix. *Journal of Structural Equation Modeling*, **5**(4):318-343.

284. Reverte C, Eduardo Gomez-Melero, and Cegarra-Navarro (2016). The influence of corporate social responsibility practices on organisational performance: evidence from Eco-Responsible Spanish firms, *Journal of Cleaner Production***112**: 2870-2884**.**

285. RianBeise-Zee AD., (2015. *How to go green: unravelling green preferences of consumers*, Asia-Pacific Journal of Business Administration, 7(1): 56 – 72.

286. Roarty M., (1997). *Greening business in a market economy*, European Business Review, **97** (5): 244 – 254.

287. Raykov, T. & Marcoulides, G. A. (2000). *A first course in structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

288. Rashid N.R., Khalid S. A. and Rahman N. A (2015), Environmental Corporate Social Responsibility (ECSR): Exploring its Influence on Customer Loyalty, *Procedia Economics and Finance*, **31**: 705 – 713.

289. Ru-Jen Lin, Kim-Hua Tan, Yong Geng (2013). Market Demand, Green Product Innovation, and Firm Performance: Evidence from Vietnam Motorcycle Industry. *Journal of Cleaner Production*, **40**: 101-107.

290. Richey, R.G. Jr, Musgrove, C.F., Gillison, S.T. and Gabler, C.B. (2014). "The effects of environmental focus and program timing on green marketing performance and the moderating role of resource commitment", *Industrial Marketing Management*, **43** (7): 1246-1257.

291. Rasool B. C and Shah A (2015). Evaluating the Impact of Human Resources on Firm Performance: A Literature Review**,** *Journal of Behavioural Sciences,* **25** (2):120-136.

292. Ru-Jen Lin, Kim-Hua Tan, Yong Geng (2013). Market demand, green product innovation, and firm performance: evidence from Vietnam motorcycle industry. *Journal of Cleaner Production,* **40:** 101-107.

293. *RM* Mukonza andC Mukonza (2015). Implementation of Green Economy Policies and Initiatives in the City of Tshwane. *Journal of Public Administration,* **5** (1): 90-107.

294. Schumacker, R. E. & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

295. Stuart L.G., (2006). Recent Developments in Corporate Governance: An Overview. *Journal of Corporate Finance***12** (3): 381-402.

296. Shleifer & Vishny (1997). "A Survey of Corporate Governance," *Journal of Finance***52**(2):738.

297. S. Perks and EE Smith, (2012). Greening the Core Business Functions: A Retail and Finance Sector Perspective, *Journal of Contemporary Management*. **9:**1-23.

298. Stock G.N., Mcdermott C., And Mcdermott M (2014). The Effects of Capital and Human Resource Investments on Hospital Performance. *Hospital Topics*, **92**(1): 14–19.

299. Saeidi S. P., and Sofian S. (2014) A Proposed Model of the Relationship Between Corporate Social Responsibility and Firm Performance, *2014 International conference on Technology management and emerging technologies, Bandung, Indonesia*.

300. Sony A., Ferguson D., and Beise-Zee R., (2015). How to go green: unravelling green preferences of consumers, Asia-Pacific, *Journal of Business Administration*, **7**(1): 56 – 72.

301. Saunders, M., Lewis, P. & Thornhill, A. (2007). *Research methods for business students* (4th Edition.). Harlow: FT Prentice Hall.

302. Scacchi, W. (2002). Understanding the requirements for developing open source software systems. *IEE Proceedings Software*, 149(1):24-39.

303. Schafer, J. L. (1997). *Analysis of Incomplete multivariate data*. London: Chapman & Hall.

304. Schmitt, N. (1996). Uses and abuses of co-efficient alpha. *Journal ofPsychological Assessment,* 8:350-353.

305. Scholarios, D. (2005). Research methodology course notes: Research methods: Strathclyde Business School.

306. Schreuder, H. T., Ernst, R. & Ramirez-Maldanado, H. (2004). Statistical techniques for sampling and monitoring natural resources. *General Technical Report, RMRS-GTR-126,* United states, USDA Forest Service, Rocky Mountain Research Station, Ft. Collins, CO.. Available from: http://www.fs.fed.us/rm/pubs/rmrs_gtr126.html.

