

**TOP MANAGEMENT PERCEPTION TOWARDS GREEN
INNOVATION IMPLEMENTATION IN GOVERNMENT-
LINKED COMPANIES**

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**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
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**TOP MANAGEMENT PERCEPTION TOWARDS GREEN INNOVATION
IMPLEMENTATION IN GOVERNMENT-LINKED COMPANIES**

By

NOORMAIZATUL AKMAR ISHAK

**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

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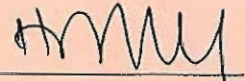
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ABSTRACT

The focus of this study is to explore the top management perception towards green innovation implementation in the Government-Linked Companies by understanding: (i) the impact of green concept on innovation implementation in the company and its directives, (ii) how top management value green innovation and their leadership attributes, (iii) innovation that is widely diffused, and (iv) the significance of green innovation to organizational sustainability. The participants involved were top managers from two Government-Linked Investment Companies, 11 Government-Linked Companies and two Multinational Companies. Purposive sampling technique was chosen to select the people to be interviewed, and multiple-case sampling was chosen for organizations because it added certainty to findings. The interviews transcriptions were transferred to the NVivo, a computer assisted qualitative data analysis systems (CAQDAS), to help in data managing and themes generating. Open-coding resulted in 67 unique codes and were reduced to axial coding (major themes) and further collapsed into four group themes of selective coding. Findings of the study indicated that green innovation implementation concept had an impact on image and future projects allocation by the government. The study also revealed that the top management was responsible for green innovation directives due to companies' bottom lines. The finding also showed that data fitted the working model for leadership attributes by combining Situational Leadership and Strategic Leadership into Eco-Situational Strategic Leadership where sustainability was positioned as an opportunity for dominant foundation of competitive advantage and corporate survival especially when technological green innovation was widely diffused in the companies. This study also proposed the Green Pinnacle Model to understand the significance of green innovation to organizational sustainability.

Keywords: Green innovation, Top management, Government-Linked Companies

ABSTRAK

Fokus kajian ini bertujuan untuk meneroka persepsi pengurusan atasan ke arah pelaksanaan inovasi hijau dalam Syarikat Berkaitan Kerajaan dengan memahami: (i) kesan konsep hijau kepada pelaksanaan inovasi dalam syarikat dan arahannya, (ii) bagaimana pengurusan atasan menilai inovasi hijau dan sifat-sifat kepimpinan mereka, (iii) inovasi yang meresap luas, dan (iv) kepentingan inovasi hijau untuk kemampuan organisasi. Para peserta yang terlibat merupakan pengurus atasan dari dua Syarikat Pelaburan Berkaitan Kerajaan, 11 Syarikat Berkaitan Kerajaan dan dua Syarikat Multinasional. Teknik persampelan '*purposive*' telah digunakan bagi memilih peserta untuk ditemuramah, dan persampelan pelbagai kes telah dipilih untuk organisasi bagi menambah kepastian kepada penemuan kajian. Transkripsi temubual telah dipindahkan ke NVivo, iaitu sistem analisis data kualitatif (CAQDAS), untuk membantu pengurusan data dan penjaan tema. Pengekoden terbuka telah menghasilkan 67 kod unik yang membentuk pengekoden paksi (tema utama) yang kemudiannya diletakkan ke dalam empat kumpulan pengekoden tema terpilih. Dapatan kajian menunjukkan bahawa konsep pelaksanaan inovasi hijau mempunyai kesan ke atas imej dan peruntukan projek-projek kerajaan pada masa depan. Kajian ini mendedahkan pihak pengurusan atasan bertanggungjawab untuk arahan inovasi hijau berdasarkan garis keuntungan syarikat. Dapatan kajian juga menunjukkan bahawa data berpadanan dengan model kerja bagi sifat kepimpinan yang bersesuaian dengan menggabungkan Kepimpinan Situasi dan Kepimpinan Strategik kepada Kepimpinan Eco-Situasi Strategik, di mana kemampuan diletakkan sebagai satu peluang untuk asas dominan kelebihan daya saing dan kesinambungan korporat terutamanya apabila inovasi hijau teknologi telah disebarkan secara meluas dalam syarikat-syarikat. Kajian ini juga mencadangkan Model Kemuncak Hijau untuk memahami kepentingan inovasi hijau terhadap kemampuan organisasi.

Kata kunci: Inovasi hijau, Pengurusan tinggi, Syarikat berkaitan kerajaan

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Firstly, Praise to Allah S.W.T. for His blessing and guidance which has pulled me through the challenging and dysfunctional times when I was not motivated and feeling so down to complete my goal due to obstacles that beyond my control. The outcome has made me so beautiful – mentally, spiritually and physically. I am a better and wiser person than I was before in acknowledging and perceiving the wisdom of knowledge, the humbleness of being human, the beauty of patience and being perseverance in anything.

I would like to thank my supervisor, Associate Professor Dr Hartini Ahmad for her tremendous support, encouragement, guidance, vision and inspiration throughout my study at Universiti Utara Malaysia.

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To whom it may concern,

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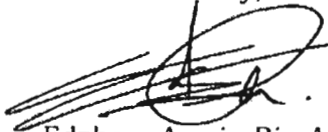
Please be informed that this thesis titled Top Management Perception Towards Green Innovation Implementation In Government-Linked Companies has been proofread.

I would also like to highlight that this thesis has been proofread twice prior to submission.

- i. After viva voce
- ii. After receiving correction comments from supervisor

I hereby acknowledge that the writer has made all the necessary correction.

Yours Sincerely,



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2/2/2015

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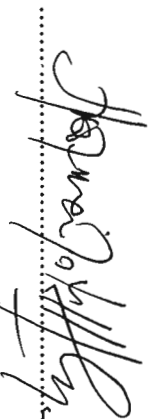
No.	Chapter	Examiners' Comment	Action Taken	Remark
1	Main Thesis Cover	Title "TOP MANAGEMENT LEADERSHIP ATTRIBUTES TOWARDS GREEN INNOVATION IMPLEMENTATION IN THE GLCs" was not appropriately applied to picture the study.	The title was changed to "TOP MANAGEMENT PERCEPTION TOWARDS GREEN INNOVATION IMPLEMENTATION IN THE GOVERNMENT-LINKED COMPANIES"	New title explains the study better and clearer.
2	Abstract	It should be written more precise and concise.	The end part of abstract that has conclusion is omitted.	
3	Chapter 1	1.4 Research Objectives was not related to the 1.3 Research Questions	Research Objectives section was deleted from Chapter 1.	In qualitative study approach, research objectives section is not necessary to have because it is conducted in the inductive way to explore and explain the study's gaps.
4	Chapter 1	All the words of "leadership attributes" in the thesis were misleading.	"leadership attributes" word was deleted and sentences were re-phrase.	Sentences were re-phase to resemble the findings of study.

5	Chapter 1	1.5 Operational Definitions consisted with terms that not related to study.	1.5 Operational Definition was change to “Definition of Terms”	In qualitative study approach, Definitions of terms used are tentative because of the inductive, evolving methodological design in qualitative study where theme may emerge through the data analysis (Creswell, 2009, p.40)
6	Chapter 1	1.6 Scope and Limitations of the Study should be mentioning only the scope.	1.6 is written as “Scope of Study”	
7	Chapter 1 and 2	Only have Kyoto Protocol. Need to consider to include Copenhagen Awards	Include the Copenhagen Award together with Kyoto Protocol.	Page 2
8	Chapter 2, 3 and 4	The beginning and ending of these chapters must have “Introduction” and “Summary”	All three chapters have “Introduction” and “Summary” Chapter 2: 2.1 Introduction – page 20 2.11 Summary – page 49 Chapter 3: 3.1 Introduction – page 51 3.9 Summary – page 91 Chapter 4: 4.1 Introduction – page 92 4.6 Summary – page 231	

9	Chapter 2 and 5	Literature reviews cited were not current.	Added 41 new citations that are current (2011-2015)	Highlighted with red.
10	Chapter 2	“2.9 Leadership Theories” were not shown emerging in study.	Re-phrase into 2.9 Top Management and Leadership Studies (page 43) with focus on current reviews.	
11	Chapter 3	“Leadership attributes” word being used is not appropriate way in this study.	“Leadership attributes” word is replaced with “top management”. Sentences are re-phrase to fit with “top management” word.	
12	Chapter 3	No title explain the mode methodology applied	Add 3.3.1 Qualitative Approach (page 52) to show the methodology approach that being applied.	
13	Chapter 3 and 4	Not clear on the expert reviewer	Expert reviewers were explain in 3.3.7 Expert Reviewers (page 64) and 4.1.3 Expert Reviewers (page 97)	
14	Chapter 3 and 4	The name of respondents and their companies should be anonymity.	Only the initial names of the respondents are written. The companies are address as GLICs and GLCs follows by alphabet	Refer Table below Table 3.1 (page 69)
15	Chapter 4	Whole chapter 4 needs to do proofreading.	Theses is sent for proofreading. All chapters go through the proofreading process with major correction on the grammar in Chapter 4.	

16	References	Lack of latest citations.	41 new articles are added between year 2011 - 2015 and highlighted in red.	Please refer to References part in the thesis.
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Prepared by:



(NOORMAIZATUL AKMAR ISHAK)

Checked by:



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 (ASSOCIATE PROFESSOR) KADR HARTINI AHMAD)

Table 3.1 (page 69)

List of Companies Invited for Focus Group Discussion

No	Company	Industry	Type	Status
1	GLICs A (Khazanah)	Investment	GLICs	Not Available
2	GLICs B (KWSP)	Investment	GLICs	Head of Department
3	GLICs C (PNB)	Investment	GLIs	Vice President
4	GLCs A (Celcom Berhad)	Telecommunication	GLCs	Not Available
5	GLCs B (Petronas)	Oil and Gas	GLCs	Vice President
6	GLCs C (Proton)	Automotive	GLCs	Not Available
7	GLCs D (UMW)	Automotive	GLCs	Senior Managing Director
8	GLCs E (Maybank)	Financial Institute Group	GLCs	Not Available
9	GLCs F (MNRB)	Insurance	GLCs	Vice President
10	GLCs G (MAS)	Transport and Logistic	GLCs	Not Available
11	GLCs H Northport (M) Berhad	Transport and Logistic	GLCs	Senior Manager
12	GLCs I (Island & Peninsular)	Property	GLCs	Not Available
13	GLCs J (Pelangi)	Property	GLCs	Not Available
14	GLCs K (Petaling)	Property	GLCs	Not Available
15	GLCs L (Putrajaya Holding)	Property	GLCs	Not Available
16	GLCs M (PLUS)	Infrastructure and Construction	GLCs	Head of Department
17	GLCs N (Sime Darby Berhad)	Plantation and Property	GLCs	Not Available

Table 3.2 (page 70)

List of Companies Been Requested Permission for Individual Interview

No	Company	Industry	Type	Status	Participant
1	GLCs C (Proton)	Automotive	GLCs	Available	Advisor
2	GLCs P (THT)	Property	GLCs	Available	Project Directors
3	GLCs Q (TNB)	Utility	GLCs	Available	Chief Operation Officer
4	GLCs R (ERL)	Transport and Logistic	GLCs	Not Available	NA
5	GLCs S (Petronas Fertilizer)	Chemical	GLCs	Not Available	NA

Table 3.3 (page 71)

List of Expert Reviewers' Companies Profile

No	Company	Industry	Type	Status	Participant
1	GLCs C (Proton)	Automotive	GLCs	Available	Managing Director
2	Repso	Oil and Gas	MNCs	Available	Managing Director
3	Technology and Innovation Institute	Research and Development	Industry Advisor	Available	Managing Director

Table 4.3: (page 96)

Overview of Individual Participant's Profile

Organization	Participant	Status	Education	Tenure (years)
GLICs B (KWSP)	Abdul W	Head of Department	NA	NA
GLICs C (PNB)	Aziz A	Vice President	NA	5
GLCs B (Petronas)	Amirul R	Vice President	Degree in Civil Engineering	28
GLCs C (Proton)	The Statesman, Tun M	Advisor	Degree in Medical	30
GLCs D (UMW)	Mazlan AS	Senior Managing Director	Not Applicable	30
GLCs F (MNRB)	Azlinda AZ	Vice President	Degree in HRM	5
GLCs H Northport (M) Berhad	Nizam T	Senior Manager	MBA	8
GLCs M (PLUS)	Hassan S	Head of Department	NA	NA
GLCs P (THT)	Haji M	Senior Project Director	Degree in Civil Engineering	13
GLCs P (THT)	Tengku K	Project Director	Degree in Civil Engineering	5
GLCs Q (TNB)	Datuk A	Chief Operation Officer	Degree in Power Engineering	34

Table 4.2 (page 95)

List of Companies Participated in Study

No	Company	Industry	Type
1	GLICs B (KWSP)	Investment	GLICs
2	GLICs C (PNB)	Investment	GLICs
3	GLCs B (Petronas)	Oil and Gas	GLCs
4	GLCs C (Proton)	Automotive	GLCs
5	GLCs D (UMW)	Automotive	GLCs
7	GLCs F (MNRB)	Insurance	GLCs
8	GLCs H Northport (M) Berhad	Transport and Logistic	GLCs
9	GLCs M (PLUS)	Infrastructure and Construction	GLCs
10	GLCs P (THT)	Property	GLCs
11	GLCs Q (TNB)	Utility	GLCs

Table 4.5: (page 98)

Overview of Expert Reviewer's Profile

Organization	Participant	Status	Education	Tenure (years)
GLCs C (Proton)	DS S. Z.	Managing Director	Degree in Engineering	4
Repsol	Dr Johan	Managing Director	Degree in Finance and Accounting, DBA	Not Applica ble
Bristol	Professor S	Managing Director	Ph.D in Technology and Engineering	3

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LIST OF ABBREVIATION

3R	Recycle, Reuse and Reduce
BoD	Board of Directors
CAQDAS	Computer Assisted Qualitative Data Analysis Systems
CEO	Chief Executive Officer
CO	Carbon Monoxide
COO	Chief Operation Officer
CSR	Corporate Sustainability Responsibility
DSM	Demand Side Management
ELM	Energy Loss Management
ESG	Enterprise Strategy Group
ERL	Express Rail Link Sdn Bhd
FGD	Focus Group Discussion
GBI	Green Building Index
GDP	Gross Domestic Product
GE	General Electric
Gen Y	Generation Y
GLCs	Government-Linked Companies
GLICs	Government-Linked Investment Companies
GM	General Manager
HRD	Human Resource Department
IBS	Industrialized Building System
ICT	Information and Communication Technology
JKR	Jabatan Kerja Raya
KeTTHA	Kementerian Tenaga, Teknologi Hijau dan Air

LEED	Leadership In Energy and Environmental Design
LMX	Leader-Member Relations
LPG	Liquified Petroleum Gas
MD	Managing Director
MNCs	Multinational Companies
NEAC	National Economy Advisor Committee
NVivo 8	NVivo version eight
OIC	Organization of the Islamic Countries
Q & A	Question and Answer
R&D	Research and Development
R&R	Rawat dan Rehat
ROHS	Restriction of the Use of Certain Hazardous Substances
SMES	Small Medium Enterprises
SoP	Standard of Procedure
SRI	Strategic Reform Initiatives
UUM	Universiti Utara Malaysia
VP	Vice President
WEEE	Waste Electronics And Electrical Equipment

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Corporate strategies involving innovations are regarded as one of the mostly important factors affecting a firm's long-term development because innovation is the key activity that contributes to building core competitive advantage (Raza & Murad, 2014; Xu & Zhang, 2008). Different types of innovation may form the core in different enterprises and at different stages (Cheng, Yang, & Sheu, 2014; Menke, Xu, & Gu, 2007).

For years, the researchers have studied innovation in the areas such as **economy** (Black & Lynch, 2004; Cunha-E-Sa & Reis, 2007; Dasgupta, 2009; Dorf, 2001; Koa, 2007); **ethical motivation** (Henry & Vesilind, 2005), **international innovation** (Gassmann & Keupp, 2008), **innovation management** (Malaviya & Wadhwa, 2005), **organizational innovation** (Glynn, 1996; Jung, Wu, & Chow, 2008; Koc, 2007; Malik & Wilson, 1995; Sanidas, 2004; Stenberg, 2007; Tang, 1999), **knowledge management** (Faniel & Majchrzak, 2007), **technology innovation** (Armour & Teece, 1980; Cantisani, 2006; Galende, 2006; Huergo, 2006; Johnstone, Hascic, & Kalamova, 2010; MacLeod & Davidson, 2007; Teece, 2006; Wu & Sun, 2008; Zuleta, 2008), **technology transfer** (Jain, 2007), **business process design** (Pernici, Ardagna, & Cappiello, 2008), **corporate strategy** (Delbecq, 1985; Kodama, 2007; Magrini & Lins, 2007; Reinhardt, 1998), **organization environmental change**

(Damanpour & Gopalakrishnan, 1998), **technology management** (Amadi-Echendu, 2007), **innovation process** (Galanakis, 2006), **strategic outsourcing** (Hoecht & Trott, 2006), **process versus product** (Chen, Lai, & Wen, 2006; Damanpour & Gopalakrishnan, 2001), **technical versus administrative** (Daft, 1978; Gopalakrishnan & Damanpour, 2000), **disruptive versus sustainable** (Christensen, 2006; Pilkington & Dyerson, 2006), **innovation implementation** (Robertson, Sorbello, & Unsworth, 2008), **sustainability** (Slob & Verbeek, 2006) and **environmental** (Chen *et al.*, 2006; Henry & Vesilind, 2005; Stenberg, 2007; Wu & Sun, 2008).

Initiatives to prevent climate changes and global warming such as The Kyoto Protocol and Copenhagen Accord have identified the developing countries as primary responsible for the current high levels of GHG emissions in the atmosphere due to more than 150 years of industrial activity (Salahudin, Abdullah, & Newaz, 2013; UNFCCC, 2009). Due to this fact, the states that keep on ignoring the issue of climate change or deceitfully deal with this issue, soon there is a potential of stronger states will occupy the weaker ones in seeking of raw resources which will be limited as a result of global warming (**Ibrahim & Uke, 2013**). As the result, the economies will confront an extraordinary recession, and the world will be led into a systemic collapse and interruption of natural chaos. Salahudin, Abdullah and Newaz, (2013) report that Malaysian government has publicized its commitment in the endeavour to lessen the greenhouse emissions by complying to **Copenhagen Accord** and Kyoto Protocol. Furthermore, they recommend future study in Malaysia to point on the

alertness and best practice of the society for preserving the environment beside the impacts of the government policies on the interests of the environment itself.

The new concept named 'green' or 'environmental' is introduced and being used interchangeably. This 'green' concept is emerging as the result of the environmentalist activist organizations in the 1980's that have advocated the use of consumer pressure through boycotts of environmentally damaging products and through positive purchasing of green products, to influence what firms offer for sale, and, indeed, to influence their policies toward the environment overall (Bocken, Farracho, Bosworth, & Kemp, 2014; Green, Morton, & New, 2000). As a result, 'green' laws have been legislated worldwide to deal with health threats from contaminated air and water. Even a company that wants to enhance its sales, particularly in Europe, is thus forced to adopt within its management structure the principles of the ISO 14000 that covers environmental management systems, environmental auditing and related investigations, environmental labeling and declarations, environmental performance valuations, and life-cycle assessment (Henry & Vesilind, 2005; Kiron, Kruschwitz, Haanaes, & Velken, 2012; Salahudin *et al.*, 2013).

Among the green concept that has been popularized are **eco-innovation** (Triguero, Moreno-Mondéjar, & Davia, 2013), **clean technologies** (Jain, 2007; Slob & Verbeek, 2006), **corporate environmentalism or green organization** (Banerjee, 2002; Banerjee, Iyer, & Kashyap, 2003; Dowell, Hart, & Yeung, 2000; Green *et al.*,

2000; Hughes, Anderson & Golden, 2001; Moffat & Auer, 2006; Ulhoi, Madsen, & Hildebrandt, 1996; Wagner & Schaltegger, 2004), **green engineering** (Henry & Vesilind, 2005), **green technology** (Cunha-E-Sa & Reis, 2007; Faucheux & Nicolai, 1998; KeTTHA, 2010; Pernici *et al.*, 2008; Shrivastava, 1995; Tapaninen & Seppanen, 2009; Wu & Sun, 2008), **green computing and information systems** (Pernici *et al.*, 2008; Want, 2009), **green business and strategy** (Branzei, Vertinsky, & Zietsma, 2000; Edwards, 2008; Eiadat, Kelly, Roche, & Eyadat, 2008; Etsy & Winston, 2009; Hambrick, 1981; Henry & Vesilind, 2005; Kim & Rhee, 2009; Peters, 2008; Turner & McKnight, 2008), green ideas (Stenberg, 2007), **green legislation and regulations** (Managi, Opaluch, Jin, & Grigalunas, 2005; Sanchez & McKinley, 1998; Thamhain, 2009), **green innovation performance** (Chen *et al.*, 2006) **green intellectual capital** (Chen, 2008a; Vardiman, Houghston, & Jinkerson, 2006), **green image** (Chen, 2008b), **green product and process innovation** (Chen, 2008b; Kammerer, 2009), **green brand equity** (Chen, 2010), **green satisfaction and trust** (Chen, 2010), **green or environmental management** (Christmann, 2000; Cruz & Pedrozo, 2009; Vaccaro & Echeverri, 2010; Ziegler & Nogaredac, 2009), **green investment** (Emblemsvag, 2003; Heinkel, Kraus, & Zechner, 2001), **green consumption** (Gilg, Barr, & Ford, 2005), **green supply chain management** (Ho & Choi, 2012; Zhu, Sarkis, & Lai, 2007), and **green innovation** (Baba & Yarime, 1999; Chen, 2008b).

The motivations for adopting and diffusing green innovation are started by the movement at the international level, goes down to countries, communities and

organizations around the world. From the above discussion on the motivation for green innovation, top management has to face and accept green is the best solution for current issues in order for their business to grow and sustain.

Enterprise Strategy Group's (ESG's) research indicates 56 percent of corporate 'green' programs are champions by senior business leaders who keep one eye on the bottom line as they strive to be good corporate citizens where 70 percents of senior business decision makers use company-wide energy cost reductions as a major metric to track the success of their green initiatives, while 55 percent use cost reductions related to recycling (Turner & McKnight, 2008). Regardless of the industry, the majority of senior executives believe green business initiatives will have significant impact on the sustainability and success of their organizations over the next 20 years (Turner & McKnight, 2008).

Xu and Zhang (2008) state the companies controlled by state shares are more interested in investments in process innovations rather than product innovation even though the latter might contributes more to the firm's overall economic performance because of the rapid growth of state assets. In publicly traded companies with dominant state shares when the concentration ratio of stock ownership increased, firm strategies began to adopt more product innovations. Companies with a large concentration of state shares achieve better innovation performance due to their advantage of obtaining critical resources through the linkage to state ownership (Xu & Zhang, 2008).

For example, GLCs B as one of biggest GLCs in Malaysia believes its business success depends upon balancing the economic, social and environmental objectives as embodied in its Corporate Sustainability Framework. GLCs B makes a long-term commitment in 2007 through its Energy Loss Management (ELM) framework that sets out medium and long-term targets for reducing energy consumption and improving energy efficiency, including reducing greenhouse gas emissions, across its operations (Petronas, 2010).

Government-Linked Companies or GLCs are defined as companies that have a primary commercial objective and in which the Malaysian Government has a direct controlling stake. Controlling stake refers to the Government's ability (not just percentage ownership) to appoint Board of Director (BoD) members, senior management, make major decisions (e.g contract award, strategy, restructuring and financing, acquisitions and divestments etc) for GLCs either directly or through Government-Linked Investment Companies or GLICs (Berhad, 2010).

The study by Singh and Ang (1999) has found that efficiently managed GLCs, and well formulated and implemented strategies are critical for the success of business organizations. The government is managing GLCs effectively where GLCs' attention is divided between several goals that are attained not to harm the goal of wealth maximization which consistent with the government's aims of cultivating 'national champions' upon whom the country's economic fate depends on in the years to come (Lau & Tong, 2008).

Sheng and Tao (2006) conclude in their study that shareholders, senior managers, staff, users, competitors, government and other stakeholders actually play important roles in the innovation process. They affect the development and effectiveness realization of enterprise technology innovation. Top managers' leadership characteristics and styles could significantly impact an organization's creativity and innovative ability. Companies which delegate more autonomy to employees are less innovative due to factors of power distance, and balance between empowerment and specificity of guidance provided by the top manager (Jung, Chow, & Wu, 2003).

It is very important for GLCs to be led by the top managers whom leadership style can enhance the vision of the green organization operating in green business scenario. New leaders will continue to learn through a collection of experiences and exposure to new ideas and the flow of knowledge. While different types of innovation are common place such as breakthrough, sector and technological, most approaches will benefit from a social constructionist perspective that is linked to the establishment of various learning processes and innovative cultures (Murray & Blackman, 2006).

Henry and Vesilind (2005) have identified three primary driving forces behind corporate decisions to adopt green engineering and green business practices as legal concerns, financial concerns and ethical concerns. Engineers and managers should recognize the broad impacts their decisions may have, and that they should act in such a way that their actions will be in the best interest of not only themselves, their companies, and their companies' direct stakeholders, but also the broader society and

even future generations (Henry & Vesilind, 2005).

Compare to the technological green innovation, green business initiatives aim to reduce costs, improve the environment, and create new business opportunities by eliminating waste, conserving energy, reduce carbon footprints, and taking new approaches to the development and marketing of product and services. ESG's global survey of 1,000 business enterprise and IT executives find that the most widely implemented green business initiatives include efforts to reduce waste via recycling (90 percent), manufacturing or other business process changes to conserve energy and reduce waste (69 percent), and business partner and supply chain programs to promote energy efficiency (67 percent) (Turner & McKnight, 2008).

1.2 Research Problems

Nowadays all organizations are coping with the dynamic environment distinguished by fast technological change, brief product life cycles, and globalization especially the technology-driven companies that require to be additional creative and innovative to compete, grow, survive and lead (Stead and Stead, 2013). The awareness and commitment of top managers are crucial to support innovation by making the avenues for the non-traditional types of idea management and leadership as being stressed by Dombrowski, Kim, Desouza, Braganza, Papagari, Baloh and Jha (2007).

The effects of the environment on the organizational performance through admitting or declining products or services delivered are either in reaction to actual changes in

the environment or as a preventive act in expectation of changes in the environment. This indicates that the environment can lead to the organizational change that facilitates the adaption to changing environments in turn to sustain or boost organizational effectiveness (Damanpour & Gopalakrishnan, 1998).