307. Schumacker, R. E. & Lomax, R. G. (2010). *A beginner's guide to structural equation modelling* (3rd Edition.). New York: Routledge.

308. Schumaker, R. E. & Marcoulides, G. A. (1998*). Interaction and nonlinear effects in structural equation modeling*. Mahwah, New Jersey: Erlbaum.

309. Shamoo, A. E. & Resnik, B. R. (2003). *Responsible conduct of research*. New York: Oxford University Press.

310. Shepperd, B. H., Hartwick, J. & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research,* 15:325–343.

311. Singh, A. K. (1986). *Tests measurements and research methods in behavioural sciences*. New Delphi: Tata McGraw Hill Publishing CompaNew York Limited.

312. Singh, K. J. (2012). What is Sampling? What are its Characteristics: Advantages and Disadvantages? Research Methodology, Indian Business School, Available from: http://www.mbaofficial.com/mba-courses/research-methodology/what-is-sampling-what-are-its-characteristics-advantages-and-disadvantages/.

313. Skrondal, A. & Rabe-Hesketh, S. (2004). *Generalized latent variable modeling: Multilevel, longitudinal, and structural equation models*. Boca Raton, FL: Chapman & Hall.

314. Smith, M. H. (2004). A sample/population size activity: Is it the sample size of the sample as a fraction of the population that matters?*Journal of Statistics Education,* 12(2). Available from: http://www.amstat.org/publications/jse/v12n2/smith.html

315. Snedecor, G. W. & Cochran, W. G. (1989). *Statistical methods* (8th Edition.). Ames, Iowa: Iowa State University Press.

316. Statistical Support, (2001). Structural Equation Modeling using AMOS: An Introduction, Available from: http://www.kokdemir.info/courses/psi748/docs/[p]%20sem%20using%20amos%20an%20introduction.pdf.

317. Stevens, R. (1996). *Applied multivariate statistics for the social sciences* (3rd Edition.). Mahwah, New Jersey: Erlbaum.

318. Swanson, R. A. & Holton, E. F. III. (Editors.) (2005). *Research in organisations: Foundations and methods of inquiry*. San Francisco: Berrett-Koehler.

319. Streiner, D. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, 80:99-103.

320. Streiner, D. L. (2003a). Being inconsistent about consistency: When coefficient alpha does and doesn't matter. *Journal of Personality Assessment*, 80:217-222.

321. Sheng M. L and Chien I (2016). "Rethinking organisational learning orientation on radical and incremental innovation in high-tech firms". *Journal of Business Research* **69**: 2302–2308.

322. Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2:53-55.

323. Taylor-Powell, E. (1998). Questionnaire design: asking questions with a purpose. University of Wisconsin Extension, Texas Agricultural Extension Service, 1-20, Available from: http://learningstore.uwex.edu/assets/pdfs/g3658-2.pdf.

324. Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, 1(1):77-100.

325. Teo, T., & Khine, M. S. (Editors.) (2009). *Structural equation modeling in educational research: Concepts and applications.* Rotterdam, Netherlands: Sense Publishers.

326. Tomarken, A. J. & Waller, N. G. (2003). Potential problems with well-fitting models. *Journal of Abnormal Psychology*, 112:578–98.

327. Tiger Li J.A.F. Nicholls Sydney Roslow, (1999). "The relationships between market-driven learning and new product success in export markets", *International Marketing Review*, **16** (6): 476 – 503.

328. Tomarken, A. J. & Waller, N. G. (2005). Structural equation modeling: Strengths, limitations, and misconceptions. *Annual Review of Clinical Psychology*, 1:31-65.

329. Qiu X, Srinivasan P and Hu Y (2014) Supervised Learning Models to Predict Firm Performance with Annual Reports: An Empirical Study. *Journal of the Association for Information Science and Technology*, **65**(2): 400–413.

330. Ulrich Kriese, (2009). Business and marketing strategies in responsible property investment", *Journal of Property Investment & Finance*, **27**(5): 447 – 469.

331. Val Clulow, (2005). Futures dilemmas for marketers: can stakeholder analysis add value? *European Journal of Marketing,* **39**(9/10): 978 – 997.

332. Valerie L. Vaccaro, (2009)."B2B green marketing and innovation theory for competitive advantage", *Journal of Systems and Information Technology*, **11** (4): 315 – 330.

333. Van den Berg, U., Labuschagne, J-P. & Van den Berg, H., (2013). 'The effects of greening the supplier and innovation on environmental performance and competitive advantage', *Journal of Transport and Supply Chain Management,* **7**(1): 121-128.

334. Vilk et al., (2014). Gender and corporate social responsibility: 'big wins' for business and society? *Procedia - Social and Behavioral Sciences,* **156**: 198 – 202.

335. .Valerie L. Vaccaro, (2009)."B2B green marketing and innovation theory for competitive advantage", *Journal of Systems and Information Technology*, **11** (4): 315 – 330.

336. Wang and Hus (2011), Corporate Social Responsibility and Firm Performance. *Fourth International Conference on Business Intelligence and Financial Engineering. PP: 390-395.*

337. Witajewski-Baltvilks J., Verdolini E., and Tavoni M (2015). Bending the learning curve, *Journal of Energy Economics,* **52**: PP 86–99.

338. Wu S.J., Melnyk S.A., and Calantone R.J. (2008). Assessing the Core Resources in the Environmental Management System from the Resource Perspective and the Contingency Perspective. *IEEE Transactions on Engineering Management*, **55**, (2): 304-315.

339. Wong P; Cheung S; and Fan K (2009). Examining the Relationship between Organisational Learning Styles and Project Performance. *Journal of Construction Engineering and Management, 6:* 497-505.

340. W. Wossen Kassaye, (2001),"Green dilemma", *Marketing Intelligence & Planning*, **19** (6): 444 – 455.

341. Wang I, Shieh C., And Wang F (2008). Effect of Human Capital Investment on Organisational Performance, *Social Behavior And Personality,* **36**(8): 1011-1022.

342. William Lazonick & Mary O'Sullivan (2000). Maximizing shareholder value: a new ideology for corporate governance, *Economy and Society*, **29**(1): 13-35.

343. Walter E. Greene, Gary D. Walls and Larry J. Schrest, (1994)."Internal Marketing", *Journal of Services Marketing,* **8** (4): 5 – 13.

344. W. Wossen Kassaye, (2001). "Green dilemma", *Marketing Intelligence & Planning*, **19** (6): 444 – 455.

345. Wallace, W. (1971). *The logic of science in sociology*. Chicago: Aldine Atherton.

346. Waller, N. G. & Meehl, P. E. (2002). Risky tests, verisimilitude, and path analysis. *Journal of Psychological Methods*, 7:323-337.

347. Weiner, J. (2007). Measurement reliability and validity measures, Johns Hopkins University, Available from: http://ocw.jhsph.edu/courses/hsre/PDFs/HSRE_lect7_weiner.pdf.

348. West, S. G., Taylor, A. B. & Wu, W. (2012). Model fit and model selection in structural equation modeling. In Hoyle, R. H. (Editors.), *Handbook of structural equation modeling*. New York: Guilford.

349. Weston, R. W. & Gore, P. A., Jr. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34:719-751.

350. Wier, M. & Andersen, L. M. (2001), Designing and testing the questionnaire: Results and considerations. Project on consumer demand for organic foods: Domestic and foreign market perspectives. *Working Paper 3*, AKF, Denmark.

351. Wothke, W. (1996). *Models for Multitrait-Multimethod Matrix Analysis in Advances Structural Equation Modeling*. In Marcoulides, G. & Schumacker, R. (Editors.). 7-56. Mahwah New Jersey: Erlbaum.

352. Xiao-Xing Huang, Zhen-Peng Hu, Cun-Shan Liu, Da-Jin Yu, and Liu-fang Yu (2016). The Relationships Between Regulatory and Customer Pressure, Green Organisational Responses, and Green Innovation Performance. *Journal of Cleaner Production*, **112**: 3423-3433.

353. Yu-Shan Chen (2010). The Drivers of Green Brand Equity: Green Brand Image, Green Satisfaction, and Green Trust. *Journal of Business Ethics*, **93**: 307–319.

354. Yu-Shan Chen (2008). The Driver of Green Innovation and Green Image: Green Core Competence, *Journal of Business Ethics*, **81**(3): 531-543.

355. Yvon Pesqueux, (2004). A critical view on corporate governance and its performance measurement and evaluation systems, *Managerial Finance*,**30** (8): 34 – 53.