The leaders of organizations should aware that innovation core competencies are not an indulgence because they are actually indispensable skills to produce and sustain the organizations' competitive differentiations and advantages. Stead and Stead (2013) find that the level of company's innovation can be increased when managers play their external roles as frontier spanning and entrepreneurs, and encourage relationships with outside institutions that offer technical and financial aid.

Businesses are above all things a collection of people and to be the best, the best people should be hired to create and nurture the best teamwork (Leighton, 2007). For the GLCs to sustain in the industry they are operated, they have to find ways to optimize the organizational innovation that can improve their organization competences. Green innovation adoption and diffusion have been actively done across the organizations throughout the world as mean to improve the quality, supply chain and working environment. However, it has very scarce empirical studies in the area of green innovation implementation on the context of the GLCs in Malaysia. Wal Mart, DHL, Microsoft and Toyota are among the giant companies in the world that give technological change as their high priority especially in their product supply chain to cut cost and reduce delivery time to the customers (Friedman, 2006). It is

green when considering fewer places for stocking when warehouses only keep things for a week. The products that are slower in sale will be replaced as soon as possible with the most saleable one. All the chains are linked with the latest information and communication technology (ICT) network where the headquarters can detect which colours or models are popular in which outlet sold by which persons. The points above ponder to see how the GLCs are dealing with their daily operations in the transportation, manufacturing, healthcare and services industries they are rendered.

GLCs managers are usually appointed from the ranks of senior civil servants and military officers being promoted on the basis of their performance and high quality but they are also been criticized for being too risk-averse and lacking sufficient entrepreneurial drive. A number of new senior executives brought into the GLCs from the private sectors and some from abroad subsequently also left before completing their contracts (Ramirez & Tan, 2004).

The perception of the top management is critical when implement the green innovation as it would change the culture through the vision they bring. As being handpicked by the Prime Minister, the top management has to operate with restriction power in some decision making due to political will, and this could jeopardize the performance and future of the organization directly, and the county indirectly if the top management cannot perform with the interest of the country and nation. Most of the studies are focus on the type and style of leadership in general, but very limited on the perception of the top management when dealing with green innovation

directives that stream to the organizational sustainability. The researcher wants to know the roles of the top managers in supporting the green innovation implementation and whether their leadership different from the traditional perspectives.

There is limited study on the top management perception that shapes their leadership in the Malaysian GLCs with respect to the green innovation context. Most of the studies done are to find the leadership styles related to the Multinational Companies (MNCs) performance (Tang, 1999), human resource issues (Stead and Stead, 2013), or technology management tools (Huergo, 2006), and practices in the organizations (Dombrowski *et al.*, 2007). The aim of this study is to promote innovation that reduces environmental impacts through waste minimization, thus moving us toward the goal of a minimal waste society (Norberg-Bohm, 1999), and understand how the top management accommodates their business model and strategies to the green surrounding.

Under NEAC's (National Economy Advisor Committee) recommendations, eight Strategic Reform Initiatives (SRIs) will be anchored with SRI 8 is to ensure the sustainability of growth by preserving our natural resources and safe-guarding the interest of future generations through complemented the sustainable public finances via stringent fiscal discipline (NEAC, 2010). This is where Green Technology plays a very significant contribution in terms of efficiency and investment. The category of green innovation implementation that determined in this study will be the additional key elements for the government to consider when choosing the top managers running

the GLCs that can fulfill the aspiration of making Malaysia to be fitted into the New Economy Model.

This study will look into in-depth the perception of the top managers, the green innovation implementation directives in the GLCs' perspective and the green technologies impact to the organizational sustainability that indicate the profit and loss of the companies. The main objective of the study is to contribute to the body of knowledge from the fieldwork and introduce own definitions of green innovation in terms of the GLCs' context.

1.3 Research Questions

The main focus of this study is to explore the top management perception when they lead their companies to adopt organizational green innovation concept in their innovation implementation.

Therefore, the questions to cover the anticipated needs for the information above are:

- 1.3.1 How green concepts impact the innovation implementation in the company and who are responsible and accountable for being the change agents? How top management perceive green innovation and what shape their leadership?
- 1.3.2 Which category of innovation is widely adopted and diffused in the company? What is the significance of green innovation implementation to the organizational sustainability?

The researcher has the opportunity to understand the green innovation implementation and impact in the organization from the top management's point of views. With diversity in the types and context of GLCs' businesses, the top management will face different leadership challenges and adept to suit their business demands. These leaders will be rotating in leading the GLCs and they need to have the ability to be able to learn fast and perform significantly. This is where the top management competencies are critical in order to justify their suitability to be chosen to lead different GLCs.

It is an embedded multiple case studies with triangulation of many ways of data collection methods and medium to avoid biasing and increase the validity, conformability and verification. Generalizability will be the issues of this study's finding because it might not be applicable to all GLCs in other countries beside Malaysia.

1.4 Significance of Study

The companies which drive sustainable innovation no doubt can have advantages such as more viably differentiated merchandises, speed up product dispensing and time-to-market, recognizing prospects in new markets for their present technologies, decreased product deficiencies, upgrade product quality and increase consumers' responsiveness and amplify productivity by enhancing the power of existing knowledge (www.inventionmachine.com, 2010).

In achieving the above, the leaders in the companies must understand the innovation and challenges due to the environments they are operating especially in the green directives. In their study to develop a framework for examining leadership in extreme contexts, Hannah, Ullrich, Avolio, and Cavarretta (2009) notice the importance of leadership dynamic study has on the reliably successful performance in extreme events where leaders cannot jeopardize the future of the organizations with their wrong judgment in decision making. With respect to this study where current global economic challenges and environmental critical issues are the extreme contexts, top management of Malaysian's GLCs can adopt and diffuse green innovation in their businesses strategies in order to keep their businesses sustain and success. Due to the constraints and contingencies in green innovation contexts, it will grant further confirmation on the validity of assumptions and boundaries of current models of leadership (Hannah *et al.*, 2009).

From this study findings, it is the intention of the researcher to introduce additional building blocks that contribute to future theory-building and research in having a better knowledge about the perception of top management in green innovation implementation that enlighten a significant gratitude of the mechanisms and ontology of leadership study and impact in green innovation. With highly motivation to opt for 'green' around the world, the role of top management is very critical in bringing the organization to become green organization. New business paradigms and models can only be initiated if top management has the appropriate perception and understanding

that sense the competitive advantage of green innovation implementation over their business competitors.

Green Technology has created new jobs and reducing others such as more bills can be paid online and this will reduce the jobs of the person at the bank counter. Knowledge workers are using portable ICT (information and communication technology) tools such as i-Phone and Blackberry to send emails, check the news, and have meeting over the line with colleagues from different continents with different time zones. Green Technology not only makes information travels faster but decision and action by the right authorities such as top managers can be taken appropriately and concurrently with the situation happening everywhere the organization is operated.

With increase in number of people to be served every year, the GLCs need to take more aggressive role in championing green innovation through their Green Technology adoption in the administrative and technical operations levels.

1.5 Definition of Terms

Definitions of terms used are tentative because of the inductive, evolving methodological design in qualitative study where theme may emerge through the data analysis (Creswell, 2009, p.40):

Top Management : The senior executives levels who held post as the leaders of the GLCs, and head of departments who established policies, programmes, budgets, and reward systems to guide and control organizational members.

Green Innovation Implementation : Green is referred to the environmental elements consideration in any companies' activities especially in processes, products and services they are involved.

The 'green innovation' concept in this study refers to the activities adopted by the organizations towards their organizational sustainability through innovation that will save money, reduce delivery time, optimize the resources and preserve the environment. The green innovation is practiced in communication, product design and improving the process of performing tasks in the administrative, support, operational and technical departments across the organizations.

The outcomes of the implementation are to minimize production waste and increase productivity, improved corporate images, and received corporate competitive advantages under the trends of popular environmentalism consciousness of consumers and severe international regulations of environmental protection. This is necessary because the industrial greening process or environmental self-regulative approach can be seen as a very important new industrial trend

Government-Linked Companies, (GLCs) : These companies are controlled by the Malaysian government via the Federal Government-Linked Investment Companies (GLICs). The main purpose of the establishment of the GLCs is to become the Malaysian government's arm in economic development. They contribute 36 percent of the market capitalization of the Malaysian stock market by involving in big capital ventures such as transportation, healthcare, logistic, oil and gas, automotive industries, construction and financial. Obviously, GLCs have a significant role in the development of the country's economy.

1.6 Scope of Study

Today, ASEAN countries are facing the big challenge of organizing and maintaining

their relationships within strategic alliances, by leveraging their resources under conditions of competition or cooperation, as the much larger and rapidly growing regional economies of China and India continue to rise in power (Wang & Chien, 2007). For that reason, not only the market forces and the government, but alongside the involvement and commitment from the corporate sector, multinationals, civil society, non-government organizations, local community-based institutions, religious institutions, educational institutions, households and individuals together can play a measurable positive role to scale up the action to meet climate challenge (Roy & Pal, 2009). Green, cost and profitability are not mutually consistent defining moment when relating the economy typical x-inefficient (economic agents) in production or technological change if it is independent of environmental regulation (Altman, 2001).

As the result, the government policy will have different effects on technological change depending on the information and knowledge possessed by government from the industry feedback (Baba & Yarime, 1999) especially on the green innovation implementation exercises in their organizations. The ongoing process of industrial readjustment towards a more environmentally-sustainable development is one of the most profound changes that business will undergo over the next few decades (Ulhoi *et al.*, 1996). Wang and Chien's analysis (2007) has determined that Singapore and Malaysia have higher performances on both technology development and economy performance relative to other ASEAN countries. It is the desire of the Prime Minister, where by adopting the green innovation concept, the companies in Malaysia especially the GLCs can grab the benefit offered by the Malaysian government

through the commitment to preserve the environment that give advantage to companies to compete with other international companies (Salahudin *et al.*, 2013).

Green innovation has been studied in the context of the public organization (Naranjo-Gil, 2009), the Small Medium Enterprises (SMEs) (Chen, 2008a, 2008b; Lee, 2009; Triguero, Moreno-Mondejar & Davia, 2013), the Multi-National Companies (MNCs) (Porter & Linde, 1995), banking sector (Damanpour & Gopalakrishnan, 2001), automobile industry (Lin, Chen. & Huang, 2014), and fashion industry (Ho & Choi, 2012) but very limited in the GLCs. Hence, the researcher is interested to study the green innovation implementation in the Malaysian GLCs and understand the issues inductively.

Malaysian GLCs are being established to achieve a balance across political, economic and social goals in expediting the country to become a developed nation through some actions and strategies. In achieving some of these goals, assessing only the financial aspects of GLCs' performance does not give a complete picture of GLCs' achievements because the importance of non-financial performance, the challenges associated with defining, measuring and using non-financial indicators remain unresolved. This research exploring how best to assess the non-financial aspects of GLCs' performance in light of the significance of GLCs' political and social obligations, which do not necessarily lend themselves to financial evaluations (Lau, 2013) that are the top management leadership style attributes where their perception is

so critical toward the impact of green innovation implementation on the industries sustainability.

This study covers the GLCs in Malaysia that implement green innovation in their strategies, administrative and technical operations across their organizations. The focus will be on the green innovation where technology as the tool to initiate the technological change in the GLCs and how this has mould the top management perception to suit to this change. The leaders' perception might need to be transformed from their usual way of bringing themselves, the way they think and how much they need to relearn and learn new skills to gain knowledge and be competent in order to perform their leadership functions and roles.

Through employing embedded multiple case studies in this study, the researcher has the opportunity to understand the green innovation implementation and impact in the organization from the top management's point of views. With diversity in the types and context of GLCs businesses, the top management will face different leadership challenges and adept to suit their business demand. These leaders will be rotating in leading the GLCs and they need to have the ability to be able to learn fast and perform significantly. This is where the top management leaderships are critical to justify their suitability to be chosen to lead different GLCs.

This is an inductive qualitative study to explore how the green innovation implementation has impact on the top management perception. With different types

of business ventures and setting in the GLCs, this mode of research inquiry seems to be suitable. It is an embedded multiple case studies with triangulation of many ways of data collection methods and medium to avoid biasing and increase the validity, conformability and verification. Generalizability will be the issues of this study finding because it might not be applicable to all GLCs in other countries beside Malaysia.

1.7 Organization of Thesis

This Chapter explains the background of the study, the problem statements pertaining to the study, the research questions and its objectives, why the study is significance, and the scope of the study.

Next is Chapter Two, which holds a literature review that focuses on how leaders influence organizational innovation. It draws upon relevant literature from: (a) leadership theory, in particular how leaders influence innovation; (b) organizational theory, including how the organization's social environment (culture and climate) impacts innovation; and (c) literature on organizational innovation. Chapter Three grants a description of the proposed methodology and addresses: (a) proposition development; (b) overall approach and rational; (c) participants and sites selection; (d) data gathering procedures; (e) data analysis procedures; and (f) considerations for quality such as validation and reliability, verification, ethical considerations and methodological limitations.

Chapter Four reports the inherent in doing qualitative case research is systematic organizing and bracketing of data that obtained from multiple sources such as based on interviews, field observations, and electronic and traditional publications from the company and external authors in order to provide validity and authenticity (a basis for trust) (Stake, 1995). Conclusively, Chapter Five presents a discussion based on the findings of the data; it identifies some of the specific and general conclusions, states the limitations of the study, and provides recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explains the past studies of innovation in a various fields and how innovation definitions have evolved into different context especially with regard to the environment. Through the environmental perspective, green concept is introduced where it has been the focused of this study. The researcher shows the influence of environmental issues on innovation and how the concept of green innovation is emerged, has impact on organizational sustainability and how it gives competitive advantage to the companies. This study then relates the role of executives in green innovation implementation in the companies by looking at the previous study on top management in the innovation development perspective, and the function of top management in group project. Previous studies on Top Management and their leadership styles guide the researcher to come up with the conceptual framework of the study.

2.2 Definition of Innovation

The innovation theorist, Joseph Schumpeter, states that the economy development should be considered as a process of qualitative change that driven by the innovation which took place in historical time (Fagerberg, Mowery, & Nelson, 2006). Furthermore, in the scope of organizations, Todtling, Lehner, and Kaufmann (2009) believed their understanding of innovation could be increased by simultaneously

investigating factors that provided organizations with an incentive for innovation and variables that determined organizations' ability to change.

Innovation has been defined by many scholars and practitioners with respect to their contexts. Therefore, there exist some similarities and slight differences in the definition (Keskin, Diehl, & Molenaar, 2013).

Schumpeter refers innovation as new products, new methods of production, new sources of supply, the exploitation of new markets, and a new ways to organize business (Fagerberg *et al.*, 2006, p. 6). On the other hand, Christensen (2006, p. xvi) views the innovation as a change in the technology processes by which an organization transforms labor, capital, materials, and information into products and services of greater value. To him, the concept of technology therefore extends beyond engineering and manufacturing to encompass a range of marketing, investment, and managerial processes. In addition, Naranjo-Gil (2009) defines innovation as any practice, process, product or service which is new to the environment of the organization. For that reason, he suggests the practice is required to be different than current or past practices of that organization, and not extensively used by other organizations in the environment.

Nowadays, the concept of innovations are combination of the intangible, technical changes and non-technical changes such as not only the mobile phones features (hardware) but a new way of paying for mobile telephony services (intangible /

business model) (Berkhout, Hartmann, Duin, & Ortt, 2006; Dimitrios, Sakasa, & Vlachosa, 2013). Like education, innovation cannot be viewed as a single event because the market research results frequently produce negative reactions to discontinuous new products (innovative products) that later become profitable for the innovating company (Avery & Bergsteiner, 2011; Trott, 2001).

Many researchers have been studying innovation in the sets of contrasting types such as product versus process innovations (Chen, Lai, & Wen, 2006; Damanpour & Gopalakrishnan, 2001; Keskin *et al.*, 2013), sustainable versus disruptive innovations (Christensen, 2006, p. xviii; Kiron, Kruschwitz, Haanaes, Reeves, & Goh, 2013) and administrative versus technical innovations (Carrillo-Hermosillaa, Ríob, & Könnölac, 2010; Daft, 1978).

There are limited studies to identify the factors that determine organizations' need for and ability of these innovations in firms (Yu & Tao, 2009). For this study, the researcher is focusing on the implementation of the 'green' technical innovations and 'green' administrative innovations because the understanding of why some organizations adopt these innovations and others do not are incomplete (Naranjo-Gil, 2009; Yu & Tao, 2009). According to Daft (1978), the technical innovations are related to the production process that include processes and technologies used to produce products or render services related to the basic work activity of a firm. The administrative innovations are related to the managerial procedures, administrative processes and rules of the organization (Daft, 1978).

In the area of technology and innovation, the studies conducted by us also find it natural to apply a system perspective rather than to concentrate on the individual invention/innovation (Fagerberg *et al.*, 2006, p. 6).

2.3 Influence of Environmental Issues on Innovation

Since the late 1980s, environmentalist activist organizations have used consumers' pressure to influence what firms offer for sale and their policies toward the environment overall through boycotts of environmentally damaging products and through positive purchasing of green products (Green *et al.*, 2000; Hallstedt, Thompson, & Lindahl, 2013). The rise of international environmental regulations, such as Montreal Convention, Kyoto Protocol, Restriction of the Use of Certain Hazardous Substances in EEE (RoHS), and Waste Electronics and Electrical Equipment (WEEE), and including the popular environmental consciousness of consumers have brought significant impacts to businesses in the world (Chen *et al.*, 2006; Salahudin *et al.*, 2013). Ulhoi, Madsen and Hildebrandt (1996) insist that economic sustainability could no longer be achieved without ecological sustainability. Furthermore, Lee (2009) believes that in the long term, sustainability issues will become critically important factors for corporations to consider for their survival and competitiveness. More to the point, environmental innovation strategy is found to be associated with firms' positive business performance (Eiadat, Kelly, Roche, & Eyadat, 2008; Kiron *et al.*, 2013).

The economy and society depend on the natural resources (Etsy & Winston, 2009; Keskin *et al.*, 2013). The quantitative evidence of energy consumption and emission outcomes across cultures and countries has been presented through the lifestyles choice, energy use and emissions (Roy & Pal, 2009). The amount of energy and raw materials available to man is limited by the level of energy technology and the level of demand in society (Ulhoi *et al.*, 1996). Technological change alters the nature of the marketplace by changing the relative cost, features and availability of products. Rapid technological change leads to rapid product introduction and hence to rapid product obsolescence (Carrillo-Hermosillaa *et al.*, 2010; Krell, 2000). As the result, industry is becoming increasingly focused on short-term financial gains, often with damaging consequences for both the environment and the long-term economic performance of businesses (Emblemsvag, 2003). On the contrary, companies should not panic or overact as these environmental trends could be turned into the momentum that drives them to carry out green intellectual capital and thus create competitive advantage (Chen, 2008a).

The concept of good environmental management determined by Schaltegger and Synnestvedt (2002) is characterized by being able to exhaust the economic benefits and cost saving of environmental protection measures. It is also able to identify the optimal amount of environmental protection to realize the maximum of economic success. This is where the lifestyle change is a complementary call for a continuous effort encompassing spread of awareness of sustainable lifestyles, energy concerns, building of synergies between policy, regulation, technology, market force and ethical

imperatives (Roy & Pal, 2009). With current consumption levels of non-renewable energy resources and present exploitation techniques, there is a risk of breaching the upper limits of nature's capacity to absorb the consequences of all this. As a result, it will no longer be technology which limits the quantity of raw materials available to society but the 'new' limits will be set by nature's own carrying capacity (Ulhoi *et al.*, 1996).

Sustainable growth only comes if organizations and human alike gain from it (Emblemsvag, 2003). Companies see their obligation in the corporate ecological responsibility as crucial as the corporate social responsibility. These initiatives include the changes to the firm's products, processes, and policies such as reducing energy consumption and waste generation. They use ecologically sustainable resources and implementing an environmental management system (Bansal & Roth, 2000). Any attempt to reduce levels of consumption as part of a program for global environmental improvement needs to consider two things: consumption by organizations and the innovation activities of organizations especially their ability to develop new products and processes (Green *et al.*, 2000).

According to Emblemsvag (2003), there is no market thrust towards sustainability as there is no green 'invisible hand'. To make the 'invisible hand' green, we must design a reliable, comparable and generic environmental impact measure with similar characteristics as money to save us from the undesirable results of the first industrial revolution (Emblemsvag, 2003). Consumers first make choice of their lifestyle and

consequently generate energy outcome. The changes can be achieved through voluntary actions, policy intervention or regulation (Roy & Pal, 2009). Voluntary action may not work fast enough because of the entrenched social and structural barriers to individuals adopting low carbon lifestyles, while forcing people to be green is politically unpopular, undemocratic, and ultimately unlikely to change values and lifestyles in the long term (Ockwell, Whitmarsh, & O'Neill, 2009).

In search of the sustainability of capitalism in the twenty-first century, some leading companies are beginning to take strategic voluntary actions vis-à-vis global environmental issues (Baba & Yarime, 1999). Forcing people to be green and fostering voluntary grassroots engagement have their limitations (Ockwell *et al.*, 2009). With regard to any policy, the market mechanisms for the greening of organizations and of product innovation can be just as problematic as other mechanisms, whether these be tighter regulations or changes in management values (Green *et al.*, 2000).

While traditionally entrepreneurs firmly believe in industrial progress achieved by the market mechanism, under this new green scheme they must first ensure the 'greenness' of their products (Baba & Yarime, 1999). The greening of innovation requires attention to these internal company management and organizational issues as much as it does to the public policy issues over regulations. For both private and public sectors, Green *et al.* (2000) suggest that green supply practices need to be implemented. Without proper attention given to organizational consumption,

initiatives from green organizations, industries and the economy will have limited success (Green *et al.*, 2000). Top-down policies like green taxes or regulations only influence action at a superficial level and they do not properly engage the public in the issue at hand. Once the tax or regulation is removed, people might revert to their former (often self-interested) ways of behaving although it can be argued that this is not a concern if regulations are kept in place (Ockwell *et al.*, 2009).

2.4 Green Innovation Concept

The life styles and human behaviours have to change in order to adapt with the 'green' (Emblemsvag, 2003; Krugman, 2010; Ockwell *et al.*, 2009). In the case of reducing emissions of carbon, it requires people to change their behaviour in many different ways, some of them impossible to identify until they have a much better grasp of green technology (Krugman, 2010). People can choose to walk, cycle, use public transport, buy more efficient cars, turn off lights, use energy-efficient light bulb, recycle, compost organic waste, and less travel (Ockwell *et al.*, 2009). One of the green innovation initiatives is low carbon social innovation which people collectively adjust their behaviours to share and benefit from certain achievement such as car pooling (Ockwell *et al.*, 2009).

Government regulations directly affect the selection of projects that an organization will pursue (Green *et al.*, 2000). Empirically, almost all innovative products or processes development in organizations that are undertaken for environmental reasons are stimulated either by government regulations or by what is labeled as market

demand (Green *et al.*, 2000). The government can enforce 'green' to people by introducing strong legislation in several areas such as transportation, where regulation can be an effective option for reducing carbon emissions (Ockwell *et al.*, 2009). Though there are indirect regulatory constraints in the business operation, an organization innovates to anticipate its customers' demands for more environmentally friendly products (Green *et al.*, 2000). It has been noticed that the core topic of the corporate environmental management literature for some years is the association between being 'green' and being an economically successful company (Schaltegger & Synnestrvedt, 2002). However, Roy and Pal (2009) state that the adoption of new technology (such as the purchase of an energy-saving appliance) may not essentially result in energy savings. The companies should learn from economics and cost management before reengineer some economic concepts to introduce entirely new 'environmental' concepts (Emblemsvag, 2003).

In order to eliminate the problems of environmental pollution, the concepts of environmental management, such as green management, green marketing, green production and green innovation (Chen, 2008b), and also green intellectual capital (Chen, 2008a) are now being pursued. Green is also always being associated with technology or popularly known as 'green technology' (Gabriel, 2008; Insight, 2013). According to Lee (2009), there are two drivers to adopt green management: internal and external. The internal drivers are to reduce the ratio of employee turnover due to harsh working environment, solve the wastewater treatment problem in cone paper process and the water quality from the wastewater treatment, and to reduce

environmental costs. The external drivers are to comply with stringent environmental regulations, respond proactively for customer 'green' demands, and increase 'green' competitiveness for overseas markets.

The 'green innovation' concept in this study refers to the activities adopted by the organizations towards their organizational sustainability through innovation that will save money, reduce delivery time, optimize the resources and preserve the environment. The green innovation is practiced in communication, product design and improving the process of performing tasks in the administrative, support, operational and technical departments across the organizations. This is necessary because the industrial greening process or environmental self-regulative approach can be seen as a very important new industrial trend (Lin *et al.*, 2014; Ulhoi *et al.*, 1996).

2.5 Impact of Green Innovation on Organizational Sustainability

The relationship between environmental effort and profit depend on the regulatory rule in a country, the cultural setting, customer behaviour, the type of industries or size of companies analyzed, and the time span (Lin *et al.*, 2014; Schaltegger & Synnestvedt, 2002). Institutionally, there is a need for focused action by business corporations, educational institutions and welfare-oriented institutions, which include religious, non-governmental, government and civil societies (Klewitz & Hansen, 2014; Roy & Pal, 2009). In any case, the quality and impact of corporate environmental management depend on how well it complements the specific company situation and its market, political and social circumstances (Schaltegger &

Synnestvedt, 2002). Krell (2000) recommends that different types of organizations are needed to deal with different types of environments because as environments change, so must the organization. The more rapidly changing in the environment, the more dynamic and flexible the organization must be. One of the main forces for change in today's environment is the rapid development, dissemination and adoption of new technology (Krell, 2000). Lee (2009) insists that customers' demands such as proof of the 'greenness' of manufacturers and their products as a part of procurement contracts, is another important factor influencing the adoption of environmental management. As a result, companies respond proactively to gain ISO 14001 certification for customer requirements (Lee, 2009).

The concept of corporate sustainability raises the impacts on the nature of firms' operations (Lee, 2009). Porter and Linde (1995) inform that many multinational companies have accepted that the three principles of sustainability, i.e. economic prosperity, environmental integrity, and social equity, are consistent internally. According to Lee (2009), previously the positive economic performance is assumed to ensure corporate success by companies and its shareholders. Yet, now business growth is led by the so-called triple bottom line where economic and financial results need to be accompanied by the minimization of ecological footprints and increased attention to social aspects (Lee, 2009). This is also supported by Eiadat *et al.* (2008) findings that an environmental innovation strategy and firms' positive business performance are positively linked.

As more companies recognize sustainability as an important strategic issue, developing strategic plans becomes another significant mission for companies to retain their competitiveness (Lee, 2009). Green *et al.* (2000) evoke that the organizations are able to counter the demands or pressures from their customers for more environmentally friendly products by ensuring sale department influences the customers' demands for the organizations to reconsider the product and/or the production processes. This follows by the effectiveness of the organizational relationships between the sale and marketing department with Research and Development (R&D) department to produce environmental product with affordable quality and price. Lastly, the R&D department has the capabilities to respond to the environmental issues requests (Green *et al.*, 2000). Again, the result of study of Eiadat *et al.* (2008) indicates that the final effect of any environmental policy on firms' business performance only effective when the environmental innovation strategies are triggered within organizations (Eiadat *et al.*, 2008).

Nowadays, companies should exploit popular concerns about environmental issues to position their brands to obtain new differentiation advantages in new market (Chen, 2008b). Leading companies are layering environmental, or green, factors into their corporate strategies – spurring innovation, creating value and building competitive advantage (Etsy, & Winston, 2009, p. 4). Vaccaro and Echeverri's (2010) study shows that 'perceived' environmental transparency matters in customer-firm relationships where customers' willingness to undertake pro-environmental actions in

collaboration with a firm is actually affected by their perception of the firm's environmental transparency.

Green images are important for companies especially under the trends of popular environmentalism consciousness of consumers and severe international of environmental protection (Chen, 2008b). Greener firms can be more productive than polluting firms and greener economies might generate higher levels of per capita output than polluting economies although both green and polluting firms can be cost competitive and profitable (Altman, 2001). To attain and maintain a competitive position in the market, the development of new and/or high technology must go beyond merely technical and commercial dimensions. It must explicitly integrate ecological considerations as well (Ulhoi *et al.*, 1996).

Therefore, to enhance their green brand equity, companies should incorporate the ideas of green brand image, green satisfaction, and green trust into their long-term environmental strategies in the stage of strategy planning (Chen, 2008b). The motivational factors to adopt environmental management are one of the key issues to understand why SMEs move toward greener management reactively or proactively (Lee, 2009).

Roy and Pal (2009) have stated that many authors have supported the critical role of business corporations as one of the most powerful institutions and trend setter in the current socio-economic structure. This is done by shifting orientation from immediate

to long-term human well being (Roy & Pal, 2009). There exists a demand in management fields to anticipate and plan for environmental concerns and incorporate this thinking into corporate strategies (Chen, 2008b). If a leader personally holds pro-environmental values and perceives his/her organization as environmentally committed, the organization is more likely to adopt responsive environmental strategies and innovations (Branzei, Vertinsky, & Zietsma, 2000).

The SME considers the quality of products in terms of environmental and economic perspectives as the key success factors for their future business (Lee, 2009). No doubt that the movement towards green innovation will benefit companies and their staff by making and consuming less pollution products, and simplified the working processes. This has clearly brought the benefits to the organizational sustainability. On the other hand, there is limited study on the GLCs on their green innovation implementation directives. It is the aim of the researcher to study how the GLCs make appropriate green innovation adaptation and diffuse it across the stakeholders and companies. With satisfaction from the stakeholders, the companies can grow and sustain their businesses.

2.6 Competitive Advantage Driven by Green Innovation

In many cases, environmental issues influence both costs and income of a company and hence have a more or less direct influence on the economic success of a company (Schaltegger & Synnestvedt, 2002). In Korea, systematic green management reduces water demand by 21 percent, wastewater generation by 16 percent and minor material

usage by 13 percent. As a result, overall production costs are reduced by 494.5 million Korean won (Lee, 2009). Corporate environmental effort has an impact on the economic success and thus the enterprise value (Schaltegger & Synnestvedt, 2002). The organizational longevity faces problem is either due to failure in managing the internal processes or failure to adjust interaction in the face of change in the external environment (Krell, 2000).

Bansal and Roth (2000) explain in their corporate ecological responsiveness model that the three basic motivations for ecological responsiveness are competitiveness, legitimating and ecological responsibility. Competitiveness is defined as the potential for ecological responsiveness to improve long-term profitability. Legitimating is directed toward complying with the institutional norms and regulations. Lastly, ecological responsibility is viewed as a motivation that stems from the concern that a firm has for its social obligations and values.

In relation to Eiadat *et al.* (2008), a source of competitive advantage is provided by product differentiation on environmental performance, and it's signaling to consumers via the media and labeling. If a company can state that it has developed its environmental innovation strategy as a response to stakeholder demands, it will be able to sell its products at higher prices (Eiadat *et al.*, 2008). For companies in a competitive market where environmental protection is important, it is thus reasonable to assume that the relation between environmental and economic performance depends on the kind of management activities, strategies and concepts and whether

they are applied correctly in the right situations rather than on any mechanistic causal link (Schaltegger & Synnestvedt, 2002).

Green *et al.* (2000) discovers that organizations receive the environmental demands from their customers and regulators. The regulators' legislation affects the users as the customers because only a few large proactive final-consumer-oriented organizations are developing environmentally superior products as a matter of business strategy. The firms that invest efforts in environmental management can avoid the protests or punishment about environmental protection and at the same time improve their corporate images by developing new market to increase their competitive advantage (Chen, 2008b). There is a need to reduce the throughput of energy and materials flowing through the chain from extraction to production to packaging, transportation, sale, consumption and disposal (Roy & Pal, 2009).

Chen's analysis (2008b) uncovers that green core competence, green product innovation performance, and green images of SMEs are all significantly less than those of large enterprises in the information and electronics industry in Taiwan. The empirical results of his study on the competitive advantage shows that the three types of green intellectual capital – green human capital, green structural capital, and green relational capital – are positively correlated to competitive advantages of firms (Chen, 2008a). The more companies concentrate on the three, the stronger the competitive advantages of the firms. Green relational is more significant compared to green human capital and green structural capital due to the interactive 'green relationships'

with their upstream suppliers, downstream clients, and strategic partners (Chen, 2008a).

In studying the Korea Omyang company, Lee (2009) proves that successful adoption of green management produces a number of financial and non-financial benefits as a source of competitive advantage. Generally, environmental impact assessment provides a quantified environmental management measure as a basis of environmental improvement for present and future operations. More importantly, superior environmental performance contributes to economic performance through sales increase. For strategic business interests in overseas markets, Lee (2009) discovers that achievement of ISO 14001 brought a huge benefit for marketing activities. After obtaining ISO 14001 at the Korea Omyang production sites, the newly contracted overseas sales increased about 30 percent in Japan and the US. Besides, the organizational learning process is systematically settled down during the experience of gaining ISO 14001, and employee attitudes of green management became positive. Consequently, the internal resistance to change for transforming greener operations and production is substantially decreased. The superiority of environmental and economic performance for the Korea Omyang helps the board of directors and member of staff to keep their 'green' management in operations and continuous environmental improvement activities (Lee, 2009).

Porter and Linde (1995) suggest companies can handle lenient regulation incrementally that stimulate 'end-of-pipe' or secondary waste treatment investment

responses. Environmental regulation, therefore, needs to be stringent enough to promote real innovation. In a world where pollution levels are increasingly critical, any environmental incident may tarnish a firm's reputation in addition to subjecting it to substantiated legal costs and fines. Low reputation is associated with financial loss that impedes firms from protecting its competitive advantage (Eiadat *et al.*, 2008).

With the initiatives provided by the government of Malaysia in the 2010 Malaysia Green Forum such as tax deductions for contributions toward environment funds, and green technology soft loan scheme to encourage the exploration of green technology and practices (Karim, 2010), this is definitely a very interesting topic to be studied in the context of GLCs in Malaysia in understanding their green innovation directives and the impacts to the organizational competitiveness.

2.7 Role of Executives in Green Innovation Implementation

Social scientists always connect the important role of consumers either individual, corporate or government to an economy (Roy & Pal, 2009). Thus, for the organizations' perspective, by recognizing the importance and usefulness of innovations that affect the technical system and also the social system of the organization, executives are advised to formulate the structural and human resource strategies along with the technical strategies (Naranjo-Gil, 2009). Stakeholders, perceived by their level of importance to organizations, are found to have no statistical impact on firms' decisions to adopt an environmental innovation strategy (Eiadat *et al.*, 2008). It is also true for the government environmental regulation

where, perceived by its level of stringency, flexibility, clarity, and appropriateness for a country's circumstances, it is found to have a negative and statistically significant impact on the adoption of environmental innovation strategy (Eiadat *et al.*, 2008).

Thus, the superiority of environmental and economic performance can be achieved by developing efficient organizational structure, technological innovation and human resources (Lee, 2009). Rapid technological change demands at the same time that a workforce be highly skilled, sometimes in specialized areas, and yet highly flexible, if an organization is to continue to use the same workers (Krell, 2000). Low-carbon behaviour of employees should be rewarded rather than more work and less home time. CSR can be redefined as 'Corporate Sustainability Responsibility' rather than narrow domain of corporate 'social' responsibility (Roy & Pal, 2009).

In examining the organizational and environmental factors using a combination of survey and archival data in public sector organizations, Naranjo-Gil (2009) has come across that high adopters of technical and administrative innovations are more sensitive to environmental factors than organizational factors. Organizations that combined technical and administrative innovations increased their performance. He also provides evidence that organizational and environmental factors have inconsistent effects on the adoption of technical and administrative innovations. Both types of innovations must fit well with each other to facilitate organizations perform optimally (Naranjo-Gil, 2009). These results are in line with Damanpour and Gopalakrishnan (2001) who find that high-performance banks adopt product and process innovations more evenly than low-performance banks.

Managers should continue to search for win-win solutions to their environmental problems (Eiadat *et al.*, 2008). Managerial qualities, materialized both by the choice of environmental profile and way how economically a certain profile can be achieved by determining the link between environmental and economic performance (Schaltegger & Synnestvedt, 2002). The study of Branzei *et al.* (2000) as well confirms that managerial personals and corporate commitment are conducive to eco-sustainable practices. If organizational members see and believe that the organizational is committed towards the natural environment, pro-environmental strategic choices and practices will follow. Managers who want to encourage the introduction of innovation to improve organizational effectiveness need to recognize situational factors of development of both administrative and technical innovation (Naranjo-Gil, 2009). These types of managers with positive environmental concerns are found to be sufficient to trigger firms to adopt an environmental innovation strategy (Eiadat *et al.*, 2008).

Lee (2009) agrees that corporate executives and decision makers face difficult choices with regard to sustainability. Among the major management implication is that companies should be able to determine in which circumstances, if at all, the adoption of an environmental innovation strategy is needed (Eiadat *et al.*, 2008). Green sustainability and corporate responsibility have become increasingly important strategies issues for companies in most industries. Leading manufacturers in Europe, the USA and Asia have begun to emphasize 'green' and 'sustainability' in their internal business processes, to external stakeholders, and in investor relations (Lee, 2009).

Leaders establish policies, programs, budgets, and reward systems to guide and control organizational members. As the result, the leaders of the organization who are committed to the environmental protection develop more environmental plan and environmentally-oriented organizational structures (Branzei *et al.*, 2000). In an increasingly competitive market, the management of environmentally sustainable technology has become a dominant factor in the continued viability of the individual corporation (Ulhoi *et al.*, 1996). Furthermore, CEOs can lead the organizations from the current instrumental purposes of environmental management that aimed simply at increasing corporate financial performance, towards a predominantly normative orientation, which focuses on the long-term eco-sustainability of organizational practices (Branzei *et al.*, 2000).

Senior management should encourage their environmental managers to channel their concern or passion in a way that benefits the organizations. Senior management can hopefully deduce from this finding that it is in their own best interest to adopt environmental innovation strategies as such strategies are important to their companies' ability to enhance performance (Eiadat *et al.*, 2008).

2.8 Research on Leadership in Innovation Development Perspective

It has been acknowledged that there are three groups of research interest with regards to leadership in the perspective of innovation development: firstly, direct studies that focus on leadership theories and behaviours; secondly, features of the organizational ambience that may be attributed to the leaders, and thirdly, informal organization that

be made up of functions carried out by leaders (Elkins & Keller, 2003; Farris, 1988). In order to determine the potentially useful directions for this study, the researchers review the empirical literature on leadership in innovation development organizations within these three groups with some suggested propositions and research strategies.

2.8.1 Functions of Leadership

In the innovation development context, Farris (1988) has suggested that a number of leadership functions are vital especially due to idea generating, project leading, sponsoring / coaching, gate-keeping, and entrepreneuring / championing (Roberts & Fusfield, 1981). During idea-generating process, new ideas are developed and tested along with the creative problem-solving. The leader needs to coordinate and motivate the team members while organizing projects. At some point in sponsoring/coaching, the leader has to bestow guidance and upgrade team members' capabilities. Each of these responsibilities focuses mainly on leadership behaviours contained by a project group. On the other hand, gate-keeping engages both internal and external activities of the project team that consist of information dissemination, recruits management, and acquiring knowledge concerning professional development outside of the organization. Lastly, entrepreneuring / championing concentrates on finding resources and promoting ideas to those outside of the project group.

2.8.2. Leadership Roles in Project Group

Many studies point out that innovative leaders execute important roles within project groups that are a factor significantly to performance. Kim, Min, and Cha (1999)

reveal that the roles of technical expert, team builder, gatekeeper, and strategic planner are related to team performance especially when the leader's tenure increases. Surprisingly, the team builder's role has a negative effect on performance as team tenure increases and a positive effect when the task uncertainty is low. When uncertainty is high, the strategic planner role is the most important factor in team performance. The roles of technical expert and gatekeeper are important regardless of uncertainty. In their study to determine the influence of supervisors on the innovation of subordinates, Andrews and Farris (1967) find that the efficiency of leadership behavior is reliant on leaders' skills. They discover that higher performance supervisors with less technical skill give subordinates more freedom to explore, converse and argue with ideas. In addition, technically skilled supervisors are associated with innovation based on the important appraisal of subordinates' work because the leader's position can influence the effectiveness of roles. On the other hand, Barczak and Wilemon (1989) have identified communicator, climate-setter, planner, and interfacier as the roles presented by leaders in the operating teams that concentrating on incremental product improvement and innovating teams that focusing on the new product development. These findings see among the causes that moderate the role–performance relationship are innovation phases and the attributes of the venture, group, leader, and minions.

Furthermore, differences in leadership roles that associated with high performance for project and functional managers has being acknowledged in long-term project teams done by Allen, Katz, Grady, and Slavin (1988). They confirm that team performance

is elevated when functional managers performed roles related to technology such as being knowledgeable concerning recent professional deeds and disseminating information regarding technical development. Informing on recent professional deeds is associated with high performance for project managers but not for functional managers. However, information dissemination is not associated with high performance for either project or functional managers in newly formed teams.

In a model for organizational decision making, the importance of colleague roles is different in a complex problem-solving process (Farris, 1988). In examining roles associated with group innovation, group members in high innovation groups do not refer supervisors as sources of original ideas in the 'suggestion' stage of the model. However, they indicate that supervisors are helpful with critical evaluation and provide technical and administrative assistance.

Among the leader assistance behaviours are encouraging, task highlighting, technological competence, and involvement that positively related to offerings to scientific knowledge and applied practices (Barnowe, 1975; Roberts & Fusfield, 1981). So far, this relationship is moderated by group isolation and subordinate experience. Leadership is significantly related to performance when the groups are isolated from the innovative science community but this relationship is not significant for non-isolated groups. Leadership behaviors are also more important when scientists have less experience. Thus, leader roles are more important when subordinates are disadvantaged in some ways (Roberts & Fusfield, 1981).

2.8.3 Leadership Roles in Being Champion

Project leader has to make use of upward and outward impacts across frontier and often must act as a project champion (Howell & Higgins, 1990b; Shim & Lee, 2001). Within the firm, technological innovations need the support of higher-level management, marketing, manufacturing, and operating divisions to be successfully converted into new products and processes that arrive at the market. Outside the firm, the successful of new products require good relations with customers, suppliers, governmental agencies, trade associations, and also competitors. Project champions are excessive in innovativeness and risk-taking and likely to be more transformational in their leadership behaviours (Howell & Higgins, 1990a). Furthermore, projects with an active victory effort from the leader are better backing up across the organization and less likely to get revoke than projects without victory (Markham, Green, & Basu, 1991). Waldman and Atwater (1992) have report that victory activity and transformational leadership result in better project success, especially when leaders use impact at top levels of the organization. On the other hand, Ancona and Caldwell (1988) see project leader's team performance is related to the level of frontier straddling activity and how the project depends on the outside resources. Correspondingly, Shim and Lee (2001) find that project leaders in innovative projects of 22 Korea research institutes apply upward influence for more achievement and self-monitoring oriented that give the best influence style appropriate to fit in the organizational context. Frontier straddling project leaders are promoted to higher management positions at a much greater rate than those who do not straddle the frontier (Katz & Tushman, 1981; Stenmark & Mumford, 2011).

2.9 Top Management and Leadership Studies

The top management watches over organizational operation so that it increases performance and ensures value creation by executing the business process strategy across organizational boundaries, such as departments or divisions. (Kirchmer, Franz, and Rosing, 2015). This shows that top management leadership is important for motivating followers and mobilizing resources towards the fulfillment of the organization's mission, and for organizational innovation, adaptation, and performance (Antonakis & House, 2014). Due to this, individuals desire different traits in leadership skills dependent on the top management's position in the organizational hierarchy they are at (Nichols & Cottrell, 2014). As a result, organizations need to align their top management leadership with operational practices, under effect of the divergent nature of organizational change (Dubey, Gunasekaran, & Ali, 2015).

Study on leadership in technological innovation gives attention to traits and behaviours of first-line supervisors and reveals that innovation is positively related to top management's technical skills (Farris, 1988; Strand, 2014), administrative skills, and human relations skills (Peusa, Brauna, & Frey, 2013; Raza & Murad, 2014; Strand, 2014).

Top management who promotes subordinates to regard difficulties from new perspectives (intellectual stimulation), endow with support and encouragement (individualized consideration), connect a vision (inspirational motivation), and stimulate feeling and identification (charisma) is called transformational leadership

(Bass, 1985; Bass & Avolio, 1990; Peusa *et al.*, 2013). Studies show it links to top management effectiveness in various types of organizations (Bass, 1997; Stead & Stead, 2013), and this relationship is persistent across assorted levels of leadership in the organization too (Klewitz & Hansen, 2014; Lowe, Kroeck, & Sivasubramaniam, 1996).

However, transformational leader behaviors positively influence innovation orientation but with differing levels of intensity (Engelen , Schmidt, Strenger , & Brettel, 2015). Generally, at the beginning stages of the innovation process in the research projects, group members need to generate more original idea and draw together additional information from the external compared to the development projects stages that take care of product and process modification (Engelen *et al.*, 2015; Keller, 1995; Waldman and Bass, 1991). It has to form a vision and bestow intellectual encouragement that mostly done by project leaders to the project groups. Top management should display charismatic leadership to ensure the project effectiveness throughout the next stages of the innovation process where development projects occur. Consequently, project effectiveness should be combination of transformational leadership behaviours displayed by project leaders in research projects and higher-level leaders such as top management in development projects (Stead & Stead, 2013).

On the other hand, the path-goal theory of House (1971), and House and Dessler (1974) suggest that an effective leader especially in the top management level must

absorb behaviours that assist objectives accomplishment. Top management can make the most of the value of this achievement that influencing the subordinates' anticipation, implementation, and contentment. Their leadership styles may behave in different ways in different situations (Griffin & Moorhead, 2013) that take into account the characteristics of the assignments, surroundings, and subordinates. Thus the effectiveness or ineffectiveness of leadership is critically depending on the situation where the top managers are featuring in (Peusa *et al.*, 2013).

So from ontology point of view, leadership behaviours will not be uniformly effective in all situations as what is commonly believed to result in desired outcomes (Stenmark & Mumford, 2011; Vroom & Jago, 2007). Three manners where situational aspects and leadership may work together is: (i) situational influences change the significances of leadership behaviour (e.g., group environment), (ii) situational influences beyond leaders' power that impinge on organizational effectiveness (e.g., challenger achievement), and (iii) situational influences structure leadership behaviour (e.g., schedule restriction) (Vroom & Jago, 2007).

Strand (2014) finds top management is responsible for the installation of a corporate sustainability which indicates that organizational goals will direct to more sustainable exercises. He suggests that the requirement of strategic decision is important to determine what kinds of corporate sustainability bureaucratic structures are most effective for the companies. Therefore, nowadays top management applies strategic leadership by backing on involvement, magnitude of investment, innovativeness, and

business advocacy and authority whether a project is ceased (Green, 1995, Stead & Stead, 2013). Their influence have a positive impact on innovation especially new product projects such as payback period, domestic market share, relative profits, meeting sales, and profits objectives (Cavazottea *et al.*, 2012; Cooper & Kleinschmidt, 1987).

Strategic leaders, as being identified by Dimitrios, Sakas and Vlachos (2013), have strategic thinking, ability to look at the big vision, can adapt to change, and have very strong dedication and motivation in their works. They will lead, guide and influence their group members to think strategically about their own competencies. They are proficient in predicting and understanding the work environment at the broader vision. No doubt they implement adapting strategy to changing business requirements to remain essential to business in order to ensure business meet its objectives. Strategic leaders show powerful and efficient decisions and always have dedication in aligning their companies' vision. Their desire for work motivates them to achieve objectives with decisiveness.

2.10 Conceptual Research Framework

The conceptual framework of this study is guided by leadership studies that looking at top management perception under GLCs scope. The framework presents an overview of the study that has been researched along with particular themes that are found to have direct and indirect effects on green innovative leader effectiveness.

Top management who perform strategic leadership is competent to see a breadth of opportunities and direction, significantly in the future of the existing phase of organizational development (Dimitrios *et al.*, 2013). For the GLCs top management, there should be an uninterrupted direction to comprehend how their function provides value to the organizational sustainability through green innovation implementation factors. This study will look into a series of internal and external reactions that may modify the action which need to be taken at future stages to increase that value.

GLCs Top Management

Green Innovation Implementation Factors

- Rate of Technological Change and Product Life Cycle
- Industries Characteristics (Globalization, concentration)
- Organization Characteristic (Structure, size, diversification)

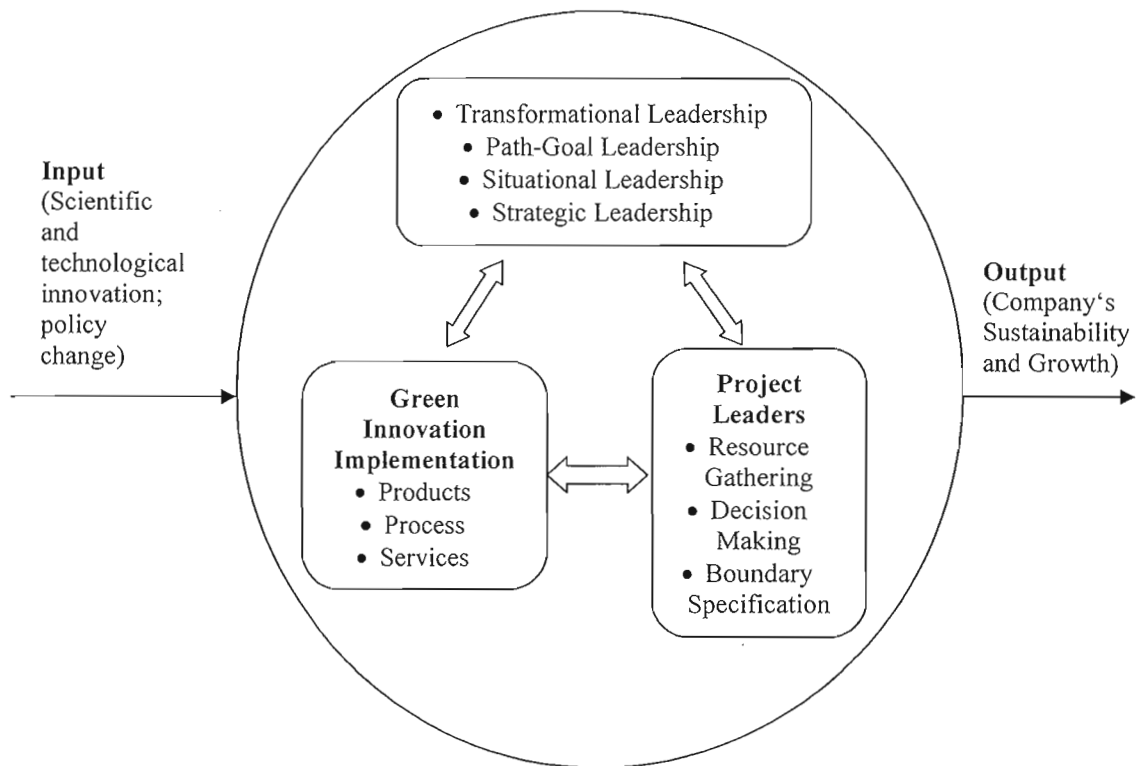


Figure 2.1.
Conceptual Framework of Top Management Perception towards Green Innovation Implementation.

The philosophical assumptions have outlined the empirical study performed by the researcher. This section expresses the key philosophical assumptions that influence this study where these assumptions form how and why the topic was approached.

Common sense has borne that different researchers with unlike philosophical assumptions would approach this study in a dissimilar manner (Mingers, 2003). Therefore, topic could have broad range of knowledge and competence, as well as to head to divergence of belief and opinion (Mingers, 2003; Peusa *et al.*, 2013).

This study explores the development of the appropriate leadership direction via the perception of the top management which would enable leaders to build and operate sustainable organizations in this new green environment which currently at the heart of debates about the nature and character of corporate responsibility (Insight, 2013).

The top managers in the GLCs are interviewed based on categories of the industries that their companies have directly involved with green innovation implementation. The researcher believes by getting to meet the top managers themselves, she would understand the top managers' views and cause of actions towards green innovation implementation that might be different with respect to their industries and responsibilities. As top management in their companies, they could describe their leadership style that link to changes in scientific insights, technological capabilities, product design and manufacturing, and markets which required additional set of perception to deal with green innovation implementation. The embedded multiple

case studies done and explored would propose additional block for top management leadership model that enhance the current leadership concept which collectively, they might be seen as the arena of opportunity with processes crossing traditional leadership and innovation implementation boundaries. These processes have a cyclic nature and are representative of today's green innovation implementation.