356. Yu-Shan Chen Ching-Hsun Chang Feng-Shang Wu, (2012)."Origins of green innovations: the differences between proactive and reactive green innovations", *Management Decision*, **50** (3): 368 – 398.

357. Yang, Z., Wang, X. & Su, C. (2006). *A Review of Research Methodologies in international Business*. *International Business Review*, 15:601-617.

358. Yap C. and Rashid Md (2011). Competitive Intelligence Practices and Firm Performance. *International Journal of Libraries & Information Services*, **61**: 175–189.

359. Yu-Shan Chen Ching-Hsun Chang Feng-Shang Wu, (2012)."Origins of green innovations: the differences between proactive and reactive green innovations", *Management Decision*, **50** (3): 368 – 398.

360. Yuan, K-H & Hayashi, K. (2003). Bootstrap approach to inference and power analysis based on three statistics for covariance structure models. *British Journal of Mathematical Statistical Psychology*, 56:93-110.

361. Yuan, K-H. & Bentler, P. M. (2000). Three likelihoodbased methods for mean and covariance structure analysis with nonnormal missing data. In Sobel, M. E. & Becke, M. P. (Editors). Sociological Methodology. *American Sociology Association*, 30:165–200

362. Yung, Y-F, Bentler, P. M. (1996). Bootstrapping techniques in analysis of mean and covariance structures. See Marcoulides & Schumacker, (1996). *Advanced Structural Equation Modeling: Issues and Techniques*, 125-157.

363. Zikmund, W., Babin, B., Carr, J. & Griffin, M. (2010). *Business reasearch methods*. (8th Edition.). South-Western: Cengage Learning.

364. Zhi Jun Xu, Xiaobing Liu1, Chunguang Bai, and Lijie Hu, (2015). "Green Marketing: A Grey-based Rough Set Theory Analysis of Activities", *International Journal of Innovation Science*, **7** (1): 27 – 38.

Appendix 1: Research Questionnaire:

Topic: "GREEN MARKETING, GREEN CORPORATE GOVERNANCE COMMITMENT, AND ITS IMPACT ON FIRM PERFORMANCE: THE CASE OF ELECTRONIC MANUFACTURERS IN SOUTH AFRICA."

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Dear Sir/Madam,

RE: COMPLETION OF RESEARCH QUESTIONNAIRE

I am Vivian A. Atud, a PhD candidate at the University of the Witwatersrand in South Africa. As part of the requirements for the degree of Doctor of Philosophy in Marketing at the university, I intend to conduct a research among Managers in a number of Electronics Manufacturing Companies operating in South Africa.

The purpose of this study is to examine the impact of green corporate commitment on green marketing, green relationship learning, green human resources investment and firm performance

The findings of the study are expected to add knowledge to the existing academic literature, which would be used for academic purpose and would also be helpful in explaining the impact of corporate commitment to green on business performance, which are also critical to the successful management of electronics manufacturing companies operating in South Africa.

No individual information will be disclosed and all results will be presented as an aggregate summary data for academic purpose.

It would take a participant approximately 15 to 25 minutes to fill out the questionnaire.

Thank you for your cooperation.

Yours Sincerely

……..
Ms. Vivian A. Atud **(student)**

……..
Professor. Richard Chinomona **(Research Supervisor)**

QUESTIONNAIRE

Please answer the following questions by marking the appropriate answer(s) with an **X.** This questionnaire is strictly for research purpose only.

SECTION A: GENERAL INFORMATION

The section is asking your background information. Please indicate your answer by ticking

(X) Or (√) on the appropriate box.

A1 Please indicate your gender

Male		Female	

A2 Please indicate your marital status

Married		Single	

A3 Please indicate your age group

18 - 35	
36 - 45	
46 - 55	
56 - 65	
Above 65	

A4 Please indicate your highest educational level

Primary School	
High School / College	
Diploma	
Degree	
Post graduate degree	
Other (Specify)	

A5. Please indicate your Race

African	
White	
Indian	
Coloured	

A6. Industry in which your firm operates

Business and Industrial Electronics	
Household electronics	
Durable Electronics	
Other (Specify)	