The method chosen would provide with interpretive evidence and could ratify those claims to establish their analytic generality by applying it to several other organizations with similar and contrasting characteristics. Here again, the main goal is to strengthen the conceptual validity of the study, but the procedure also helps determine the conditions under which the findings hold.

2.11 Summary

Previous studies have shown that green innovation implementation has been identified as the critical element in the current businesses' operation when the element of environmental is considered as industries' rank and image. The perception and understanding of green innovation benefits by the top management are said will help in the level of implementation in the companies. However, there is no firm findings show the role of the top management as the green leaders in the GLCs in Malaysia. Although many companies admit they have green business model concepts yet only few of them are really willing to share with others as a benchmark. These gaps have inspired this study to explore more on the top management perception with respect to their styles, and to explain the impact of green innovation implementation to the Malaysian GLCs.

In this chapter, a Conceptual Framework has been developed to guide this study in deploying the appropriate methodology in order to understand the gaps identified above. It will assist the researcher in Chapter Three to design the study according to the context determined and developed in the conceptual framework.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter enlightened the qualitative multiple case study method used for this study. It explained on the conceptual framework, proposition development, and justification and course of action for the research design. The research design covered the basis of the sources, the choice of the study sites and participants, the approach of data gathered, and the process of data analysis.

Every research method could be utilized for exploratory, descriptive, and explanatory depending on the sort of research question put forward, the extent of control the researchers had over real behavioural occurrences, and the extent of focus on current as oppose to historical occurrences (Yin, 2009).

3.2 Proposition Development

In seeking to understand the perception of top management in the GLCs towards the green innovation implementation, the interpretive paradigm was the best way to see it (Creswell, 2009, p.8). This study had proposed that:

3.2.1 Type of top management leadership could be distinguished based from the industries their companies were in,

3.2.2 Top managers saw the green innovation implementation as a tool to sustain their organization operation and growth

3.2.3 Different companies could have different concepts of green innovation implementation.

These propositions would guide the study to pursue on the framework and sampling that had been identified.

3.3 Research Design

In the simple definition, research design was the logical progression that linked the empirical data to the study's initial research questions, data collection, analysis of the relevant data, and ultimately to its conclusions (Yin, 2009, p. 26). This was agreed by Creswell (2007) who cited Bogdan and Taylor (1975) that research design was referred to the entire process of research from conceptualizing a problem to writing research questions, and on to data collection, analysis, interpretation, and report writing.

3.3.1 Qualitative Approach

From the paradigm perspective, the qualitative method offered abundant contextual understanding of the fundamental beliefs and assumptions that increased perceptiveness on topics of studies weighed against to what the quantitative analysis could accomplish (Yauch & Steudel, 2003). Compared to quantitative research, qualitative method was regarded as more unpredictable and adaptable for the grounds that it emphasized uncovered novel or unexpected findings and the possibility of adjusting research plans in response to such unforeseen events (Bryman, 1984). It also had the ability to probe

for underlying values, beliefs, and assumptions which this type of underlying reasoning was typically not pursued with a quantitative approach (Yauch & Steudel, 2003).

A qualitative approach was suitable to explore the meanings inductively that people attribute to particular life events (Bryman, 1984; Wray, Markovic, & Manderson, 2007) and its inquiry was broad and open-ended, allowing the participants to raise issues that matter most to them (Yauch & Steudel, 2003). Furthermore, Bryman (1984) implied qualitative method to naturalistic field research, ethnographic, interpretivist, and constructivist, while Flick, Kardoff and Steinke (2002) as cited by Flick (2002), related it as hermeneutic, reconstructive and interpretative approaches.

3.3.2 Interpretive Paradigm

The interpretive paradigm engaged on the empathetic perception of participants' day-to-day encounter and raised awareness of the numerous meanings provided to the regular and problematic occurrences by those in the setting (Bailey, 2007). As the interpretivists, the researchers questioned about what things people did, how and why they did that, and what they connoted to the participants. The researchers were interested in the meanings, symbols, beliefs, ideas, and feelings alloted or connected to objects, events, activities, and others by participants in the GLCs setting (Bailey, 2007, p. 53; Schwandt, 2000, p. 193).

The noteworthy of interpretive paradigm was the socially considerable meanings attached to the physical world that had impact to participant who attached to it (Bailey, 2007, p. 53). Thus, to understand the green innovation implementation and leadership of the top management in the GLCs, the researchers must comprehend the meanings that signified those actions. Leadership and green innovation implementation had different physical movements that could be interpreted as acts of appealing, due to the context and intentions of the participants (Schwandt, 2000).

The key ontological doubt in innovation studies was whether innovation was new or adopted/rejected. Everett M. Rogers (Jalal & Rogers, 2002; Rogers, 2003) imparted the central ontological approach that this study was based on. Rogers referred innovation as '*objectively* new as measured by the lapse of time since its first use or discovery'. In the Rogers' answer to the ontological assumptions of innovation, the question should be tackled from the both-and perspective. Innovation was both new and adopted/rejected. Although innovation occurred with unexpected outcome, this signified innovation as an outward incompatible duality yet it proposed creativity and prospect.

By employing qualitative method, the study was exploring the answer of the primary research question 'How the top managers' perception influenced the companies to implement green innovation and where they implement it?' This question was constructed to achieve an extended understanding on how green leaders enhanced the organizational sustainability innovation. Thus, the underlying intention of this study

was highly for explanation (Barbour, 2008) that warranted (a) foster comprehension of concepts and occurrence from participants' stances; (b) contribution to knowledge; and (c) heuristics visions. This enlightenment framework had assisted in structuring the research questions, the choice of methods to be used, the way data was analyzed, and findings of this study.

For the intention of this study, the ontological approach applied was to regard innovation as both new and adopted/rejected. This compromised the positive side of innovation, while admitting that various innovations turned up with unpredicted and frequently negative effects. The 'both new and adopted/rejected' consideration to innovation was more intellectually sincere and socially accountable. The concept of green innovation might be familiar to some of the GLCs. However, the top managers' perspectives on green innovation might depend on the technologies and trends in their industries.

For the epistemological assumptions, the interpretivists considered understanding to be an intellectual process where the researchers as a subject gained knowledge about an object or the meaning of human action (Schwandt, 2000, p. 193). Although Bailey (2007, p. 50) defined epistemology as what was learned independent of the researchers, but she still aware that there were multiple realities and a relationship existed between the researchers and what could be learned from the research. According to Denzin and Lincoln (2000, p. 157), epistemology wanted to know how the world was comprehended, and understood the relationship between the

researchers and the known by entailing an ethical-moral position toward the world and the self of the researchers. However, the interpretive paradigm could not be used to instill researchers' personal bias into the task or control the facts to reveal a point he or she wished to make. Instead, in the interpretive paradigm the researchers' own status characteristics, values, and behaviours determined what researchers could learn from the participants. By taking this into consideration during all phases of the research, it could increase the validity and trustworthiness of the research (Bailey, 2007). The background of the researcher was useful in supporting and fulfilling the focus of the study. Innovation had different meaning especially when green concept was attached to it.

The utilization of interpretivist paradigm of the social construction as part of the conceptual framework was absolutely pertinent to this study (Creswell, 2007). Innovation was obviously socially constructed because it varied between organizations and departments. Leadership too was socially constructed as right leadership was an isolated event because it might succeed in one organization but failed in another. Besides, with the same leadership style adopted by many organizations, the implementation could be different among the organizations.

In organization studies, epistemology treated the organization as a tangible object and also as a concept (Pesqueux, 2007). People might notice pertinent phenomena in their organizations that established their understanding of those phenomena. Organizations without specified matter could not be characterized as such. Thus, an epistemology of

organization was looking for the specific answers of the organization as an observable empirical object and search concerning how they were argued or debated to know the distinction, between social objects, those that were particularly noted as an organization (Pesqueux, 2007). In the context of GLCs, this study was interested to explore how the top management considered green innovation implementing in their organizations and how they adapted their leadership into green context. The participants were top managers that involved in the corporate strategic decision makings.

The interpretivist of qualitative research acknowledged the self-reflective nature in qualitative approach where the position of the researchers as an interpreter of the data and an individual who spoke for the information was highlighted (Creswell, 2007). This was very important because during the interviews, the researchers must really understand the industries, the organizations, the roles and positions the participants were associated with. For that reason, research questions must be asked to the right participants or the information would not be the right one.

The process of interaction among individuals was the concern of the constructivist researchers. In addition, they concentrated on certain contexts where people lived and worked to comprehend the historical and cultural settings of the participants that were suitable for a study on innovation. The researcher's own background and experiences outlined her interpretation to make sense (or interpret) the implication others had regarding the world (Creswell, 2007).

Innovation was a social phenomenon because the multi featured characteristics of innovation processes were often difficult to be quantified in numbers where quantitative research could only provide a part of the social picture. Qualitative natural experiments as could be seen in the companies or other setting where these innovation processes took place, might propose a more appropriate approach for studying self-experimentation with innovation (Sorensen, Mattsson, & Sundbo, 2010). Quantitative research was largely a backward-looking or rear-view mirror viewed that was relatively broad and more abstract, where qualitative research was more exploratory and could provide deeper insight into a phenomenon (Denzin & Lincoln, 2000) like innovation and leadership (Li, 2014). Therefore, this study was going to explore the green innovation implementation in the GLCs and how important the influence of their top managers' perception in ensuring the successfulness of the practice. The top managers must have all the qualities to understand and evaluate the environments where the GLCs were operated that might have impact on the organization sustainability (Li, 2014; Lin *et al.*, 2014).

Yauch and Steudel (2003) studied the staff behaviour and culture in two organizations and had shown the essential element added by the qualitative analysis which was the ability to reveal the beliefs and assumptions underlying the avoidance behaviours. They found that management's tendency to identify and punish mistakes, while ignoring good work often led employees to shift responsibility and avoid taking action. By the example, this study decided on qualitative case study approach to explore how the top management perceived the green innovation that they believed

could sustain their business, and how the top management adapted to this situation (Alhadid & As'ad, 2014; Li, 2014; Lin *et al.*, 2014)

Methodology was the best way for the researchers to discover the social reality and gaining knowledge about the world (Denzin & Lincoln, 2000, p. 157). Both in quantitative and qualitative approaches, the 'methodology' term informed the epistemological position, while 'method' and 'technique' indicated how data was collected (Bryman, 1984). Methodological assumptions had proved the best research performance by means of managing the research process using experiments or permitted it to progress in a natural surrounding (Bailey, 2007). It involved the technique of collecting data, sampling methods and the common sense that should be embraced in order to understand how people live. The researcher departed from her own world and went into the setting of the participants to interpret their experiences and perceptions. The interpretive paradigm researcher could not totally abandon her knowledge of the world (Bailey, 2007). In exploring the green innovation implementation and top management's perception of the GLCs, knowledge and experiences from other research experiences were embarked that could be adapted to make this study completed successfully.

The epistemological limitations and its seriousness were not explained in methodology (Derksen, 1986). In this study, the participants were encouraged to be opened and comfortable when answering the interview questions. Therefore, the strategies and styles had been chosen appropriately to get the research questions

answered at a very short time that was agreed by the participants whom as the top managers, they were busy with their daily schedules.

As indicated by Tabor (2007), a methodological approach on the stances of innovation were obliged to:

- examine the irregularities for instance unexpected consequences because research approaches that looked at counting and summations could not reveal their suitability and true accomplishments
- present a thorough of the complex activities embarked that help in recognizing learning and consequences, from 'successes' and 'failures'
- tailor and be true to serendipity and unpredicted disclosures that managed to denote the main results specifically with innovations

The qualitative approach (e.g. Stenberg, 2007) and case study designs (e.g. Lee, 2009) were fit for queries such as the above. Apparently, these approaches gave the opportunity to explore and identify what made green innovation implementation and top management worked or not, and what could be learned in either case from the view points of the participants (Tabor, 2007). Thus, the participants' perspectives and understandings to a certain extent than random sampling might be most suitable when the main motivation was on exploration of top management perception toward green innovation implementation in the GLCs. In this study, hermeneutic as a distinctive procedure was chosen with the intention of understanding certain statements pointed by the participants during the interviews, and sentences in the documents analysis of the secondary data. Through hermeneutic, understanding the whole sense of beliefs, aspirations, objectives, exercise, text, organizational context, the variety of styles, the meanings in language game, and anything that being stressed and highlighted by the participants were significantly interpreted.

The researcher believed value neutrality was not critical to this research process. As the result, reflections of the findings of the study would be written base on the values and other characteristics that might influence what were taught (Bailey, 2007) and emerged from the participants' understanding. Lincoln and Guba (2000) saw the limitation would be on the controlling part. Control could be a controversy when perceived the phenomenon that dealt with the ongoing problem of illegitimate questions (questions that had no meaning) because the frames of reference were those for which they were never intended or in one framework made little sense in another.

Lee (2009) noted that green sustainability had been emphasized in the internal business processes, to external stakeholders, and in investor relations, and also became increasingly important strategic issues for companies in most industries. Therefore, the researcher must identify the right organizations of GLCs that implemented green innovation strategies, and the right participants in the positions to answer the research questions of this study.

3.3.3 Strategy of Inquiry

Denzin and Lincoln (2000, p. 22) stated the strategy of inquiry embraced many skills, assumptions, and procedures that the researcher utilized as she progressed from paradigm to the empirical world. It positioned paradigms of interpretation into motion, and also linked the researcher to precise methods of gathering and analyzing empirical materials. The popular qualitative strategies of inquiry were narratives, phenomenology, ethnography, case study, and grounded theory with the case study

was suitable to explore the process, activities and events (Creswell, 2009, p. 177). The research strategies used paradigms in specific empirical sites, or in specific methodological practices such as making a case as an object of study (Denzin & Lincoln, 2000, p. 22).

The researcher must have skill to re-evaluate earlier research to extend sharper and additional insightful questions about the topic (Yin, 2009, p. 14). For that reason, the research technique must match the question at hand (Bryman, 1984). Whichever for single or multiple case studies, selection by sampling of attributes should not be the main concern determined against the significance of balance and diversity where the prospect to learn was primary important (Stake, 2000). The researcher should look at numerous interests in the phenomenon, choosing a case of some naturally, especially if the unique situations might yield uncommon insight into an issue (Stake, 2000, p. 450).

3.3.4 Embedded Multiple Case Studies

A case study was both a process of inquiry about the case and the product of that inquiry (Stake, 2000, p. 436) where 'how' and 'why' questions were more explanatory and likely to lead to the use of case studies as the preferred research methods (Yin, 2009, p. 10). But the more the object of study was specific, unique and bounded system, the greater the usefulness of the epistemological rationales being described in case study (Stake, 2000, p. 439).

Inspired by Lee (2009) works and findings, the embedded multiple case studies was adopted with some adjustments in this study because the qualitative researcher produced 'rich' data that had a great deal of depth (Bryman, 1984; Chang & Chen, 2013). Through the qualitative collection methods conducted such as the interviews, focus groups, participant observation, and open-ended questions, the researcher had great opportunity to explore new topics that could assist theory building (Vitale, Armenakis, & Field, 2008).

Based on the above judgment, this study found that it was quite difficult to understand how the perception of the top management adapted to the green innovation implementation in the GLCs unless the data was collected personally from the informants themselves. Embedded multiple case studies was chosen because the researcher believed the top management perception and green innovation implementation were different from one GLCs to the other. This was due to the background of the industries these GLCs were operated and the role of green innovation being implemented in the companies.

Through the embedded multiple case studies design, the researcher would like to find the similar discoveries (a literal replication) and dissimilarity discoveries but for foreseeable reasons (a theoretical replication) (Yin, 2009, p. 59). The data from multiple cases as the nature of this study was to be regarded as more inducing, and more robust (Herriott & Firestone, 1983).

The disputes confronted by case study discoveries would be the short of rigour studies by the researcher and the biased stances that induced the course of the findings and conclusion (Yin, 2009, p. 14). The most opponent was how the search for particularity contended with the search for generalizability that was a factor to theory building (Stake, 2000, p. 439; Yin, 2009, p. 14). With that in mind, it was believed **the focus of case studies was on small samples with high individual data quality and company-specific information which might result in widely different answers of whether it ‘pays to be green’** (Schaltegger & Synnestvedt, 2002). Furthermore, Sorensen *et al.* (2010) found that case studies had achieved realistically easy consecutive phases in presenting rigid models in designing and controlling of innovation processes.

In this approach the researcher decided to conduct a focus group discussion interview then followed with the individual interviews to get much deeper information.

3.3.5 Focus Group Discussion

Focus group discussion (FGD) had an element of flexibility and adaptability in terms of setting and the participants where their open-ended nature offered the advantage of permitting insight into the world of the participants in the participants’ own language (Litosseliti, 2003). This type of interview was conducted to gain access to views or attitudes of the participants (Barbour, 2008, p. 133) in a non-jeopardizing setting that were not to teach, notify, make decisions or sort out conflict (Krueger, 1994).

It was a helpful tool for the study, the way in which individuals jointly made sense of a phenomenon and constructed meanings around it (Bryman & Bell, 2007) particularly to understand decision-making processes and purposely effective in learning professional practices (Barbour, 2008, p. 133). In association with other methods, FGD could be treated for validity checking of discoveries and triangulation between methods (Litosseliti, 2003, p. 17).

3.3.6 Individual Interviews

In studying this issue, open-ended semi structured research questions were conveyed to the participants. The researcher paid attention to the participants that participated in the study and outline the questions after she had ‘explored’ the information from the participants. Nevertheless, the questions could be changed during the process of research to reflect an increased understanding of the problem (Creswell, 2007, p. 43).

During the interview process, the researcher would follow her own line of inquiry, as reflected by her case study protocol and asked her actual questions in an unbiased manner that also served the need of her line of inquiry (Yin, 2009, p. 106).

3.3.7 Expert Reviews

There were also forums and seminars that were attended by the researcher to get confirmation from the keynote speakers that fulfill the criteria of the samples of the study. During the Question and Answers (Q & A) session and after the talk, the researcher took the opportunity to confirm her findings with the expert by asking their

reviews on the results of the findings. In this study, three expert reviewers were identified to review on the findings after the FGC, and individual interviews.

3.4 Measurement of Instrumentation

The member checking procedure was done where the researcher discussed with her supervisor about the questions to be asked to the participants from the literature review she had done previously. Then, the semi-structured questions were constructed according to the research questions that this study required the answers from the participants. For each data collection type, all the participants were asked the same questions. After the FGD session was done, then the researcher detailed the questions to be more focus for the individual interviews session. After each session either the FGD interview or individual interviews was finished, the researcher would sit together with her supervisor and discuss the outcome of the interviews to ensure they had the same understanding about using the same wordings to reflect the same meaning of the questions that the researcher was going to ask. By doing this, the researcher as the instrument when asking the questions, could confirm that she would not ask different questions when she did the interviews.

3.5 Data Collection

3.5.1 Sampling – Participants, Expert Reviewers and Sites Selection

As qualitative researcher, she commonly studied in-depth with small purposive samples rather than random (Kuzel, 1992; Morse, 1989), within her context but could evolve once fieldwork begun (Miles & Huberman, 1994; Miles, Snow, & Miles,

2007). Due to this, purposive sampling was chosen when selecting the participants to be interviewed, identifying the settings, sites, events, and social processes for the study because they could purposefully inform an understanding of the research problems and central phenomenon of leadership and green innovation in the study (Creswell, 2007, p. 125). The boundaries to be studied that connected directly to the research questions contained by the limits of time and means were fixed. A framework was created to guide which revealed, verified, or qualified the basic processes or construct that undergirded this study (Miles & Huberman, 1994, p.27). In addition, intense and unusual cases were opted as collective case studies utilizing maximum variation as a sampling strategy to represent diverse cases and to fully express numerous viewpoints about the cases (Creswell, 2007, p.129).

Multiple-case sampling was chosen for organizations because it added certainty to findings, and it insisted clear choices about which types of cases to be included through continuous refocusing and redrawing of study parameters during fieldwork with some initial selection requirement (Miles & Huberman, 1994, p.27). The number of cases were determined and selected, as they depended on the purposes of the research problems, the research questions, the number of the participants accessibility, and time and resources constraints (Patton, 1990). This study also followed Bailey (2007, p. 64) that the suitable sample size also was concerned by what was being sampled such as the research sites, times for interviewing, and documents to analyze. This was why a conceptual framework and research questions were crucial to set the boundaries for sampling decision (Miles & Huberman, 1994, p.27).

When Yu and Tao (2009) studied the business level of new Information Technology / Information System adoption model in the Taiwanese firms, they had problems in reaching a high response rate in the survey. This was due to the mounting number of higher education institutes over the last 15 years, from less than 30 initially to over 160 now, as well as to businesses and industries increasingly shifting to China. In consequence, they suggested for the future studies it could overcome this problem by **conducting qualitative case studies via in-depth face-to-face interviews to collect data** (Yu & Tao, 2009). Therefore, in the context of the GLCs being understudied, the researcher had considered qualitative approach as more suitable because the GLCs companies were more than 300 spread under the wings of seven GLICs and nobody could be referred in order for us to get the full information of the total number of the GLCs in Malaysia.

The priority of this study was to study the GLCs that were very much affected with the green innovation implementation in their strategies, administration and operations. The Kementerian Tenaga, Teknologi Hijau and Air (KeTTHA, 2012) Malaysia had identified four major sectors that being the Green Technology focus of the government – energy, buildings, water and waste management, and also transportation. This information also guided this study to focus on what categories of industries to be explored.

Letters for permission for both interviews – FGD and individuals were written to the Chief Executive Officer (CEO) and Managing Directors (MD) of the GLCs. At the

same time the researcher had to follow up to check whether the letters that had been faxed to the GLCs were received. Then, every two weeks the researcher followed up with telephone calls to the personal assistants of the CEOs or MDs to get the information who were confirmed coming to the FGD interview. This was very crucial for the next step – data collection – to start. This study needed to limit the response time only for three months before the researchers set to FGD as the platform to get the most information of the issue.

The participants were the top managers of the GLCs that related to the focus of this study, and were picked by their CEO and MDs. For the FGD, at least one participant from each company was required during the interview session. Meanwhile, for the individual interviews, the researcher requested to interview three people from the positions of the top managers and middle managers inclusive the CEO and MD.

Three GLICs and 14 GLCs were being shortlisted as tabulated in Table 3.1 due to the accessibility of the study, and also time and budget constraints. The GLCs organizations were chosen based from their businesses nature and involvement with the green innovation implementation as being reported in the media. GLICs were invited in the discussion because they were the main shareholders in the GLCs.

Table 3.1
List of Companies Invited for Focus Group Discussion

No	Company	Industry	Type	Status
1	GLICs A	Investment	GLICs	Not Available
2	GLICs B	Investment	GLICs	Head of Department
3	GLICs C	Investment	GLIs	Vice President
4	GLCs A	Telecommunication	GLCs	Not Available
5	GLCs B	Oil and Gas	GLCs	Vice President
6	GLCs C	Automotive	GLCs	Not Available
7	GLCs D	Automotive	GLCs	Senior Managing Director
8	GLCs E	Financial Institute Group	GLCs	Not Available
9	GLCs F	Insurance	GLCs	Vice President
10	GLCs G	Transport and Logistic	GLCs	Not Available
11	GLCs H	Transport and Logistic	GLCs	Senior Manager
12	GLCs I	Property	GLCs	Not Available
13	GLCs J	Property	GLCs	Not Available
14	GLCs K	Property	GLCs	Not Available
15	GLCs L	Property	GLCs	Not Available
16	GLCs M	Infrastructure and Construction	GLCs	Head of Department
17	GLCs N	Plantation and Property	GLCs	Not Available

After the feedback from the FGD interviewed, the researcher then decided to put the cases into categories based on the industries where these companies operated. The researcher would like to get more information from difference companies than she had for FGD. This study focused on companies that the researcher believed had direct impact to green innovation implementation due to their mottos and publications of their activities in their websites, television and newspapers. The list of the companies was shown in Table 3.2.

Table 3.2

List of Companies Been Requested Permission for Individual Interview

No	Company	Industry	Type	Status	Participant
1	GLCs C	Automotive	GLCs	Available	Advisor
2	GLCs P	Property	GLCs	Available	Project Directors
3	GLCs Q	Utility	GLCs	Available	Chief Operation Officer
4	GLCs R	Transport and Logistic	GLCs	Not Available	NA
5	GLCs S	Chemical	GLCs	Not Available	NA

The researcher received the telephone calls from representatives of GLCs R and GLCs S informing that their companies did not practice green in their operations and could not answer the research questions. GLCs C also did not reply to the researcher's request for interview with their top managers after the process of been followed up for three months with them. Thus, the researcher assumed that GLCs C was not interested to participate in this study.

Large number of replication cases would give more certainty to this embedded multiple case studies results. Due to the different industries being studied, the study became more robust where more additional cases might reveal a different result when some rival explanation had been taken into account (Yin, 2009, p. 58).

Due to the limitation of time and resources, therefore the researcher was able to have five interviews with the participants. Luckily, the researcher was granted the permission to interview the advisor of GLCs C when the researcher sent the letter

direct to his office. It was the opinion of the researcher as the advisor and a Statesman, he had the credibility and experiences to answer the questions with regards to the leadership and innovation. GLCs Q gave the researcher the permission to interview their Chief Operation Officer (COO), and GLCs P allowed the researchers to interview three of their Project Directors but one was excused because he was outstation on the date of the interview.

An MD from one of GLCs who involved in automotive manufacturing was chosen as an expert reviewer to confirm on the initial finding of the FGD done. Two other experts who were very knowledgeable in the leadership and green technology and innovation industries from United Kingdom and Indonesia were also identified to confirm the themes emerged from the data. The list of the companies was shown in Table 3.3.

Table 3.3
List of Expert Reviewers' Companies Profile

No	Company	Industry	Type	Status	Participant
1	GLCs C	Automotive	GLCs	Available	Managing Director
2	Repso	Oil and Gas	MNCs	Available	Managing Director
3	Technology and Innovation Institute	Research and Development	Industry Advisor	Available	Managing Director

3.5.2 Data Collection Procedures

The researcher believed useful data informed by the participants would pinpoint new guides of importance of the study, expanded the area of information to be gathered, linked up existing elements of green innovation, and highlighted focal trends of green implementation (Miles & Huberman, 1994, p.31). This would be accounted for other information already in hand from previous studies that could offer more facts for an important theme emerged from the data that could be responded to present information.

Yauch and Steudel (2003) reckoned that one or more of the data gathering from the similar procedures might not enhance major information to outcomes or interpretation. Due to this reason, this study followed their suggestion that at least three different data collection approaches were used to guarantee enough data for triangulation. The utilization of diverse strategies could also avoid the researcher from being burnout (Wray *et al.*, 2007).

As required in embedded multiple case studies data collection, the researcher used multiple sources of evidence that were relevant in the advantage of the development of converging lines of inquiry and during the process of triangulation (Yin, 2009, p.114). Therefore in this study, the researcher decided to do individual interviewing, focus group discussion interviews, Q & A sessions in the talk and seminar, and document analysis as being suggested by Denzin and Lincoln (2000, p. 22) and Yin (2009, p.114). The unit of analysis was the top managers in the GLCs. The

researcher found that a single case study was quite different from all cases because each case had important atypical set of perception, events, contexts, and situations (Stake, 2000, p. 439). As the result, the researcher did the right choice to do the interviews with the focus group, the statesman and top managers of the GLCs, MNCs and experts' views because all of them involved directly with the leadership in their organizations, and surely the participants were able to give the right information related to the research questions. It made this embedded multiple case studies discovery liable to be more inducing and precise because it was based on numerous diverse sources of information.

The researcher found that every GLCs company had a unique organization structure that tailored to their business operations. With different departments and various scopes of responsibilities, FGD interviewed really gave this study a rich and rigour data from the participants who had been working in the top management levels at different positions and functions for quite some times. They were very friendly and honest in sharing the information. Although they were serving the GLCs but the situation, nature and level of the organizations business ventures they worked were different. Some GLCs had to find business projects overseas to sustain their organizations such as GLCs B and GLCs M, while others had to depend on the government policies in determining their market shares for example GLCs C and GLCs D.

To explore this topic, semi-structured open-ended research questions were constructed before the researcher conducted the interviews and she expected each interview to last about one hour of time. The participants were engaged in a dialogue rather than simply asked questions, because this study was particularly frame the interpretive paradigm (Bailey, 2007, p. 100). When questions were asked, the researcher listened to the participants that being studied and shaped the questions after she ‘explored’ because the interview questions changing during the process of research to reflect and increase the understanding of the problem (Creswell, 2007, p. 43).

The FGD interview was chosen to be conducted in the place where all the participants were convenient to join that was in PNB Darby Park, Kuala Lumpur where majority of the companies where operated. Only seven companies had agreed to participate due to the time constraints of their top managers on the date the researchers selected for the discussion. To conduct the FGD interview was a very challenging process. The venue was chosen first, which was PNB Darby Park, Kuala Lumpur, so that it would be convenient for the participants to come. Then, the date which the venue was available was confirmed. Both of the information: venue and date needed to be confirmed before an invitation letter was sent to the Human Resource Department (HRD) of participants’ organizations. The researcher had to follow up with the personal assistant of the Head of HRD on the status of the participants who would be coming to the discussion and this took very much effort to convince them that the discussion would not require the participants to reveal any confidentiality of their organizations’ strategies. The discussion was conducted in U-shape arrangement

with researcher act as facilitator. During the discussion, the participants were welcomed and explained the purpose of the discussion, and what it could contribute to the research findings. The participants responded to the questions asked with no order as everybody was free to give answers and opinions. Everyone was very comfortable and ease with each other during the discussion without any moment of silence except continuously full with comments. The discussion was recorded with digital voice recorder and last for three hours.

After the FGD was done, the individual interviews were later arranged and discussed in the following sequence based on the date the top manager were available for interview. All the interviews were recorded on the digital voice recorder to make them more robust.

A prominent statesman was interviewed as a participant in gathering data. He was a very knowledgeable person in many areas especially in the topics of leadership, management and technology that sound related to this study. He provided his advices to few GLCs organizations. A letter was sent to the statesman private secretary to ask permission and enquire date to interview him. The interview questions were also enclosed in the letter. Then, a telephone call was followed as to make sure the letter was received. Two months after the letter was sent, a letter was received informing that the statesman agreed to be interviewed, and a date and venue were stated in the letter. The interview was conducted in the statesman's office in Kuala Lumpur despite his hectic schedule. The interviewed was performed for one and half hours.

The interview with the MD of Repso, one of prominent MNCs in the world and currently lead the Indonesia office, was conducted in a room in Universiti Utara Malaysia (UUM), Kedah during his visit to deliver a talk there. The arrangement of the interview was done through and with the permission of College of Business Centre of Industry Building, UUM. The interviewed was carried out for half an hour and as a benchmark to the green innovation implementation in the non-GLCs organizations that run business in the same nature as the GLCs understudied. He also acted as the expert that comments on the early emerging themes from the FGD and the individual interviews with the participants.

The information of the five GLCs as tabulated in Table 3.2 was obtained from their websites such as their contact persons and numbers, and also the main business of their companies. Next, at the same time permission letters were written and faxed to interview the top managers to the CEO and MD of the companies. Then, the researcher called their personal assistants to confirm whether they had received the letter or not.

GLCs Q was the first company to respond, followed by GLCs P. The CEO of GLCs Q had given the permission to the researcher to interview their COO alone through the emails his personal assistant sent to the researcher. Afterwards, the researcher communicated with the personal assistant of the COO to know when he was free to be interviewed. As for the GLCs P, the MD permitted the researcher to interview three of their project directors. The personal assistant of the MD emailed the researcher

and carbon copied to the three project directors on the permission status. The contact numbers of all the directors were included in the email. Then, an initiative was taken to email the directors individually in order to know when they were available to be interviewed. All the interviews of the GLCs Q and GLCs P were done in their premises – the COO's office and the meeting room of GLCs P. Unfortunately one of the directors of GLCs P was not able to join on the time the researchers agreed to meet because he had urgent appointment to attend at outstation location.

Within a month, GLCs R representative contacted and asked the researcher to email the questions to be asked to their CEO. This was because the CEO was busy until the end of the year, and asked to answer the research questions in writing. A week after the questions was sent, the representative contacted and explained to the researcher that his company was not practicing green innovation and implemented it. Then, the researcher did some modification to the questions to meet the context of GLCs R to make it more senses and understandable. But they still believed that they could not help in this study in answering the research questions.

For the GLCs S, another letter had to write and send because the MD had been changed. The researcher was only known about this when she did her follow up after one month from the date she sent her previous letter. The following month after that they informed by a phone call that they were also not implementing green innovation in their companies.

The final company to be focused on was GLCs C. The researcher did her follow up through emails and phone calls every month for consecutive three months to know the status of the request. When there was no any reply from them received, the researcher assumed that GLCs C was also not interested in participating in this study. Fortunately, the researcher had the chance to have Q & A session and met personally with GLCs C's MD when he was invited as the main keynotes speaker to the UUM seminar in Langkawi. His comment was sought as an expert's view on the preliminary working model that the researcher interpreted based from the FGD, comment from the expert from Repso and individual interviews.

The researcher agreed with Stake (2000, p. 439) that the case study researcher need to take a strategic decision in regard to how much and how long the complexities of the case should be studied. Due to the limited of time and constraint of resources, this study concentrated on eight categories of industries: automotive manufacturing, property, utility, oil and gas, infrastructure and construction, transport and logistics, investment and insurance. The findings would be supported with the written information published with regards to the industries of the GLCs' participants and hermeneutics data. After conducting the FGD interview, five individual interviews, and two experts' views, the researcher identified that the participants talked about the same information repeatedly. The researcher was no longer identified new information regarding green innovation implementation in their companies and decided to stop the data collection due to saturation (Wray *et al.*, 2007).

The researcher also took the opportunities to attend the seminar that invited a Managing Director of a technology and innovation institute from United Kingdom as the keynote speaker too in UUM. During the Q & A session, two to three questions were thrown to him about the green innovation implementation current practices and top management perspective on that. The researcher managed to meet him during the lunch breaks, and asked his opinions as an expert to comment and confirm the emerging themes and proposed model that came out the data after all the data collection and analysis were done.

According to Heracleous (2007), hermeneutics was defined as the art of interpreting texts that position as an elementary interest that once statement was written as text, it was critical from its author, and its connotation as interpreted by new audiences might not essentially agree with the author's initial meanings. Along these lines, the ideal intention of hermeneutics was to uncover further avenues to understanding.

For that reason, the researcher used the information published in the-television, radio, report, newspapers and companies' websites as the most updated information on the topic of the study. The Prime Minister speeches and interviews, and the statements or interviews given by the top management of GLCs were among the data that being used to confirm the findings. Hence, there was no doubt that several experience methods could be handy in various situations in green innovation research (Sorensen *et al.*, 2010).

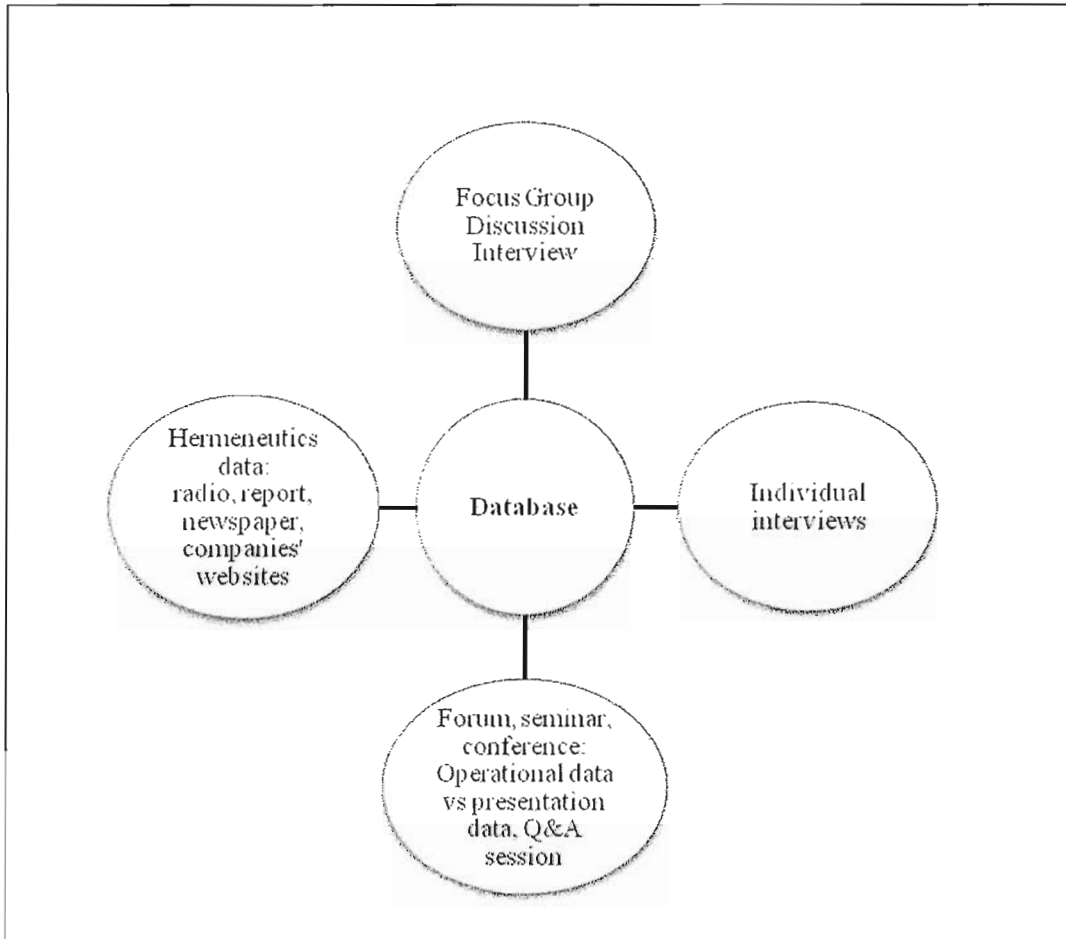


Figure 3.1.
Sources of Data

3.6 Techniques of Data Analysis

There were four types of data collection approached that being used for this study – FGD, individual interviews, Q & A session in conference, and hermeneutics data.

3.6.1 Raw Data

All of the recorded interviews of the FGD and individual interviews, and Q & A sessions were transcribed into written text. The transcribing process for each interview took three weeks to be completed. The recorded tapes were listened at least three times to ensure the important points were acquired. Verbatim transcriptions demanded repeated listening and reviewing of the whole transcripts to make sure precision (Wray *et al.*, 2007).

The hermeneutics document analysis referred to the articles that related with top management, green innovation implementation and GLCs from the reports published on the official websites of the GLCs, the newspaper, and also the multimedia materials such as the Prime Minister speeches and interviews, and the statements or interviews given by the top management of GLCs in the television, radio, newspaper, magazine, internet, conference, and forum.

3.6.2 Organizing and Preparing Data for Analysis

The data was organized in the spreadsheet format according to the type of the information collection approach. Each transcription was named according to the participants' companies. This would make the researcher easy to trace the data whereabouts for the analysis phase.

3.6.3 Reading through All Data

In order to get full understanding of all the data and recalled all the viewpoints of all the participants, each and every transcriptions was read through thoroughly until the researcher really satisfied with the meanings. The patterns of the data were searched that usually were not direct to be noticed or mentioned. Every data must be considered because the participants might say something which was unique only to their companies.

3.6.4 Data Coding with NVivo

This study adopted the initial coding of Charmaz (2006) to remain opened in exploring whatever theoretical possibilities the researcher could perceive in the data. By doing careful word-by-word coding and line-by-line coding, the analysis became more fit and relevance (p. 47). This study fitted the empirical world when code had been constructed and developed them into categories that crystallize participants' experience. It also had relevance when this study offered an incisive analytic framework that interpreted what was happening and made relationships between implicit processes and structures visible (p. 54).

Then all the transcriptions were transferred to the NVivo version eight, a computer assisted qualitative data analysis systems (CAQDAS). By using NVivo, it was much easier to manage the obtained data especially when the researcher had lots of data and required lots of coding too. The researcher found that NVivo was useful to help in

iterative analysis, counting and staying close to data. It was worth to notice that NVivo did not analyse the data but the researcher who was responsible to do the analysis.

3.6.5 Description of Interrelating Themes

After the data was coded, next the codes were grouped into themes. These themes indicated the viewpoints that the researcher saw coming emerged from the participants themselves. The themes might not be static and could be changing in their names as the researcher was getting more information from the data. Themes could be alone and then be interrelated with each other to become group themes. All the themes had descriptions based on the codes that were put under the themes.

3.6.6 Description of Interpreting Meaning of Themes

The data emerged from the information given by the participants would be assigned with themes. Themes that had similarities patterns were put together under same Sub Themes. These Sub Themes that represent dedicated concepts or ideas would collectively support the Major Themes. The Major Themes then would be grouped into Group Themes that held their meanings and being interpreted as a new exploration weigh against the literature review the researcher did at the beginning of the study.

3.6.7 Triangulation of Data

Triangulation was defined as measuring the same concept (Kadushin, Hecht, Sasson, & Saxe, 2008) or data from multiple sources of information (Bailey, 2007, p. 76) using two or more methods. This was useful when the topic of study was very complex or controversial, or required a holistic view (Litosseliti, 2003). Yauch and Steudel (2003) found the triangulation results were more robust, reduced bias and increased validity that must be considered important in leading a deeper understanding of top management perception that enabled the analysis of the values and assumptions in green innovation implementation within the organizations.

This study used triangulation to analyze the embedded multiple case studies being explored, and integrate the emerging themes (Kadushin *et al.*, 2008). By doing data sources triangulation from FGD, individual interviews, hermeneutics data, and seminar and conference (Patton, 2002), this study had addressed the construct validity problems because the various sources of data collection had granted multiple measures of the equivalent case studies. Thurmond (2001) agreed that triangulation was also to decrease the deficiency of a single strategy such as only looking at one case, thereby increasing the ability to interpret the findings. The researcher wanted the total quality for this study so using various sources of data collection prominently provided more information against only single source of information in case studies (Yin, 2009, p. 116).

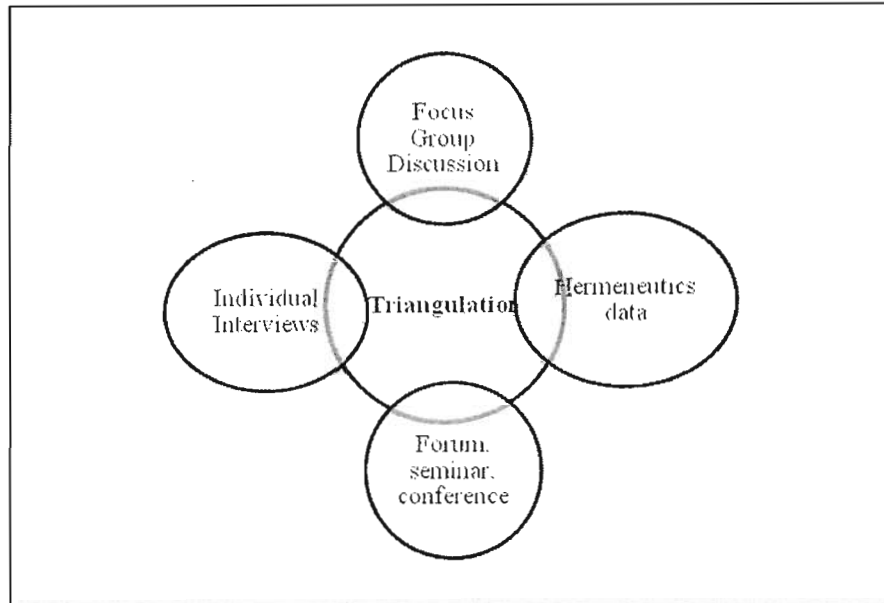


Figure 3.2
Triangulation of Data from Many Sources

The result of the data analysis was the similar beliefs, thinking, and perceptions came into view from the participants. The patterns that came to light from participants were organized within the data, separate into themes, and cluster into Sub Themes and Group Themes. A qualitative analysis software tool called NVivo 8 was used as a database that assisted the researchers in managing, storing and retrieving the data. The database and folders were created in a single file so that the researcher could manipulate the data and exhibit the emerged codes and themes graphically. As the project progresses, the researcher continually relocated and reorganized the codes and themes under new categories of information (Creswell, 2007, p. 167).

The researcher had done practical conduct of producing and interpreting the meaning of the data that were expressed by the participants. The interpretation was intended to answer the research questions of this study and then converting that understanding into new body of knowledge (Schwandt, 2000, p. 191). It was the intention of this study that the interpretation of all data being analyzed and the patterns matched that emerged from the data would contribute additional building blocks to the existing innovation and leadership theories.

3.7 Considerations for Quality

Doing qualitative approach required this study to consider some issues that made the study more robust and rigour. The issues were discussed in the following manners.

3.7.1 Validation and Reliability

Creswell (2007, p. 206) regarded validation in qualitative research as an effort to determine the accuracy of the discoveries as best explained by the participants' interviews and researcher's report through triangulation and rich description (p. 209). The triangulation in this study involved data collection, sources, methods, and researcher as the tool to establish credibility (p. 204). Discussion between the researchers and her supervisor was a very important part of member checking who would serve as a checker to validate the analysis process to the researcher during the all the interviews (Yauch & Steudel, 2003). Nevertheless, member checking during the transcribing process was to avoid any discrepancies or divergence of understanding between the researcher and her supervisor about the recorded audio before the researcher wrote it down in the text form.

The researcher constructed validity in the study by establishing multiple sources of evidence in data collection phase, where the next key participants would review the draft emerging themes that the researcher got from the previous interview (Yin, 2009, p. 41). This would decrease bias and amplify validity in steering an insightful lenient of top management perception that allowed the analysis of the significances and assumptions in implementation of green innovation contained by the organizations (Yauch & Steudel, 2003; Wray *et al.*, 2007).

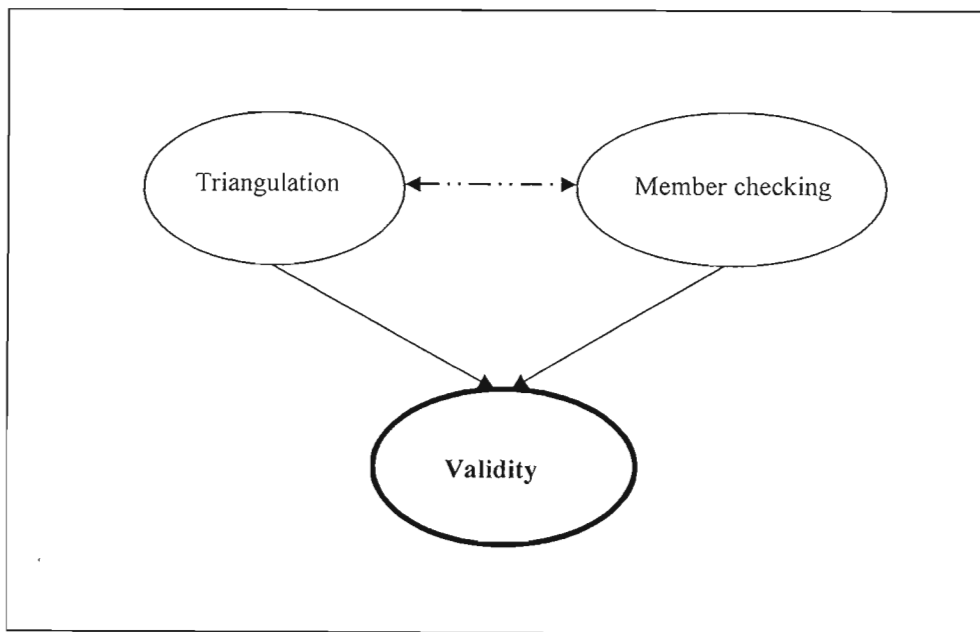


Figure 3.3.
Process to Determine Validity

The target of reliability was to reduce the blunders and biases in the study (Yin, 2009, p. 45), and to ensure that the approach was consistent across different participants and different GLCs companies (Gibbs, 2007). The researcher had utilized the embedded multiple case studies protocol to avoid any inadequacy all the way through in dealing with the documentation glitch in detail and developed database of each Group Themes using NVivo (Yin, 2009, p. 45).

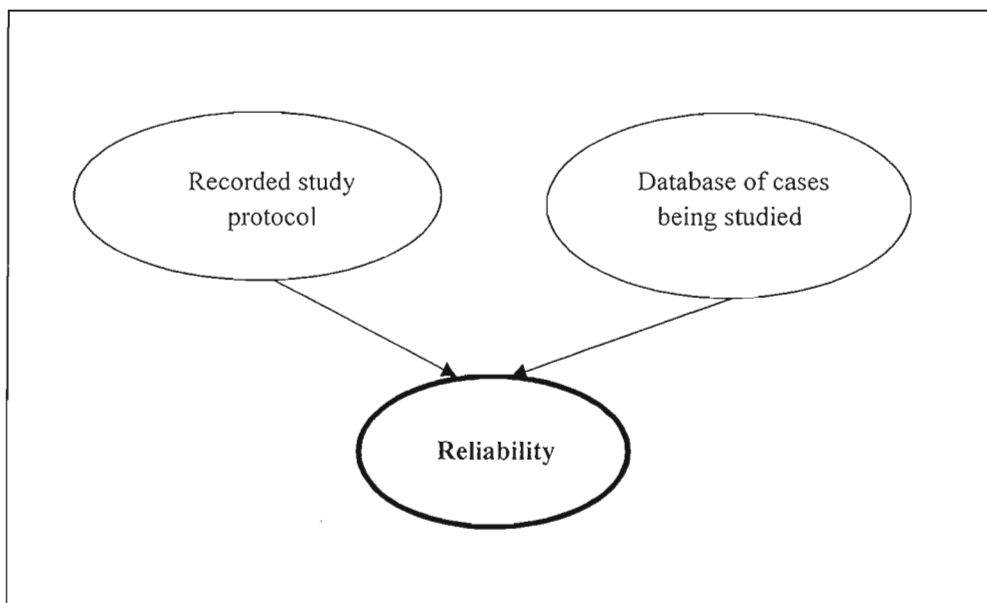


Figure 3.4.
Process to Determine Reliability

3.7.2 Verification

The data in the individual interviews and FGD were verified during the interviews with all the respondents. At the beginning of the interviews, the researcher explained the terms used, and throughout the interviews the participants were allowed to ask the meanings of the questions asked if they did not understand them. By this verification process, the right answers could be obtained from the participants pertaining to the questions asked. It was very important especially in the FGD interview where the participants were coming from different backgrounds that might have different understandings and references. The researcher also found that, owing to verification, it was handy in getting the cooperation from the participants when their comments and elaborations were out of the focus.

3.7.3 Ethical Consideration

The salient issues this study was facing in the field were the informed consents, deception and confidentiality that relevant in dissimilar research contexts (Bailey, 2007, p. 15).

The language being used in the informed consent documents was understandable to the participants in the research (Bailey, 2007, p. 17). The research could only begin after the potential participants understood each of the items in an informed consent document and agreed to participate.

The researcher mentioned about the purposes and details of the research in the informed consent document before she started all the interviews and explained how the participants' support could assist this study in the findings. It was the intention of the researcher to prevent deception when the participants were not told they were participating in a study, were misled about the purpose or details of the research, or were not aware of the correct identity or status of the researcher (Bailey, 2007, p. 20). The participants were informed that they could stop the interviews any time if they felt that it was not appropriate to them.

In the informed consent document, those in the study were notified that the research was neither anonymous nor confidential (Bailey, 2007, p. 24). It was not anonymous because the researcher was able to identify the participants in the study. It also was not a confidential study because the researcher knew the identities of the participants and revealed this knowledge. To be considered ethical, this confidentiality must be faithfully shielded. Although, there were few of the participants who wanted the selected information shared to be off-recorded but so far this study did not face any kind of that restriction of acknowledging their companies when they signed the informed consents stating that they gave the researcher the permission to use their names and companies. However, the precaution was taken to protect the anonymity of the participants as the information could hard them in the future so the researcher assigned initial to the participants (Creswell, 2007, p. 140).

3.7.4 Rigour of Research Process

This study did realize that research process and methodology had some constraints. Therefore, the structured process and systematic approach were to ensure the objectivity of the research process achieved. The goal of validity was to follow the principles. The researcher's constructs were also compared to other researches between same and different of the particular field they were studying. As previously briefly stated, this research work was presented at various conferences as further means to make certain validity so that other researchers and practitioners could review on it.