A7. Number of years your company has been in business

Less than 5 years	
6 to 10 years	
11 to 20 years	
More than 20 years	

A8. Company shares are listed on a major stock exchange

yes	
no	

A9. Ownership of company

South African Private Company	
South African Public Company	
Foreign/Multinational Company	
Joint Venture	
Other	

A10. Industry in which your firm operates

Business and Industrial Electronics	
Household electronics	
Durable Electronics	
Other (Specify)	

A11. Please indicate your position in the organisation

Marketing Manager	
Director/ Owner	
Technical /Production Manager	
CEO	
Other (Please Specify)	

Below are statements about green marketing corporate commitment to green, corporate social investment, green human capital investment, green relationship learning and firm Performance all measured on a 1 to 5 point Likert scale.

SECTION B: CORPORATE COMMITMENT TO GREEN

Please indicate to what extent you agree/disagree with each statement as the statement relates to your company's commits to green

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. Our company has an environmental plan;	1	2	3	4	5
2. Our company has an insightful environmental vision or mission;	1	2	3	4	5
3. Our company has communicated its environmental plans to its employees;	1	2	3	4	5
4. Our company has communicated its environmental vision or mission to its stakeholders;	1	2	3	4	5
5. Our company has a well-developed environment, health, and safety unit, environmental management board, or environmental committee;	1	2	3	4	5
6. Our company's budget planning includes the concerns of environmental investment or procurement	1	2	3	4	5
7. Our company has an established environmental management system.	1	2	3	4	5
8. Our company is involved in sponsoring and participating in public environmental activities.	1	2	3	4	5
9. Our company is developing environmental assessment programs.	1	2	3	4	5
10. Our Company carries out environmental auditing.	1	2	3	4	5
11. Our company collects green information, processing and analysis.	1	2	3	4	5
12. Our company has an ISO14001 certification.	1	2	3	4	5
13 Our company has a strong formal company environmental evaluation.	1	2	3	4	5
14 Our company sets environmental improvement targets for company.	1	2	3	4	5
14. Our company does total quality environmental management.	1	2	3	4	5

Section C: Green Marketing Capability

Please indicate to what extent you agree/disagree with each statement as the statement relates to your company's commits to green product and manufacturing design

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. Our company chooses the materials of the product that produce the least amount of pollution for conducting the product development or design.	1	2	3	4	5
2. Our company chooses the materials of their products that consume the least amount of energy and resources for conducting the product development or design.	1	2	3	4	5
3. Our company uses the fewest amounts of materials to comprise their products for conducting the product development or design.	1	2	3	4	5
4. Our company would circumspectly evaluate whether their products are easy to recycle, reuse, and decompose for conducting the product development or design.	1	2	3	4	5
5. Our manufacturing process of the company effectively reduces the emission of hazardous substances or wastes.	1	2	3	4	5
6. Our manufacturing process of the company effectively recycles wastes and emission that can be treated and re-used.	1	2	3	4	5
7. Our manufacturing process of the company effectively reduces the consumption of water, electricity, coal, or oil.	1	2	3	4	5
8. Our manufacturing process of the company effectively reduces the use of raw materials	1	2	3	4	5

Please indicate to what extent you agree/disagree with each statement as the statement relates to your company's commits to green marketing and sales

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. Our company implements green planning activities.	1	2	3	4	5
2. Our company implements green public relations activities.	1	2	3	4	5
3. Our company implements green advertising activities.	1	2	3	4	5
4. Our company implements green packaging activities.	1	2	3	4	5
5. Our company implements green labeling activities.	1	2	3	4	5
6. Our company implements green promoting activities.	1	2	3	4	5
7. Our company implements green pricing activities.	1	2	3	4	5
8. Our company implements green distribution activities.	1	2	3	4	5
9. Overall I consider green marketing a good thing?	1	2	3	4	5

Section D: Green Relationship Learning

Please indicate to what extent you agree/disagree with each statement as the statement relates to green relationships learning in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. Our company exchanges information on environmental management of products with relevant partners	1	2	3	4	5
2. Our company learns from its relevant partners to adjusts its understanding of environmental trends in technology related to its business	1	2	3	4	5
3. Our company establishes joint teams with partners to discuss environmental issues	1	2	3	4	5
4. Our company is part of industry association promoting green products	1	2	3	4	5