For the reliability part, this study tackled by having all steps of the formal analysis conducted by two researchers – the student and supervisor as facilitator. As this was the minimum requirement with the time consuming process, the researcher believed it was one way or another not viable to include more than this. The inter-rater reliability was quite high with regard to the fact that the two investigators had been cooperating for years, thus different judgments were individually accessed and resolved (Seuring & Muller, 2008).

3.8 Methodological Issue on Study Approach

Lee (2009) in studying why and how to adopt green management into business organizations had used the qualitative methods of case study, in-depth interviews and document analysis to collect data from two companies - one in the acoustic equipment and the other in the electronics industry. From the data collection method applied, the

results made him believed in the long term that sustainability issues was becoming critically important factors for corporations to consider for their survival and competitiveness (Suriyankietkaew & Avery, 2014).

As indicated by Stake (2000, p. 435), case study was not a methodological choice but a choice of what was to be studied analytically or holistically, entirely by repeated measures or hermeneutically, organically or culturally, and by mixed methods – but the researchers concentrated, at least for the time being, on the case. This method allowed the researchers to retain the holistic and meaningful characteristics of real-life events such as individual life cycles, small group behaviour, organizational and managerial processes, neighbourhood change, school performance, international relations, and the maturation of industries (Yin, 2009, p. 4). In their experiential and contextual accounts, case study researchers assisted readers in the construction of knowledge (Stake, 2000, p. 442).

3.9 Summary

Qualitative approach had been adopted to understand the gaps of this study. Since there were more than 300 GLCs in Malaysia, the researcher opted for embedded multiple case study method for data collection. Information gathered from focus group discussion, individual interviews, seminars, and written published information of the companies in the newspaper, articles and multimedia were triangulated to see the emerging interrelating themes. The sample companies were identified by the categories of the industries that these GLCs were operated. All the discipline of

interpretive characteristic in the constructive paradigm had been addressed in this chapter where validity, reliability, verification and ethical consideration were done. This was to ensure the gathered data from the participants who held top management positions was rich, rigour and sufficient to be interpreted into a propose model at the end of this study.

CHAPTER FOUR

FINDINGS AND DISCUSSION - THEMES CONSTRUCTION AND INTEPRETATION

4.1 Introduction

This chapter contained the findings of the study that explained the themes construction that had emerged from the data gathered and the interpretation of it that related to the research questions. However, the precaution was taken to protect the anonymity of the participants as the information could hard them in the future so the researcher assigned initial to the participants. The assigned initial had been applied to quoted materials acquired from interview transcripts to make it ambiguous in order to abide to the confidentiality because not all participants had allowed their names and organizations to be mentioned in this study. The data is analyzed and constructed into themes that at the end would be interpreted into proposed model.

4.1.1 Background

The intention of this study was to understand how top management perceived green innovation implementation and where they implemented it within the GLCs of Malaysia. The researcher wanted to explore how green concept impacted the innovation implementation in the company and who responsible for its directives. Supporting research questions for this study were explaining which category of innovation was widely adopted and diffused in the company, and what was the significant of green innovation to the organizational sustainability. These questions

had been answered by using the embedded multiple case studies method to explore the GLCs that were known for their innovations and achievements.

4.1.2 Participants

For the FGD, three GLICs and fourteen GLCs had been invited but only two GLICs and five GLCs were able to participate. After the feedback from the FGD, the researcher then decided to put the cases into the categories based on the industries where the companies operated. This study would like to get more information from difference companies compared to what they had been getting from FGD. The focus had been on companies that were believed had direct impact to green exercises due to their mottos and publications of their activities in their websites, television and newspapers.

As for the individual interviews, five letters were sent to the Chief Executive Officer (CEO) or Managing Director (MD) to different organizations to request for the permission to interview them and their top managers. One of the GLCs had not given any feedback after the researcher had been followed up for three months and it was assumed that they were not interested to participate in this study. Despite that the researcher had managed to get an exclusive interview with its Advisor and attended the seminar where the MD was the keynote speaker. The MD then was asked as expert reviewer on the findings after the FGD. Another two GLCs had informed the researcher through the phone calls that their organizations were not practicing green in their organizations as being the focused of this study.

Only two of the GLCs had agreed to be interviewed, and the CEO and MD gave the name of the top managers to be contacted in confirming the interview dates and times. All the interviews were done in the participants' offices in Kuala Lumpur.

The profiles of the participants of the study were tabulated as the Table 4.1 below:

Table 4.1:
Profiles of Participants

Categories	Profiles	Numbers of Participants
Type of Organizations	GLICs	2
	GLCs	9
Management Level	Top Management	8
	Middle Management	3
Working Experience in the Current Organization	Less than 10 years	4
	Between 10 to 19 years	1
	Between 20 to 29 years	1
	More than 30 years	3
	Not Available	2
Gender	Male	10
	Female	1

The list of the companies participated in this study was tabulated as the Table 4.2 below:

Table 4.2
List of Companies Participated in Study

No	Company	Industry	Type
1	GLICs B	Investment	GLICs
2	GLICs C	Investment	GLICs
3	GLCs B	Oil and Gas	GLCs
4	GLCs C	Automotive	GLCs
5	GLCs D	Automotive	GLCs
7	GLCs F	Insurance	GLCs
8	GLCs H	Transport and Logistic	GLCs
9	GLCs M	Infrastructure and Construction	GLCs
10	GLCs P	Property	GLCs
11	GLCs Q	Utility	GLCs

The overview of the individual participants' profiles in the study was tabulated as the Table 4.3 below:

Table 4.3:
Overview of Individual Participant's Profiles

Organization	Participant	Status	Education	Tenure (years)
GLICs B	Abdul W	Head of Department	NA	NA
GLICs C	Aziz A	Vice President	NA	5
GLCs B	Amirul R	Vice President	Degree in Civil Engineering	28
GLCs C	The Statesman, Tun M	Advisor	Degree in Medical	30
GLCs D	Mazlan AS	Senior Managing Director	Not Applicable	30
GLCs F	Azlinda AZ	Vice President	Degree in HRM	5
GLCs H	Nizam T	Senior Manager	MBA	8
GLCs M	Hassan S	Head of Department	NA	NA
GLCs P	Haji M	Senior Project Director	Degree in Civil Engineering	13
GLCs P	Tengku K	Project Director	Degree in Civil Engineering	5
GLCs Q	Datuk A	Chief Operation Officer	Degree in Power Engineering	34

4.1.3 Expert Reviewers

All the initial and final findings The researcher met one of the MD of the GLCs in a seminar where he was invited as the keynote speaker. The MD then was asked as expert reviewer on the findings after the FGD.

The researcher also had managed to get answers from two MDs and one Head of Director during the talked they gave in the separated seminars they had been invited as guest speakers one in Bangi and two in Sintok.

The profiles of the expert reviewers of the study were tabulated as the Table 4.4 below:

Table 4.4:
Profiles of Expert Reviewers

Categories	Profiles	Numbers of Participants
Type of Organizations	GLCs	1
	MNCs	1
	Technology Institute	1
Management Level	Top Management	3
Working Experience in the Current Organization	Less than 10 years	2
	Between 10 to 19 years	1
Gender	Male	3
	Female	0

The overview of the expert reviewers' profile in the study was tabulated as the Table 4.5 below:

Table 4.5:
Overview of Expert Reviewer's Profile

Organization	Participant	Status	Education	Tenure (years)
GLCs C	DS S. Z.	Managing Director	Degree in Engineering	4
Repso	Dr Johan	Managing Director	Degree in Finance and Accounting, DBA	Not Applicable
Bristol	Prof Slater	Managing Director	Ph.D in Technology and Engineering	3

An MD from one of GLCs who involved in automotive was chosen as an expert reviewer to review issue in the GLCs regarding top management and green innovation implementation. Two other experts who were very knowledgeable in the leadership, and green technology and innovation industries from United Kingdom and Indonesia were also identified to confirm the findings that emerged from the data.

4.1.4 Method

The FGD had been conducted in PNB Darby Park conference room with six participants from two GLICs and five GLCs where the researcher acted as the facilitator. This followed with individual interviews with four participants from different GLCs at their work locations, and one from MNCs in UUM. The FGD was done in 3 hours whilst the interviews last between thirty minutes and an hour. All of

the participants had agreed to have their interviews recorded but there were few statements were asked to be off the record. In addition, documents pertaining to the organization and its innovativeness had been gained through the print media and Internet. All the recorded interviews had been transcribed and entered into NVivo 8 (International, 2011). For the demographic backgrounds information that obtained from the participants during their talked, had been written down in the researcher's field note.

As had been indicated by Charmaz (2006, p. 146), the constructivist researcher explored and interpreted the disguised proclamations or actions that had clear information testified by participants but she did not described it. From there, the qualitative data was examined inductively from specifics to more broad perspectives, whether these perspectives were called themes, dimensions, codes or categories.

Coding initially consisted of **open-coding**, which resulted in **67 unique codes**. Next, the 67 codes were reduced to **16 axial coding** or **major themes**. These 16 major themes were further collapsed into **four group themes of selective coding**: (a) organizational innovation (green innovation in organization), (b) strategic leadership (top management perceive green innovation), (c) frugal innovation (categories of green innovation), and (d) organization sustainability.

4.2 Group Theme 1: Organizational Green Innovation Concept

This part had explored the implementation of the green concept across the companies' activities under the study. The focus was to see the innovation related to green that the top management of the companies had been perceived would benefit them. Throughout the data collection had been revealed by the participants, four major themes had come out and depicted in the Table 4.6 that would show the findings clearly.

The details of the four major themes were explained below:

Table 4.6

Synopsis of Major Themes of Group Theme 1: Organizational Green Innovation Concept

	Major Theme	Explanations
1.1	Green Innovation of Companies	The priority of the companies in term of innovation, the requirements for innovation and green innovation concept that they had been preached need to be recognized.
1.2	Green Desire of Companies	It was important to understand the desire to implement green innovation, their operations that had been involved with the environment and how the green innovation could impact their strategies.
1.3	Green Implementation Direction	The rationale of the green implementation direction and who contribute to the green innovation implementation had been acknowledged.
1.4	Green Organizational Commitment	It was interesting to see the appropriate action the companies had been taken and sources of the commitment had been given by them.

Here, organizational innovation was referred as innovation that had been implemented by companies either it was new or adapted inside their processes, products and services to sustain their growth within their industries globally. The organizational innovation was unique to each company and implemented to match the suitability of the company's structures and operations.

Green concept was defined as any actions, policies and strategies being implemented to reduce the companies' operational cost through innovations that had reduced the waste, saved the environment, improved the work place and processes, and sustained the growth of organizations.

Therefore, Organizational Green Innovation Concept would focus on the companies that had exercised green concept when implemented innovation inside their processes, products and services to comply with their industries' trends and had ensured the sustainability of the companies' growth and profits.

4.2.1 Major Theme 1.1: Green Innovation of Companies

All companies had vision and mission to strategize their existence and competitiveness in the business map. They wanted to be the market leader in their industries and had gathered the market share through their segment of businesses. With the intention of being the choice of buyers, companies were needed to prioritize their agenda and strategies of businesses. They had to be innovative in their processes, products and services to give more values to their customers. Innovation

was identified in this study as the key to success in the business because it could differentiate the innovative companies from their competitors.

4.2.1.1 Sub Theme 1.1.1: Prioritization of Innovation Strategies

As being stressed by participant, the Statesman Tun M, before the companies wanted to innovate, they must always question the current practice that had been the orthodox way of doing things that they had been practicing for years. The companies needed to see whether that practices were really capable of delivering or not for nowadays demands. In every case and situation the companies had been dealing with, they should question whether that practices could apply or not. If they found that it had not been applied, then they did not accept it and needed to innovate to change it for betterment.

In the utilities and oil and gas industries, the participants Datuk A and Dr Johan together had agreed that their companies' priority was to reduce the carbon dioxide emission footprint. Dr Johan added that the green product was basically lowering down the carbon emissions. Therefore, when the industries of oil and gas were talking about their products, actually they were talking about from the drilling up stream to the manufacturing refinery even including in a way to influence the customers on how to manage their fuel consumption. So, it was a whole process of innovation in technology and marketing had been involved in the company in order to be green.

4.2.1.2 Sub Theme 1.1.2: Needs to Innovate

In May 2009, a purely voluntary green rating system in the building industries named Green Building Index (GBI) had been launched in Malaysia. As being mentioned by Haji M and Tengku K, the GBI had reached zealous approval by the property industry that had covered from stand-alone buildings to entire townships. The green certification would be produced from GBI as step to create green-market niche for Malaysian properties. As for the building industries, the participant Tengku K had mentioning that green building was currently the trend being encouraged by the Malaysian government. There were so many new and adapted innovations had been implemented in the building industries to tailor to the latest market demands. However, he explained, the terms of green building might refer to many categories and elements that the building contractor companies could contribute to fulfill the green index.

From the requirements of the industries of the participants' companies, the limitations of the operational process had been made known and they were allowed to embark where the concerned of the community and environment had been the main priority. This required innovation mind of the people especially the leaders in the companies to work on something innovative especially related to green that within their capabilities and power without sacrificing the growth of the companies.

This was confirmed by participant Datuk A that his company had wanted to follow the Prime Minister's commitment to the Copenhagen Protocol that Malaysia would do 40 percent reduction in terms of emission GDP reduction by year 2020. The participant Dr Johan also stated that his organization needed to support any government intentions and initiatives in all the countries they operated. They would do the work in preserving earlier before they worked in those countries in order to avoid any problems or rejections once they had started operation there. On the other hand, for participant Tengku K, it was them who had been needed to be supported by the government because the green buildings concepts were still expensive for buyers in Malaysia at the moments. Nobody was keen to be in green building except all the demands had been coming from the expatriate companies as they were exposed back in their western countries.

During the interview, it was noticed how the GLCs had to strictly commit to the government's regulation and aspirations. As being told by participant Datuk A, basically GLCs had to follow what the government had been endorsed because it was not only good for sustainable development of the companies and countries but green itself had brought along a lot of opportunities to GLCs Q itself because by reducing the carbon emission, they as utilities producer could improve energy efficiency whereby their operational cost could be reduced. This indirectly would provide some new business opportunities for them that required green-innovation-mind engineers.

In addition, it was revealed that the GLCs prioritized in innovation were similar to the non-GLCs. As being claimed by Datuk A, according to the forecast, they were going for green but either it had been viable or not viable was depending on the economical issues. This was also the same statement determined by participant Dr Johan. The innovations of technology related to green had been tremendously made the processes viable and achievable.

4.2.1.3 Sub Theme 1.1.3: Green Innovation Concept

At the same time, this study had enlightened that each company had their own concepts related to green as being said by the participants below:

“When talking about green, GLCs Q has a lot multiple concepts.” (Datuk A).

“Actually when we said green building, the terms might refer to many categories and elements but as long as the building contractor companies can comply with the green index, then it is fine.” (Tengku K).

Clearly, all the above companies had recognized the innovation related to green was part of the requirement of their industries especially when their operations had directly involved with the community and environments.

4.2.2 Major Theme 1.2: Green Desire of Companies

When the researcher was talked about desire, she liked to understand why these companies had chosen green as their priority of implementing innovation as what they had been determined in Major Theme 1.1.

4.2.2.1 Sub Theme 1.2.1: Green Innovation Implementation

In the utilities industries, it was revealed by Datuk A that every year the cost of Renewable Energy had becoming less and less because of the new technology being implemented. The innovation for new technology had tremendously vital because the cost of the fossil fuel generation would have become more in the future due to the limitation of the resources all over the world. Moreover, the carbon footprint impact was largely insisted by the public.

It was agreed by Dr Johan where in the oil and gas industries, carbon footprint was a big agenda that they had to face the challenge. The future demand in oil and gas was obviously green product and they needed to fulfill this before their rivals did it first in capturing the market demand.

Same went with the building industries. It was revealed that the first innovation was the GBI, followed by the Industrialized Building System (IBS) construction in Malaysia. The participant Haji M said IBS was an innovative course in building construction because the components were produced in a controlled environment either on or off site. Minimum extra site works in the aspect of logistic and setting up required by this innovation because it was done in appropriate synchronization with orderly planning and integration. On top of that, it was disclosed that the Malaysian government initiated IBS to reduce the fund the contractors paid to the foreign workers and also had instructed that any government project must contain of 70 percents IBS components.

4.2.2.2 Sub Theme 1.2.2: Environmental Considerations by Companies

It had been perceived that apparently the GLCs were serious in considering green in their products and process especially when their operations had impact on the environmental, they saw it as the obligation that all countries and companies had to fulfill. The green concept that applicable to the companies' business ventures depended basically on the green innovation and technology improvements.

To the researcher's remark as well, mainly the desire to be green was related to the technical and technology advancement. According to participant Haji M, most impact would be on the building construction technical parts for the reason that building technology owed to the new initiative of green building and IBS innovation. It was no desire to change related to green in the administrative issues except recycle-reuse-reduce policy which had been implemented more than a decade in the company. The only way the company did thing for those two initiatives – technical and administrative - would be different where else others would remain as he had rationalized.

Similarly for the utilities industries, the participant Datuk A also had the same opinion that the green innovation would mainly correlate to the technology in the technical departments. Consequently, their biggest challenge was to be reliable, adequate, and complied with the minimum cost in order to provide a very competitive tariff to the consumers.

The participant Tengku K told the researchers that the green element their technical team had to be included was the one they needed to achieve when involved designing in their projects. It meant that all designs had to be green now. As a result, everybody especially the technical people and leaders must think of green. With so many new and adopted innovations of technology associated to green, he added that it had made the company's processes and products viable and achievable.

As being verified by Haji M, technology was important that companies should think about. On the whole, the green element was very huge. Green initiative incurred some cost compared to the current practice. This was also affirmed by participant Tengku K that from the base design, they had to start to develop from rain harvesting, energy saving until to the site management. As the developers, they would sell their products with higher cost because due to their margin. This was supported by the statement of Haji M that what his company wanted to achieve in the design had been determined by the GBI.

4.1.2.3 Sub Theme 1.2.3: Green Element Marks on Companies

Majority of the green concept initiative implemented in the companies had been focused on the process where technology played the main role:

“Technology was a huge aspect being applied in the innovations implemented.” (Tengku K).

As the outcome of the green innovation process, the products would be more acceptable by the community and industry:

“Yes, on our product. We referred to buildings that we built.” (Tengku K)

Whereas, this study had seen that the administrative part had encountered with less impact on the green innovation and only involved the processes such as used less paper, used energy-saving bulb, recycle-reuse-reduce policy and so forth:

“Administrative issue was not a problem... only the way we did things need to amend accordingly.” (Tengku K).

“Green product innovation... defined in terms of context of all companies. Meaning we didn’t encourage people to print for example Repso had already adopted this particular culture may be 10-15 years back when try not to produce a lot of these waste resources.” (Dr Johan).

However, it was accepted as what being revealed by the participants that green was not cheap due to limitation of production, therefore cost had increased at the starting investment:

“Green buildings... but I saw that there was none... because they knew that the green buildings were high cost building... so the rental was also high. In spite of this, green building was good for the end-user and the developers because they got exemption on the tax and sale tax.” (Tengku K).

The views of participants from GLCs were also supported by Dr Johan from the point view of the MNCs:

“Because again you have to understand all these products innovation for green is not cheap. That means if the customer did not willing to pay for it, company would not move drastically towards that. In Europe, if the government made it legislation then everybody was excited to participate in these.” (Dr Johan).

The requirement of green was focusing in producing less waste by 3R concept – recycle, reuse and reduce. The awareness on greening the environment had made the positive move around the world by the people. Yet, the green desire was much depending on the priority of the companies like being acknowledged by Tengku K:

“In technical and operation issues, green building requirements were different so the technical issues would be different too.” (Tengku K).

4.2.3 Major Theme 1.3: Green Innovation Implementation Direction

After both themes above were analyzed, it was very interesting to be knowledgeable about where the directions of implementing green came from due to the innovation priorities and desire on Green initiatives,

4.2.3.1 Sub Theme 1.3.1: Direction Initiators

The participant Datuk A had stressed that **if top management did not approve on green innovation then nothing would come up** because they needed to answer to the government on whatever action and decision they had taken. This statement was also supported by Haji M who mentioned that **without the initiative of the Board, his company would be slower in the greenness initiatives**. Additional points being mentioned by participant Tengku K of GLCs P had **confirmed that in GLCs it was a top-down approach**. Although the bottom would propose the idea of green to the top management but at the bottom line normally they wanted to see what the costs were. As always, observed by him, the top-down direction definitely already knew what to do and the cost of going green so then it had been easier for the employees just to implement it.

However, participant Dr Johan of Repso believed a lot of people had preferred the direction to implement green to be coming from the top to the bottom but top-bottom was a slow process. He thought because Repso was a company where the culture was a little bit different, it was about mixed of all these. Culture in Repso was basically consensus and it might not be so autocratic. It was close to top-bottom but of course the top-bottom was very slow. He said their corporate culture had allowed them did a lot of communication, influence, and feedback when they wanted to come up with the vision including the move to have green innovation in the company.

4.2.3.2 Sub Theme 1.3.2: Major Contributors

Definitely, the different between the GLCs and MNCs organizational innovation practice had been observed. But to Haji M of GLCs P, the middle managers also had role to play with this saying:

“It was the practice that the middle managers together with the top managers did the planning. Therefore, if you considered middle managers as the bottom end of the companies... then it was a bottom-up.” (Haji M).

From the opinion of Haji M, still there had been constraints if the decisions to embark on green innovation were not coming from the top management because **bottom level people such as the engineers were too technical and their scopes were too small so they had not being able to see the bigger issues.** Whereas, the middle managers had bigger scope so they could look on the cost benefit impact too.

Nevertheless, Dr Johan had deemed that every level was welcomed to share their thoughts of green innovation related to their jobs and workplaces. This was based on the ground that through employees' contribution toward green, the top management could capture that as part of the strategy where the staff also could find themselves some sense of belonging to the companies. That was a great advantage to the companies when the employees had ownership even though it had not been easy to be recognized.

As being emphasized by Haji M, the green building normally had extra cost around 10 percent of the total construction cost. Noticeably, without the support of the top management, he could not see those initiatives could be done. At the moment, there had been no initiative from the engineers or the architects at the low and middle management levels because he saw the awareness of the green building and IBS had to be coming from the view of how they were going to get competitiveness of their company, and not just completed the project alone.

4.2.4 Major Theme 1.4: Organizational Green Innovation Commitment

Following was the verification by the participants about the priority of innovation initiatives, how the desire of green implementation in the companies and the direction of implementing it. Later, the researchers wanted to explore the commitment of the organizations towards green innovation.

4.2.4.1 Sub Theme 1.4.1: Source of Commitment

Datuk A acknowledged the researcher that his company, as the sole utilities company in the country, had green policy that was approved by its BoD. Correspondingly, the structure of the organization had defined rules and responsibilities of certain departments and divisions to look into the commitment to oblige to green. Its Generation Division had its own engineering team that glanced over all the technologies on how to generate power better and more efficiently. The same practice had been done by the Transmission and Distribution Divisions. It was highlighted by Datuk A that the commitment shown by the company through having dedicated people, departments and up to level divisions to look into green innovation aspects such as the Engineering Department that always continuously looking into new processes, new technologies and new methods to make the company's operation more efficient.

The same organizational green innovation commitment with the oil and gas industries as being exposed by Dr Johan had also been undergone. When Repso did their business, they did their 5-10 years planning inclusive where carbon footprint became a major concern in the Europe. Repso had seen itself in contributing towards this through three approaches - its vision itself, its analyze consumption of customer, and finally how it had used this carbon emission as a value proposition to capture the heart of its customers. As Dr Johan being emphasized, basically situation where the top management had looked at was where they had to be more responsible to the environment and how to make this as their value proposition. This was due to the

reason that it was a very expensive to go for green and timely to educate the consumers to use product that was friendliest to the environment. Therefore, the company had to have innovative strategy to turn the challenge into the opportunity.

To the same extent for the building contractor, Haji M arguments had been focusing on the fact that Tabung Haji (TH) had developing buildings that were green in order to easily get potential tenants. His company supported this commitment of TH although his company would not get the benefit directly but as a whole of TH, they would get the benefit together. GLCs P had been backing up these efforts towards its organizational green innovation initiative where it took consideration on the green issues in the recent and future projects. **Without the initiative and commitment of the BoD, Haji M was in the same opinion as Datuk A that they would have been slower in the greenness initiatives.**

It was fascinated also to explore what the other participants had been revealed. In accordance with Tengku K, there were some occasions that the suggestion to commit to green innovation had been coming from their consultants. For that reason, Tengku K's company needed to really understand the green innovation requirement before they committed into it because the consultants were on the other side that would want to have more advantages over the developer. Nevertheless, now obviously the direction of the management of his company and the government too had been going towards green building.

4.2.4.2 Sub Theme 1.4.2: Essential Action

Based on the statements that had been determined by the participants above, the organizational green innovation commitment of the GLCs could be done through few actions that GLCs could take. For example, Haji M told that for its JAKIM project that would be launched this year, they had planned to get the certification with a minimum requirement on green innovation because it was necessary for them to accomplish their projects with the minimum requirement due to the cost issues. On top of that, Haji M highlighted that if it had planned to attract MNCs tenants, they needed to get certification for their building where the tenants could reduce the usage of energy through the green innovation of the building technology. With this green innovation commitment too would secure them with the government projects, customers and tenants, added Haji M.

4.2.5 Conclusion Group Theme 1

As the conclusion, the commitments of the organizational green innovation had been relied on the importance of the processes, products and services to the customers that at the end of the day would later determined the companies' profits and growth.

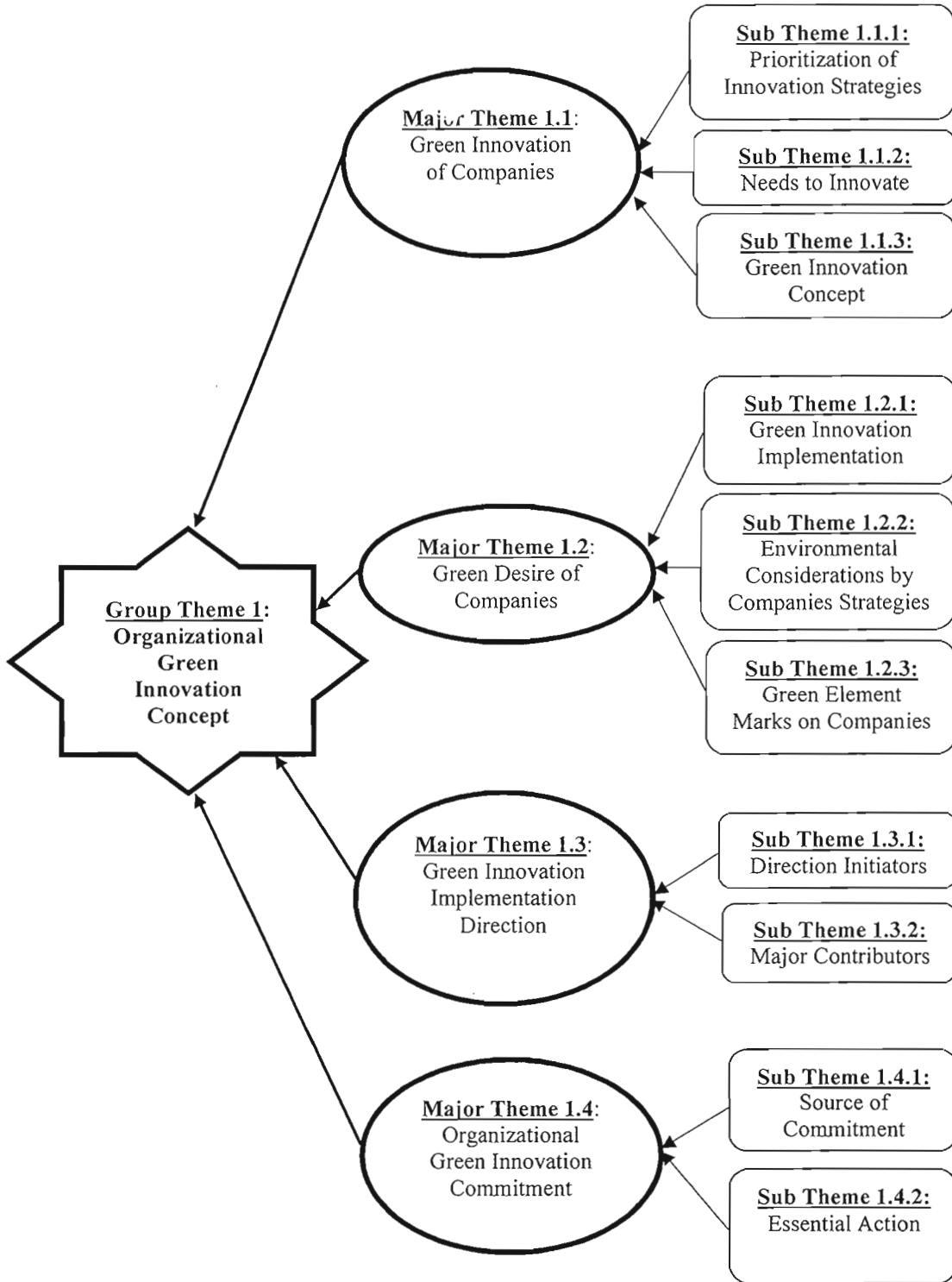


Figure 4.1
Group Theme 1 that Shows Its Major Themes with Dedicated Sub Themes

4.3 Group Theme 2: Green Leaders - Change Agents

In this study, green leaders term was defined as people that hold top management position in the company who believed, encouraged, held up and implemented the green innovation concept in their organizations. This was due to improve the quality of their workplaces, products, services and processes by taking into consideration of the impact to the environment, community and economy of the world.

So far as had been explored in Group Theme 1, the green leaders in the GLCs were the top management and the BoD. After this, these two groups of people would be referred as top management for the purpose of simplicity. It had been revealed that top management preferred to concentrate on the threats of innovation rather than on the opportunities, and had encouraged the organization and employees to do so as well. No matter what the disputes innovation had created, business growth had been straightly linked to retain the competitive differentiation that involvement of innovation was crucial to prevent company from becoming dormant.

From the observation of the interviews, the organization's strategy which held particular main business processes or functions would create the formation of innovation groups in their companies to deal with strategic solutions or outcomes. However, these innovation groups should consist of innovation alliance members from various groups to signify a cross functional disciplines and had differed in terms of seniority so that diverse opinion was communicated.

The details of the four major themes were explained below:

Table 4.7

Synopsis of Major Themes of Group 2: Green Leaders - Change Agents

	Major Theme	Explanation
2.1	Motivation to Innovate	In searching for the motivation to innovate, it was the intention to find out where the motivation came from, the reasons to innovate and where green had been fitted into the innovation aspiration.
2.2	Green Business Strategy	It was required to identify the priority to implement green innovation, and saw if there was any change in the management and what was the dilemma of the green.
2.3	Decision Maker	Although the top management had clearly been defined in many theories of management, this study still tend to be acknowledged who did the decisions in the companies especially related to strategic green decision, and designations that had been considered as part of the Team.
2.4	Change Agent Leaders	In ensuring the real attributes of the top management, the participants' views were recognized that could provide information about the normal and green attributes of the leaders.

4.3.1 Major Theme 2.1: Motivation to Innovate

The culture of the organization had been intensely shaped by the top executive and the top management team closed to the leader. The principal esteems and conducts that had been displayed by the leaders of the organization would infuse all the way through the company that could craft a very strong culture. Therefore, it was trusted that the organizational leaders had to inspire and tolerate the healthy degrees of

venture taking and welcome the learning, development and mixture of viewpoint. These features had promoted innovation and facilitated to drive solid durable financial performance.

The researcher was agreed with the participant, Tun M when he said:

“People who were willing to migrate (innovate for improvement) that already was one quality. You were going to migrate because you wanted to do better yourself.” (Tun M).

4.3.1.1 Sub Theme 2.1.1: Motivation Origin

One of the participants, The Statesman, had enlightened by giving an economic scenario within the case of Malaysia. The motivation to innovate the economy was coming from the necessity because Malaysia was facing a lot of unemployment and the government had decided that the agriculture did not hold any promise. When Malaysia was an agriculture country, there were not many jobs because in agriculture, one acre of land could only employ at the most one person whereas the government needed more people to be employed. On the contrary, if put up a factory on one acre of land, then 500 people could be employed. As a result, obviously Malaysia had making better use of its assets. The decision to industrialize had been easy but industrializing itself and implementing it was difficult. At that moment, Malaysia did not have any idea what industry to be embarked on. Beside of having no idea, it also was not in the capacity to start its own car industry or something like that. On top of that, he added that Malaysia had no advantaged due to the technical know-how, the management skills, the understanding of the market, and even capital to venture into

industries. Therefore, the government had to plan things based on the assets that was available at that time. The government had to find a business that did not require trained workers if the workers were untrained.

The participant Tengku K also agreed to what Tun M had been saying and stated that:

“So far there was none innovation directives from the management. Now, it was not just GBI but also IBS.. industrialized building system. So, the motivation to innovate was depend on the needs (building requirements from the government).” (Tengku K).

As for the GLCs, the motivation to innovate had come from many aspects. The researchers were told that the motivation basically was rolled up from the business position of survival and current trend. Below were the statements had been made by the participants during the interviews:

“It was how you really adjust yourself, adjust your skills to different environment, and applied your skills and knowledge to different environment... migrating to different environment and we kept adjusting and learn.” (Azlinda AZ).

“So, we had one network that actually looking up for new ways of doing things that could become more efficient whether it was green or not.” (Datuk A).

“So, we started with the initiatives that had the least impact on cost. That was why we took a step by a step.” (Haji M).

“The motivation for Repso and I think for all oil companies was basically for us to understand what was the future demand and obviously was corporate social responsibility.” (Dr Johan).

Nevertheless, this study had informed that the force from the public who was concerned on the perils of climate change had stimulus the companies to innovate into green too. The perception of the consumers was very important because it involved

the reputation of the company in the eyes of the consumers. As being told by Dr Johan, the motivation of his company basically had been the vision of what the business would look like in probably 15-20 years. Repco had regarded its reputation in term of its contribution in helping the environment. Same applied to the GLCs P where Haji M stated that the top management was looking at the image of the company. Shared the same views with Dr Johan and Haji M was Nizam T where his company, GLCs H was innovated to be more people-focus and be more proactive towards issues rose by their employees.

All participants had arrived to an agreement that the most motivation would be the government encouragement such as tax incentives for the companies which producing green innovation products and services. Tun M revealed that government was the biggest spender because if they had one so-called major or mega project, the spin-off from there had been very big. However, when government spent money, it got back the money not only in terms of profit but also it got back through taxes. It was confirmed by the participants that the support of the government had inspired them to educate the customers by changing their life style to take advantage of energy efficient materials such as energy save appliances, hybrid vehicles, electric vehicles, green building and renewable energy including solar, wind, geothermal and fuel cell energy systems for their home.

4.3.1.2 Sub Theme 2.1.2: Reasons for Innovate

It was informed during the focus group discussion by the participant from GLICs C, Aziz A that the situation faced by the GLCs was getting tougher and tougher to survive every year. The companies had been competing with the existing and new comers. Everybody was having the same problems and they needed to focus on innovation in order to strive. In addition to that, the participant Hassan S of GLCs M said the company current practice was not wrong, instead it was not right. He elaborated that what he implied as ‘not right’ meant the current practice could be corrected, while ‘wrong’ meant the practices had to be demolished and replaced. Without doubt, **the participants had confirmed that innovation was needed as the powerful positioning strategy because it would make the solution affordable, different and unique to every company.**

The Statesman clearly had verified that company needed to follow its environment surround before the top management made a decision. He had stressed that the company needed to innovate not only just to survive but the most important was they wanted to succeed. They chose to improve for betterment. The potential for failure would have increased with lacking of enthusiasm to innovate and worrying of undertake new challenge. It also had been noticed **that innovation was unlike change because innovation was a process whilst changes were occurrences.**

According to Azlinda AZ, innovation required the company to really adjust themselves, modify their people's skills to different environment, and apply those skills and knowledge to different situation, migrating to unusual setting and they kept adjusting and learn. **Thus, the researcher had perceived that innovation had to do with the process to discover prospects and took advantage of them before the competitors did.**

This study also had comprehended that innovation was a head start to elementary transform in strategy that impacted on how and why the companies operated the way they did. Interestingly, innovation of the companies was not on the companies' tactics but on the principles that lied beneath it. As being revealed by the Statesman, when we went to other places where people were much more advance, much better organized, we would feel inferior. As a result, we would get motivated by this comparison to innovate and improve.

Although they already had their Standard of Procedure (SoP), Tengku K had disclosed that they had to keep update the good things (innovation) for improvement and improvise what they currently had. This was because when the GLCs saw the market was changing, they needed to change their strategy and forecast the technological change accordingly. If the companies ignored or pretended that the market change was not exist or would not affect them, then the companies would struggle to survive and possible would be obsolete soon.

The findings so far had determined that innovation was the foundation of achievement in corporate surroundings when executed something novel, rare, exclusive, and remarkable to promote the company and preserved the brand equity and outlook within the minds of the consumer. In the long term, when the innovation in the technologies was within the company's means, the governments would make more savings and indirectly freeing up extra funds for other growth objectives. This had been well said by the Statesman:

“Without innovation, you would stifle your own business. We could not do business. And that would mean the economy would shrink. You had to think (how to become better and profitable).” (Tun M).

4.3.1.3 Sub Theme 2.1.3: Green Innovation

In order for the companies to be different from their competitors, they had to have the organizational innovation and willing to invest in the technology. It positioned the companies to help in resolving huge global challenges due to the climate change and to serve value to their customers.

Datuk A told the researcher that his company had one network that actually looking up for new ways of doing things including related innovation that could make his company became more efficient whether it had green related or not. The top management must always keep up with the latest trend and regulation because as a sole utilities company in the country, its investment were huge. These also had been stressed by the participants:

“When face with a problem (in your business), you had to gather all the information. And once you got the information, you tried to relate it to cause and effect. What had caused this thing to happen. See, if you knew that then you would know what was the problem.. the real problem. Then you treated that thing. Then you treated disease, you did not treat symptoms. This was also applied in technology, operation and administrative.” (Tun M).

“And I think because the biggest learning (through the demand and regulation of green).. we talked about stretching because leaders (and company) were developed when they were being stretched. I think that was where we got maximum learning (to venture into green innovation).” (Amirul R).

Interesting to note as what had been claimed by Tengku K, adding green elements into the organizational innovation were not actually a new thing. It was just a perception that green was huge because now the government had insisted that all the buildings were green. When the direction was to be green, his team would need to do green on their design. In fact on the site management, there were few points like rain harvesting that people had done it for ages. He explained that the rain door was apart the harvest channel back to the tank which then used for irrigation. This was the part of green innovative where the water from the air conditioner that came out had been pushed back in. The sun shade for the daylight that came in also had been practiced for a long time.

On the other hand, for the oil and gas industries, Amirul R had expressed that it was important for his company to really need to be aggressive when it was required them especially in the context of turn around the companies when the carbon footprint had been the mandatory focus on the corporate strategy and requirements of the government. It was very clear that the fossil fuel product needed to go thorough green innovation operation to improve its quality.

It was a good analogy given by the Statesman when talked about adopting and adapting innovation. When Malaysia was facing with problem of unemployment, foreigners were asked to come in with their capital, their know-how and their management skills to set up factories here.

“Our objective was only one - to create jobs. That’s all. The rest we didn’t care. We didn’t even want to tax them. We didn’t get money out of them is alright. They must create jobs. So that way we solved the most important problem - that was unemployment. So after that of course over time our people would become more skillful, they understood management, they understood the business, then only they began do things on their own.” (Tun M).

Another appealing green innovation approach happened in the automotive industries as revealed by participant from GLCs D, Mazlan AS which similar to what the Statesman had mentioned above. For GLCs D to grow and making profit, it would do collaboration with other companies that did not have the green expertise and knowledge yet in Malaysia. It took that approach since it could not compete with the national car manufacturers, thus it had to do joint venture with them and became the national player.

4.3.2 Major Theme 2.2: Green Business Strategy

Nowadays, the slogan ‘going green’ had encouraged the strategic managers to talk about the best practices for the company to formulate and execute green strategies actively. There were many significant rationales for the companies to venture into green as had been explained by the participants during the interviews such as meeting the requirements of the government, a part of their corporate social responsibility activities and to win a competitive advantage.

Thus, this study was very much interested to see how green had been positioned in the companies' business strategies.

4.3.2.1 Sub Theme 2.2.1: Green Prioritization

The Statesman had been enlightened that any decision making must refer to the environment of the industries especially when concerning green. It was also need to fulfill the objective of the business of the company. He had been stressed that there was no perfect decision because all decisions had weaknesses. But the important thing was whether the company was willing to recognize the failure early enough to take corrective action. He had advised that the company had to plan their things based on their assets in terms of workers, money, and knowledge among other things.

Similar to what the Statesman said, some of the participants in the focus group discussion had believed that it depended on many situations to embark on green:

“In the carbon footprint issue, it was about the company... we were talking about GLCs B because it was about representing Malaysia.” (Amirul R).

“Once you were keeping repeating that vision towards green, then whether we like it or not, we as staff would tend to incline to that.” (Hassan S).

“But believe me our contribution as GLCs were big. I thought now with the Prime Minister coming in... you know.. doing new things that related to green initiatives and slogan hopefully his momentum.. what you call.. could expedite the process.” (Aziz A).

However, to Dr Johan of Repso, green innovation was not in full blast yet because there was always demand and supply issues. The demand was coming from the government regulation and real awareness from the consumers, whereas the supply

had been provided by the companies whether these companies like it or not they would be forced to move toward that direction. The move began in Europe where the head quarter was situated. The culture of green had been rapidly done in Europe compared to Asia. He added that Asia was still slow and probably needed the demand more and became less choosy of the supply. He also enhanced that the technology had played the important thing. Basically, his product LPG was a clean product and obviously it was not very high in priority of green innovation but more in reinforcing. But Repso had put it as very high priority because the bottom line was they tried their best to be green and also maximize their profit.

Fascinatingly, green had been greatly recognized in the utilities company. As confirmed by Datuk A, his top management had already approved green policy, the strategic trust on green, the areas to focus on, and which division actually to take care of what. The Generation should look into how to generate more efficiently so that they saved more fuel and reduced the carbon footprint of that generation. The transmission needed to reduce more loses in the rhyme so that they did not have to waste so much on electricity. The Planning side of Division would synchronize with their green policy, where the strategic trust should be. So, each of divisions would come up with their own different green project that had been coordinated centrally by the Vice President of Planning. According to Datuk A, green was another new technology that GLCs Q had incorporated and at the moment, they had evolved and if the thing became too big then they would form might be one subsidiary, or department, or division.

On the other hand, to Haji M's company green was not seen as company strategy yet but more as projects strategies. Green was not enforced because it depended on the project's demand. Thus, it was not at the higher rank of the corporate strategy. At the same time, Haji M had expressed his worried that if greenness had not been in the consideration in their projects, they would be left behind and could not be competitive in terms of being categorized as advanced company who looked into greenness initiative. One of the greenness initiatives issue to Haji M's company was due to having additional cost in their projects.

“Green issue was stressed on big projects.. projects that scale more than RM150 up to RM350 millions. For the residential projects, we were not introduced it yet although there were other developers who started to look greenness issue in residential projects. But this was a new thing in residential. I think for big projects..big institutions like office complex might be up to 1 million square feet.. the usage of the energy was a lot especially to cool off the building. I think the main emphasis for these projects were the priority. Normally, there was no emphasis to the residential project..might be would be considered in the future.” (Haji M).

Tengku K also added to Haji M's viewpoints that there was no special idea from the management to make their buildings to be green because they had their profit margin that already had been fixed. They also had to comply with their Board's direction too. Similar to what Haji M had been saying, Tengku K noticed so far green was not considered by the top management as priority but perhaps would do when all the developers or the players in the countries were going towards green, because obviously they did not want to be left behind too. At the moment there was no sign that his company would go for green fully because for example, it had practiced the paperless but it was not fully implemented. It did not mean that the company was

less for green since old time but it just that material that they used added only few points. It was not major contribution to green priority, elaborated Tengku K.

4.3.2.2 Sub Theme 2.2.2: Innovation Management

It was a very challenging to have the ability of the people in the companies to keep up with the rate of innovation and technology change in the industries. In order for the companies' to meet their customers' needs also required them to change their corporate strategies, their organization structures, their operational systems, their boundaries and expectations of their staff and managers. This was confirmed by the Statesman assertion:

“In order to see the fast result of the innovation, you changed with other men (innovation team). So, that was not a very good system. You had to pay a price. You had to give time for the innovation to succeed. Might be the damage done would be bigger but if you did not give the time at all, you did not know whether they were capable of correcting themselves or not.” (Tun M).

From the focus group discussion interview, this study had found out that in order to manage the innovation, other priorities needed to be considered too such as leadership, benchmarking, adaptation reactions to possible effects of a changing climate; and ensuring approachable support from the government as had been revealed by the participants below:

“Whatever we did, it was about what was best for the team, what was best for the organization, what was best for Malaysia. Yes, because Pertamina for example same.. even they were OIC (Organization of the Islamic Countries) producing more than us but looked what happen to them. It was not being led by leaders that were competence and innovative, the company could fail.” (Amirul R).

“Because over a period of time, circumstances at work.. the external forces really changed your personality, the way you think toward innovation. They needed to have that.. benchmarking.” (Hassan S).

“Might be some people, let say company in the same place.. different departments, different places in the organization.. so might be innovation process a bit slow. This environment that we had was not cater for people to be more challenging, not to say innovate. To reshape the organization based on innovation I think was very much depend on the government concession, the agreement, the government policy, the public needs and so on.” (Azlinda AZ).

“But our company vision (to be green) was not meant to achieve in short time. Vision was to guide the effort for us to take the necessary action to be innovative in green. For example from the programme, the systems, then we knew from where to go. I think to reshape the organization with innovation it should start with the vision. That was what I could share with you.” (Abdul W).

Haji M verified that in GLCs P, there was no need to have management change to manage the innovation with the intention of maintaining the company’s outlook on green. His company had mixture between the young people who were more sensitive to new things and the old people who were less sensitive and preferred the old ways. Haji M believed there was no need for the change of management based on individual but change in terms of thinking that could be adapted to level of green acceptance. He was suggested that for the first project they might get the certification, and for the next project they would get the silver rating. They could not see this thing so abruptly to be certified at maximum.

When talking about innovation management in the GLCs Q, Datuk A explained that they were still practiced using their existing departments and divisions. This was because the same people were handling all these things already and innovation

especially green was a part of the technology that they needed to accommodate. Therefore, there had been no issues of innovation management being neglected in this utilities company.

4.3.2.3 Sub Theme 2.2.3: Green Dilemma

As being highlighted by GLICs C, every year things were getting tougher for the companies to compete and survive particularly when green innovation was the concerned. No company could get away from competition with their rivals either local or international level when demand to preserve the global was the main issues. So, implementing green innovation could be a new adventure to some companies which were new to this.

What worried the companies the most, the researcher had discovered, was the costs linked with surviving the move going green that was very distinctive relying on the magnitude of a business. Companies had to allocate grant to funding the swap to green innovation implementation. At start, the implementation of green innovation might charge a large amount of money even though the process should eventually save the companies money. In addition, the above move usually demanded the ability of the companies to design, build and implement the necessary new technology processes and systems to support green innovation. As a result, the company had to acquire new talents and train existing employees on the new green innovation environment as had been mentioned by the participants followed:

“I think green require a lot of investment. Many innovations require investment in research... even in money in fact. In the financial aspect, it is more expensive. Actually it is not viable at the moment.” (Datuk A).

“Through green building initiative, we can be categorized as progressive company who look into greenness innovation. But one of the greenness initiatives issue is having additional cost. last year and this year.. we have to study the cost sensitivity... additional minimal cost.. 3 to 5% of the construction cost.. multiple to the project cost about RM400 millions so it's going to be a lot. We have to be very careful to bring the issue in.” (Haji M).

“You need to fulfill your company's objective and then you need to access to your assets in terms of workers, in terms of money, in terms of knowledge etcetera. Then you have to plan your thing based on your assets. If you have workers who are untrained to green, then you should find a business that doesn't require trained green workers. But if your industry is high tech in green, you need knowledge workers. So if you have green knowledge workers, then you can think of high tech. But if you have people who are a little bit.. not very intelligence.. just putting screw.. we can have only assembly.” (Tun M).

The high price of the green products was also a rejection factor to the customers at the moment as being uncovered by Haji M. Only the MNCs and government were giving support for GLCs P green buildings and they were willing to pay more to rent these building because it saved the energy cost. As for the Statesman, there were many ways the companies could get the result better. To him, the companies must find out why their buildings had not been selling well or rented despite of all the benefits green building could offer. Thorough act would determine whether it was the price, the quality of the product or the salesgirl who handled the customers were the problem. So, whatever reasons they had gathered, then they could act by given better renting price, improving the quality or changing the salesgirl. He ensured that once the companies had got rid of the causes, then they would get better profit from their green buildings.

The effort of the companies to endeavor into green might harm their images because what had been regarded as a green practice and what had been not mostly was depending on the individual company's definitions. If a company related its impression to green exercises and later discovered its product, such as fuel, had now believed was bad for the environment due to the carbon footprint, it would jeopardized its appearing deceitful as mentioned by Amirul R:

“That is why we need feedback from our people who deal with green innovation to calculate the risk too. That’s why we must know who they are and have some measures.. taking back on investing also.. the best team, of course. It’s mixture.” (Amirul R).

This study had been acknowledged also by the participants that international trade could have disadvantage to non-green companies too. This was due to many companies had reluctant to implement green innovation. They worried that the practices would turn into a barrier to the free flow of goods and lucrative trade deals especially their anxieties of losing an international trader that was not taken part in green manufacturing. As had been revealed by participant Mazlan AS of GLCs D:

“We have the green innovation and technology but we cannot compete with the national due to the policy of the government. Therefore, we joint venture with the national player by sharing our expertise and technology in green and become a part of the national player.” (Mazlan AS).

4.3.3 Major Theme 2.3: Decision Maker

At present business atmosphere, people found that it was not easy to employ the developed strategies as a result of theoretical innovation. Therefore, to ensure the innovation to be successful, the top management must identify the significant roles

that their staff could result in and worked out with the clients. This was due to the evidence that the alterations to a strategy involved the front line analysis, and the effective way to accomplish this by incorporating those who were operated at the front lines. The involvement of employees in the innovation development process would not only improve the quality of innovative inspiration, but also had to increase employee's morale.

With the aim of innovation to be successful, everybody must be on board. If only the staff was thinking like innovators without the management being at the same level, the motivation would not continue. Companies usually happened to very contented with their existing methods of doing things and believed what worked today would work tomorrow. On the other hand, it most definitely was not happen that way and it was a sound point in time to amend that belief and made the innovation got underway instantly.

4.3.3.1 Sub Theme 2.3.1: Decision to Act

According to Tun M, being a decision maker was a gradual process. Firstly, the university qualification was useful though it did not mean that a person could become a good leader to make a decision. Secondly, he or she had to go through experiences like managing a small enterprise first, and showed his or her ability before gradually promoted to more responsible jobs. He kept stressing that it was not going to work if companies could get somebody who being trained and put as a leader without qualification. It had to be a gradual process.

However, Tun M also reminded that companies could not be sure the leaders they had chosen would perform and that was the risk to take. These leaders needed to be given some time by the companies because every now and then early failure did not mean that throughout they would fail. Later on they would succeed but if only they had been given enough time. He had agreed that there were bad managers and then things would keep being bad. On the contrary, a very good CEO would build up the company and made it profitable.

It was obvious to the researcher that the variance stages of management had insisted on diverse skills to effectively make the decisions such as computational skills for supervisors, innovation for executives, and negotiation and compromise for managers. The participants gave their opinions with regards to decision making in their companies as followed:

“Well, young people should not be given too big jobs. First, any managers whether they are young or old must understand the environment in which they are going to function. The leaders will have to be taught to do things methodically. You must follow a certain pattern, not rigidly but roughly a certain pattern.” (Tun M).

“But our company vision is not meant to achieve in short time. This vision is to direct our effort to take action. For example from the programme, the systems being endorsed we know from where to go. I think to reshape the organization should start with the vision. That is what I can share with you.” (Abdul W).

“I think what is important is that you have to be aggressive when it requires you especially in the context of turn around the companies or companies in crisis. It is applicable to GLCs B, yes... but I don't think for all GLCs. If you are strong in the ownership and accountability... if you somehow feel that you could not perform as leader .. I think you will step down “Ok I've done wrong.. other people can do better than me, and I better step down.” (Amirul R).