Section E: Green Human Capital Investment

Please indicate to what extent you agree/disagree with each statement as the statement relates to green human capital investment in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. In our company, green teams are being setup to tackle environmental problems	1	2	3	4	5
2. In our company employees are actively involved in the process of determining environmental goals	1	2	3	4	5
3. In our company employees are encouraged to give suggestions on environmental performance improvements	1	2	3	4	5
4. In our company joint and team problem solving on environmental issue are carried out	1	2	3	4	5
5. Our company trains employees in environmental issues	1	2	3	4	5

Section F: Green Corporate Social Investment

A. **Social Dimension:** Please indicate to what extent you agree/disagree with each statement as the statement relates to the social dimension of corporate social investment in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. We support the employment of disabled people and people at risk of social exclusion	1	2	3	4	5
2. We foster training and professional development of our employees	1	2	3	4	5
3. We comply with standards related to labour risks, health, safety and hygiene programmes	1	2	3	4	5
4. We are committed to job creation	1	2	3	4	5
5. We have human resource policies aimed at facilitating the conciliation of employees' professional and personal lives	1	2	3	4	5
6. We consider employees' initiatives and proposals in management decisions	1	2	3	4	5
7. We are committed to the improvement of the quality of life of our employees	1	2	3	4	5
8. Equal opportunities exist for all employees without any type of discrimination	1	2	3	4	5
9. We participate in social projects to the community (sponsorships, charities, etc.)	1	2	3	4	5
10. We are aware of the importance of making pension plans for our employees	1	2	3	4	5

B. **Economic Dimension** Please indicate to what extent you agree/disagree with each statement as the statement relates to economic green corporate social investment in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. We are particularly concerned to offer high quality products and/or services to our customers	1	2	3	4	5
2. Our products and/or services satisfy national and international quality standards (i.e., ISO standards)	1	2	3	4	5
3. We are characterized as having the best quality-to-price ratio for our products and/or services	1	2	3	4	5
4. The guarantee of our products and/or services is broader than the market average	1	2	3	4	5
5. We provide our customers with accurate and complete information about our products and/or services	1	2	3	4	5
6. Respect for consumer rights is a management priority for our company	1	2	3	4	5
7. We foster business relationships with suppliers of our same region	1	2	3	4	5
8. We have effective procedures for handling complaints by our customers	1	2	3	4	5
9. We offer clear and precise information in the labelling of our products related to our warranty obligations.	1	2	3	4	5
10. We have a formal procedure for the interaction and dialogue with our customers, suppliers and the other	1	2	3	4	5

C. **Environmental Dimension** Please indicate to what extent you agree/disagree with each statement as the statement relates to environmental green corporate social investment in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. We are able to minimise our environmental impact using environmentally-friendly products	1	2	3	4	5
2. We make investments in energy savings programmes	1	2	3	4	5
3. We adopt programmes for the introduction of alternative sources of energy	1	2	3	4	5
4. We participate in activities related to the protection and improvement of our natural environment	1	2	3	4	5
5. We are in favour of reductions in gas emissions and in the production of wastes, and in favour of recycling materials	1	2	3	4	5
6. We have a positive predisposition to the use, purchase, or production of ecological goods	1	2	3	4	5
7. We value the use of recyclable containers and packaging	1	2	3	4	5

Section F: Firm Performance

Market Performance

Please indicate to what extent you agree/disagree with each statement as the statement relates to market performance in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. The rate of market share in our company is increasing	1	2	3	4	5
2. The degree of customer satisfaction in our company is increasing	1	2	3	4	5
3. The rate of market growth in our company is increasing	1	2	3	4	5
4. Sales in our company is increasing	1	2	3	4	5
5. Overall, I can say that the marketing performance of our company is increasing	1	2	3	4	5

Financial Performance

Please indicate to what extent you agree/disagree with each statement as the statement relates to financial performance in your company

1 = **Strongly Disagree**, 3 = **Neutral** 5 = **Strongly Agree**

1. The profit margin in our company is increasing	1	2	3	4	5
2. The return on assets in our company increasing	1	2	3	4	5
3. The returns on equity in our company is increasing	1	2	3	4	5
4. Overall I can say the financial performance of our company is increasing	1	2	3	4	5

APPEMDIX 2: ETHICS CLEARANCE TO CONDUCT THE STUDY