It was also realized that as the companies progressed from a paternalistic to synergistic formation, there was a growing requirement for stakeholder involvement in the decision-making progression as had been determined by the participants below:

“So definitely you require top management’s direction... or else nobody will spend or approve any budget without top management’s approval.” (Datuk A).

“We have the say.. but indirectly to the government. The bottom line is really important. Are they unanswerable to our stakeholders especially for GLICs C.” (Aziz A).

“So this is actually the needs why we need to have good leaders, leadership programmes in placed.. because we need to have leaders, to have people so that up to the challenge. Reshaping of the organization I think is very much depend on the government concession , the agreement, the government policy, the public needs and so on.” (Azlinda AZ).

“We have corporate governance. Under GLCs, whatever decisions must go to the Board. The TH Technologies representative is on the Board. Everything must through the Board. Executive Director is not making decision for the TH Technologies but based on the authority limits under our designations. If it is fall under his jurisdiction then he can make the decision. When Dato’ came, top management has change...so we get a clear direction. Now we are no more full fledge contractor... you don’t have machine, no workers. Then only we know our direction.” (Tengku K).

“But they have a very good manager before. The CEO was a very good CEO.. it was profitable, he built up this... But because of the political reasons he was removed. And they put in another man who is not competence at all. And over four years all the reserved are all gone you see.” (Tun M).

It could be said that decision-making gradually more occurred at every level of a business. The huge strategic decisions about investment and focus of forthcoming growth had been done by the BoD. The tactical decisions about how each department might contribute most effectively to the overall business objectives were being the responsibility of the managers. Nevertheless, quite common employees were

increasingly anticipated to make decisions about the accomplishment of their own everyday jobs, answered to customers and upgrading of companies' exercise.

4.3.3.2 Sub Theme 2.3.2: Strategic Green Decisions

This study wanted to profound the understanding on the decision making that had been regarded to environmental framework of climate change and restricted renewable reserves. The researcher defined strategic green decisions as the entity and shared green decisions contained by or involving departments that were helping companies to progress their operating situation, adjusted to changes in their outside institutional environments, and concurrently produced environmental advantages.

As being revealed by Tun M, when the government had cut back on their expenditure, somebody would have been suffered. Some small contractors would suffer. Even the big contractors would suffer. Thus, that kind of thing had been the thought of the government including the strategic green decisions at the national level.

Therefore, Tun M added that decision should follow the environment that surrounded the business. The companies needed to fulfill the objectives of their businesses and had accessed to their assets in terms of workers, money and knowledge especially if their industries had high technologies such as the green innovation where they needed knowledge workers. There was a risk that leaders that had been chosen were not performers. They could not perform because it took time to learn their jobs especially related to green, to implement their strategic green plans and decisions further more to

solve the problems. He had stressed that there was no perfect decision and all decisions had weaknesses. The important thing was whether the top management had been willing to recognize the failure early enough to take corrective action. As a result, leaders had to be given time because sometimes early failures did not mean that throughout they would fail. Later on they would succeed.

The Statesman highlighted that we should feel inferior when we went to other places where companies were much more advance and better organized. They were not only just to survive but also they wanted to succeed. In order for the companies to improve, this comparison should be the motivator. The management must find out why their products or services with regard to their strategic green decision were not selling well. Was it the price, the salesgirl handle the customers or the quality of the product? Once the management knew why, then they could act. If it was quality, then they improved quality. If it was the salesgirl, they changed the salesgirl. They got rid of the causes, subsequently they got their result. Tun M advised that from all the information gathered, the leaders should check as doctors examined what had been the possible diseases and then checked the possibilities on how it corresponded to the symptoms. So, these were the same methods could be applied even in strategic green decisions.

For the insurance company, Azlinda AZ said that it was how they companies really adjusted themselves by adjusting their people's skills to different environment, and applied that skill and knowledge to different environment. Migrating to different

environment such as green would require them to keep adjusting and learn as it was unavoidable in the future.

For the point of view of Amirul R from the oil and gas industry, his top management treated their strategic green decisions as depending on their values, culture, and circumstances at the right time or the right place. The ways they had been looking at things were very much nurtured by the circumstances surrounding them. He still believed leaders who made the decisions had to be nurtured by having the right infrastructure especially Gen Y who needed to be engaged and inspired because they no longer accepted direction from the boss. They had that kind of sense where they wanted to know the vision of these leaders and the reasons of the decisions made. His company had identified the right people for the right assignment. They did not give their people the assignment that they would close with one eye because the company would want to get the feedback from their people to calculate the risk of the challenge ahead. Therefore, it was critical for them to know who these people were and some measures and traits that taking back on investing who made a good decision. This was similar to what the Statesman was saying where the best man had been made through a mixture of gradual lots of working experiences. Amirul R of GLCs B suggested that the organization needed a new person to lead especially when the decisions and ideas made were already known to the employees. **Stagnant top management was not good for the growth of the companies.**

As the sole utilities provider in Malaysia, the top management of Datuk A's company had exposed the staff on these green policies and through all these initiatives each department needed to play their parts. The Planning side of Division was coordinating with their green policy, where the strategic trust should be. As a result, each of Division would come up with their own different green project. However, since it had been coordinated centrally by Vice President of Planning, then there was no need to form specific department by pulling people who were currently in that job because green technology was based on that technology itself.

As the building contractors, Haji M had addressed themselves as the doer where the top management had the vision about the green initiatives and his teams had been searching for the things that could at the rate they could do and able to bear it. Tengku K also supported Haji M's statements where the top management commitment was there though they were not particular because this green thing had been insisted by the government. Therefore, they saw that there was no need to look at the management change to maintain the company outlook on green. Although the company was a mixture between people who young whom were more sensitive to new things and the old people whom were the category who were less sensitive, Haji M had believed the benefit of strategic green decisions would come sooner or later.

From the interviews, this study had explored that managers could be trained to make better strategic green decisions. They needed encouraging surroundings so they would not be unreasonable condemned for making incorrect decisions but instead

their colleague and superiors should properly support them. With green innovation as the requirement and without the support from the management, managers would react by ‘playing it safe’ to lessen the jeopardy of belittlement which shrunk the business’ success and held back risk-taking and creativity in retorting to market revolutions.

4.3.3.3 Sub Theme 2.3.3: Top Management Team

Commonly, the management levels consisted of Administrative or Top Management, Executive or Middle Level of Management and Supervisory or Lower Level of Management.

As the main objective of this study was to focus on the top management level, the researcher had been acknowledged by the participants that different companies had different organization structures to suit their industries and environments. Normally, the top management members were the BoD and the CEO. In some of the companies, the CEO was also known as President, MD, or General Manager (GM). The Shareholders of the company selected their representatives among them as the BoD, which later the BoD would select the CEO of the company.

Two of the participants shared their members of the top management level which were not similar in terms of the designation,

“Well we have what we call Jawatankuasa Tertinggi Kumpulan. That will be the CEOs, COOs and Vice Presidents of Generation, Core, Distribution, Transmission, VPs and above. Basically, the Head of Department are mostly engineers.” (Datuk A).

“In Repso, fundamentally I have my management team who are basically are the heads of the departments. Zaid is one of them, is the plant manager. Then, I have safety manager, finance manager, marketing manager and business excellence manager. So, those with managing post and above are considered as top management.” (Dr Johan).

For both Haji M and Tengku K, their company had BoD and one of the members was their Executive Director. Their immediate boss was the GM who reported direct to the Executive Director. Then, they had project managers at the sites who reported to them. They considered themselves as the middle manager.

As had been mentioned by the Statesman on the function of BoD,

“The Board function is not to manage. The Board function is to oversee that nothing is going wrong. But when things are going right, you don't interfere.” (Tun M).

According to Abdul W, in the statutory bodies like GLCs, principally government had the same policy for the CEO. The No. 1 post had been seconded from the government, the No. 2 post would be on the contract basis and the No. 3 only would be people from the internal of the organization. That was the reason why the CEO of GLCs basically had jumped from somewhere within the statutory bodies. He had detailed out that this government policy was due to the grounds that they did not want the GLCs to be owned by any particular groups in the organization. That also explained that even, for example, if the CEO was from internal, they would give him a contract basis. The government would only confirm the appointment of the CEO one day before that person retired.

As had been said by the Statesman, leaders could be made by nature and it was possible to develop good leaders. As for the GLCs, he afraid that nothing at all the company could advise the Prime Minister about who were appropriate to be the leaders because the choice had been made for the political reasons and not because of the performance. If the chosen leader had no management capability, the failure would show very quickly. However, he had added that if before the company could see the result, they changed with another man then it was not a very good system. The company had a price to pay when choosing who to lead the company. When giving a time to the leaders, the damage done would be bigger, but if the company did not give enough time at all, the company never know whether the leaders were capable of correcting themselves or not as being supported by two of the participants,

“Nurturing must be set first in order to form a leader.” (Hassan S).

“We have the say (who to choose as the leaders to the Prime Minister) but indirectly. The bottom line is really important whether they are unanswerable to our stakeholders especially for GLICs C.” (Aziz A).

Interestingly to note was the statements from Amirul R. He had enlightened that it was the hope of his company that the Prime Minister had made the right decision who would lead the company. The Prime Minister must not make his own decision without received feedback from the current CEO whether there had been a successor internally and from other people such as vendors and suppliers as well, and took that into his decision.

Amirul R believed within that intention too that the ex CEO of General Electric (GE), Jack Welch had speared GE over certain period of time. He strongly thought that one was very important because by having somebody from the internal – had proven record and having the same shared values, then the company had a better chance of profiting rather than parachuting leaders from the outside. These internal leaders they might be do finance for the first three years, after that they would be doing Human Resource, they might be going to marketing before finally they went to overseas definitely. His critical comments had been,

'One of the qualities of the CEO is his personal aspiration must align with the company and stakeholders, and also the shareholders' aspiration and vision. Then, this is translated into the values mentioned. To me that is fundamentally is very important because no matter how intelligence, how great the person is, but if his values and aspiration does not align with the company then it will be a problem.' (Amirul R).

The above Amirul R's statements had been highlighted by the Statesman on the role of the leaders. Leaders must explain what were the meaning of the work ethics and workplace discipline, also why it must be that way for example because the company received orders to supply something at a given time. The company could calculate how much time they required to supply the order and how many workers they needed to supply them. But if the workers did not come, and the company could not meet their target, then of course the company had failed which meant the leaders had failed due to incompetence.

This had also been confirmed by the Nizam T of GLCs H,

'So we're changing the approach.. still moving towards that. Good leaders must have inspire people and we have rotate our top talents all over within the company.' (Nizam T).

4.3.4 Major Theme 2.4: Change Agent Leaders

The particular focus of this part was on understanding the features and exploring the scope of the association between top management perception and those factors that stimulated and/or helped a green innovation decision in the Malaysian GLCs context. It had been described and added to the organizational theory with the intend of enhanced understanding those aspects that encouraged and/or smooth the progress of green decisions by the GLCs, especially eco-innovation organizations - a topic of only limited research up to now. The attributes of the perception referred to the leader's beliefs, traits and personality that combined would structure a signature that had been molded into the organization's leadership.

4.3.4.1 Sub Theme 2.4.1: Normal Leaders' Attributes

Nowadays, leadership had been considered by the modern theorists as an intricate interface involving traits, behaviors and situational attributes (Cavazottea et al., 2012; Stead & Stead, 2013; Stenmark & Mumford, 2011; Strand, 2014). It was the interest of this study to explore the demonstrated traits and attributes of the successful leaders where the suitable leaders could be complemented to the appropriate circumstances and to discern yardsticks of the perception attributes that this study wanted to train and nurture the most excellent leaders with regards to the green innovation framework.

The researcher agreed with the participant from GLCs M on the leaders from the baby boomers generation,

“Yes, I would say true... through nurturing than nature who is the one who is really suffice the leadership.” (Hassan S).

The Statesman gave many viewpoints that really important to be noted based on his experience as a leader and now advisor to so many GLCs. He learned from his father who was a very strong character person that all his children had to study hard and did everything to improve them. Although university qualification was useful but it did not mean that everybody could become a good leader. They had to go through experiences of managing a small enterprise first and showed their ability before gradually being promoted to more responsible jobs. He believed a leader must be very methodical, hardworking, painstaking and particulars. Such quality in a person could be developed only if he had came from a good culture that upheld integrity and regards honour as being very important and shame as something that was very degrading like the Japanese. Tun M was sure that if we did not have feeling of shame, then we really did not care what the result was which showed that we would not manage things properly.

The Statesman had informed too that if we were brought up with the right value system, then we might be a good leader. Leaders had to be taught to do things methodically and must follow a certain pattern, not rigidly but roughly a certain pattern. He suggested that leaders should not be aggressive in the sense of how they handled people under them instead they should be aggressive in promoting their

business. The most important was the willingness of the leaders to work hard and find out as much as possible about their business. They had to think about their assets and environment. The assets referred to the employees, their abilities, level of intelligence, knowledge, and also culture. Again, Tun M had emphasized that leaders needed to understand who their rivals were, who were they competing with and what were the rivals were doing as much as they could.

Without doubt, Tun M said it was the responsibilities of the leaders to endorse a culture in their companies. The employees had to follow the discipline of the workplace during the time of their working by being told what they had to do and deliver. So, that discipline of the workplace was a part of the culture. In addition, he considered it was the role of the leaders to explain what the meaning of work ethics was too. When the company had received orders to supply something at a given time, then the leaders could calculate how much time and how many workers they needed to supply that. But if the workers did not come, and then the company could not meet their target, and of course the company failed which also indicated that the leader also had failed. However, he thought the leaders who always scolding his people and all that, would not going to get maximum out of his people. But the leaders who do much better would gain a lot of respect and would be able to get the most out of his workers when they could manage their workers, friendly with their workers, understand their problems and did not just scold people. It was the quality of the leaders when they knew how to handle these things and there would be no taking of advantage but on the other hand when there was a genuine need coming, the leaders had to help, explained Tun M.

Among the verification of the participants on the leader's attributes in their companies were,

"Leadership must be seen and must be felt." (Hassan S).

"So, I think a better leader is a stronger leader. Sometimes we (top management) are so dominance.. the problem is leaders don't empower, and every decision you have to refer to the leaders." (Aziz A).

"Developing certain qualities and traits that demanded by the company. This benchmarking also whoever the new recruitment that we take in, they have to make up our mutual benchmark. Let say we cut off at 40 and the average mark is 40. So, whoever is going for the benchmarking, they must at least get not below than that." (Azlinda AZ).

"But nevertheless the focus on task-management is quite successful. But for the past 5 years we reshape the organization to be more people-focus. We want to reduce the union influence. We want to encourage innovation through people so we change the whole thing and we try to be people-focus.. go to the ground.. proactive towards the employees' issues rise." (Nizam T).

As the sole oil and gas company in Malaysia, GLCs B which had been operated in many countries in the world was insisted on their leaders to have more than communication skills, sharpen presentation skills and something that easily to expose to business awareness. Amirul R revealed that the leaders needed to learn about **financial analysis and other skills that were not easy such as humanity in order to be humble**. In his opinion, our culture was not strong in accountability and consequence benchmarking although we believed that particular traits were something that we had been acquired over a long of time, born within us and even we had copied from the experience we had. He intensified **integrity as one of his company highest traits that could not be compromised and it came with the accountability ownership**. Adding to Amirul R's statement, Abdul W also justified that leaders had

proven that they were performers because we believed that **leaders must be performers but performers were not necessary leaders.**

For the MNCs companies like Repso whom headquarters was in the Europe, the researcher found that the leader's perception attributes were seem not much difference compare to the GLCs. Based on Dr Johan's opinion, there were five traits that leaders in his company should acquire - **global vision, self-mastery, coaching and motivation, interpersonal skill to maximized shareholders' or stakeholders' interest, and the last one was value differences.** If the persons wanted to move along Repso's structure, they must demonstrate that they had mastery or competent. That was why Repso's process of recruitment was very stringent he added because obviously, the company wanted to see whether their leaders could **articulate their thoughts, had good writing and analytical skills.**

4.3.4.2 Sub Theme 2.4.2: Green Leaders' Attributes

This part was to distinguish the exclusive perception attributes of the successful green leadership as important because they were individuals being selected by the Prime Minister to lead the GLCs. This focus had permitted the researcher to understand whether these leaders were born with these distinctive attributes or being nurtured and improved throughout life.

Tun M saw that the most important perception attributes of the top management were **willingness to work hard** which related to be **very firm in whatever they did**, very **particulars, and painstaking**. As leaders they must find out as much as possible about their business especially with regard to green innovation, to understand the rivals that they had been competing with, and what they had been doing. In other words, the company required a very hardworking leader who was willing to stay back at night and at other time he needed to study hard on the current and future challenges whether it was green or not. He would fail initially but over time he was going to succeed if he kept on trying and correcting his mistakes. Tun M thought that leaders needed training though experience was good but before they were trained and told, they could not be good leaders. Every transaction, deal and negotiation must be properly recorded and these things needed training. We could not assume that a person could somehow or rather on his own able to develop his own methods. It did not work that way. He needed to have some kind of training and some experiences, and he also had to make assessment of his experience.

It was observed that green leaders must have the awareness and could adapt to their business change toward green innovation accordingly;

“Leaders must understand the environment in which they are going to function and follow the environment surrounds their business before they make a decision. They should not be aggressive in the sense of how they handle people under them instead they should be aggressive in promoting their business. With all the information gathered that related to green, now these leaders know what are the possible problems that they need to check on the possibilities and how it corresponds to the symptoms. I said they cannot perform because it takes time to learn their job, implement their plans and solve the problems. Sometimes early failure doesn't mean that throughout they fail. Well, that is natural tendency to take over what is already successful but whether the new leaders can continue to successful is another matter.” (Tun M).

“The green leaders must be very good with learning ability and agile to change to learn something new. So, this is actually the reason why GLCs need to have leadership programmes in placed among GLCs because they need to have good leaders that up to the challenge. I observe that these leaders really have to adjust themselves and skills to green environment perspectives because migrating to different environment requires them to apply their knowledge and skills and keep on adjusting and learning.” (Azlinda AZ).

“Due to the nature of the globalization and green moves, anybody who recruited by Repso must have the knowledge that one day they have to serve elsewhere and this shows that they are already competent. In his opinion, DR JOHAN stresses on the visions and the cultures change that have to be enforced through continued communication especially when there will be some portion of the company’s contribution towards the environment and it becomes re-enforcing for every layer.” (Dr Johan).

“I hope the PM chooses the right person to lead the GLCs because leaders are developed and get maximum learning when they are being stretched with green demands. They may be doing finance the first three years before they do Human Resource follow by going to marketing, and they are sent overseas definitely to expose into the carbon footprint challenge.” (Amirul R).

In his point of view, Aziz A had considered green leaders could be better and stronger leaders due to the contributions of GLCs to the country were big. With the support from the Prime Minister towards green initiatives and innovation, he believed GLCs could do new green innovation things that could regain the momentum of the companies and could get back the lost years for the last ten years.

For Hassan S, the strategic green decisions needed leaders who nature talented and brilliant but nurturing was very essential too especially in green innovation. He thought that at top management level it was not intellectuality because their leadership had been proven, seen and felt, but the most important thing was the proven track record they had gone through and changed. He also agreed with Amirul R’s observation that GLCs needed those dominance and aggressive personalities but they

must be assertive because dominance and aggressive attributes depended on what kind of green economic forces they were in, what circumstances they were in and what kind of political situation they had been in. He had added that once the leaders kept repeating that green innovation vision, the employees would tend to incline to that whether they liked it or not.

Tengku K saw the **commitment of the top management's leadership to comply with the government aspiration as the most important attributes when dealing with green innovation especially when the leaders did not have any technical background in green.** Even though they were not particular about this but the government had insisted on it. His concern was that either it was green or not, the style and characteristics of the leaders in his company had been the same. When the top management looked at the cost, then they would look on the profit instead of the green innovation impact. It was the practice of the leadership in the corporate organization and whenever the leaders changed, the employees had to follow.

Agreed with what Tengku K was saying, Haji M also associated **top managers as not necessary to have technical attributes but had to be sensitive towards green building initiatives which it was a common sense.** It did not require a person to be technical to make the assessment that save energy bulb used less energy from normal florescence light. There was no need to look at the management change to maintain the company outlook on green. The sensitivity at the necessity of the greenness and environment would benefit the future. On top of that, he had suggested that to be

sensitive to the technology that related to green, and how the initiative could bring benefit to the company should be the priority. The top management must see all these things at the bottom line of the company whether by using these green initiative would bring more profit or for the long term as for the image and others.

Here were some of the statements of green leaders' attributes being dictated by the participants;

"Since you cannot compete with the national manufacturer, you joint venture with them through green innovation initiatives and become the national player. The leaders must have the sense of urgency." (Mazlan AS).

"So, we're changing the approach where green is the main concern.. still moving towards that. Good leaders must inspire people and we have rotating our top talents all over within the company to get appropriate experience." (Nizam T).

"Women have that willingness to shoulder work and responsibility regardless it is green or not green kind of things. So, honestly speaking they should be able to lead and really come up with ideas, to manage the staff well and things like that because they are also intelligent and educated." (Tun M).

"You have to have personality and intelligence. If you are stupid even if you look very grand, it is not going to work. Intelligence means of course your background, the amount of reading that you do, and things like that.. this should be taken into consideration." (Tun M).

"In Repso, visionary and communication are the basic attributes that distinguish top management because their global vision especially in current green scenario must be very good and also delivering through others must be very good too. They don't need to have much coaching and motivation as in the medium level." (Dr Johan).

"I cannot deny the attributes of passion and determination in leaders because without passion how can we expect the leaders have the energy to lead and energize the whole organization. I believe the integrity and accountability ownership also come with it." (Amirul R).

After had serving GLCs B more than twenty years, Amirul R believed his **leaders must be a visionary person** like the late Tan Sri Zainal Abidin especially there would be more challenges in the future. The late Tan Sri was the leader that decided GLCs B could not just rely on domestic competitors at that time. They had to go outside and set the target 20 percents by the year 2000. That was the kind of vision to him that GLCs could not put Tom Dick and Harry to lead the organization or any other organizations for that matter. It was important for leaders to **be aggressive when it required them especially in the context of turning around the companies or when their companies in crisis**. The other perception attributes of **quality leaders was that they were interested in doing what happen at the ground** or otherwise they were high up there making policies and decisions which might have effected on the company's future especially in the carbon footprint challenge.

GLCs B also had treated **humanity as very important** because it was able to connect with its people emotionally. It was where its people had been inspired especially when the nature of its business needed it to go and operate in other countries. It did not want its people to be arrogant with the local people when working in the overseas especially when green and environmental issues were the main target for the oil and gas companies.

Sharing with the same views as the Statesman and Hassan S, Amirul R too contemplated that the way we looked at things were very much nurtured by the circumstances surrounding us. He still believed it was very essential in nurturing the

leaders through both the green physical and virtual infrastructure. As similar with Hassan S who felt blessed working in various MNCs, Amirul R said he also felt blessed because experiences worked with various groups in GLCs B. It was one of the ways that the top management had spotted their future leaders in GLCs B whom had **global strategic mindset** to compete with their giants rivals in the carbon footprint scenarios. GLCs B had operating in countries where they needed to manage people from different nationalities and cultures. That required these leaders to have the **learning ability and intellectual capacity to process all these inputs in terms of green challenges, environment, and opportunities of green innovation, and to translate that into company's green strategic actions**. The green leaders needed to learn very fast when they were going to the foreign countries, and to be able to adopt and adapt what worked in the organization in whatever particular environment there.

“At the end, I think the attributes of good leaders in GLCSs can be shaped by their background – family, education and working experiences especially when the organization needs new leadership to absorb new green ideas and innovation. Pertamina for example, even though they are a member of the OIC and producing more than us but when it is not being led by leaders that are competence, the company can fail.” (Amirul R).

4.3.5 Conclusion Group Theme 2

Green innovation implementation could immediately help the environment by diminishing surplus and unsafe emissions along with act in relation to protect resources that were limited and nonrenewable. Additionally, this process could lower costs for the business over the long term through the implementation of more efficient systems and fostering a company culture dedicated to innovation in processes that

could result in lowering the amount of waste a business produces. Nowadays, majority of the public had supported the companies that implemented green innovation initiatives and practices in their businesses. Consequently, by implementing this green innovation process, the company could directly improve its public relations and also increase their new customers.

The advice from the Statesman was a very good for the company to ponder:

'When face with a problem due to green innovation, you have to gather all the information. And once you get the information, you try to relate it to the cause and effect. What has cause this thing to happen. See, if you know that then you will know what is the problem.. the real problem. Then you treat that thing.. Then you treat 'disease', you don't treat symptoms.' (Tun M).

A big company could have the funds for the implementation of green innovation by putting in machinery that consumed less power for example so that they could save their power and electric bills. Over the long term, these savings had total up and could be substantial. The challenge was the starting cost to mount green innovation and technology because it might take years for the savings from greater efficiency to meet the costs of installation.

In conclusion, the decision making in the GLCs had been compelling shaped by the top executive in addition to the executive management team surrounding the CEO or MD. Although the decision had been made by the leaders, these leaders were responsible to meet the requirements of the shareholders and the government as well. The decision must suit the aspiration of the nation and political will.

These viewpoints allowed the researcher to focus solely on the leaders themselves and clearly understanding what perception attributes and characteristics had been exhibited by successful green leaders. It also permitted this study not only to match the right leaders with the right situations but also to discover benchmarks for what were needed to look for if we wanted to be (or trained) the best leaders we could. In addition, sometimes successful green leadership was more of a mark of successfully matching the leaders' unique skills and attributes with the appropriate situation, rather than changing or developing specific leadership characteristics.

This study would like to see whether green innovation implementation and initiatives had impact on the leaders' perception attribute because the dominant and control of the top management fulfilled the role as a dictatorship. It was more likely to produce a structure of silos and fiefdoms with a corporate culture that had been characterized by closed doors, secrecy and fear. Conversely the democratic leaders were more likely to spawn a culture of equals that had been characterized by attributes like: **teamwork, innovation, open and transparent communication as being discussed in the FGD.** The core values of the leaders had formed and shaped the organization, thus the stronger the leaders' personalities were - the stronger the impact.

The perception attributes that had been determined for the Green Leaders' were: **they had strong visions and strategies through their vast knowledge on green; they had addressed critical challenges appropriately by proposing big ideas and long term thinking; they were willing to commit significant resources and showed**

evidence of integration in dealing with green issues through effective communication engagement.

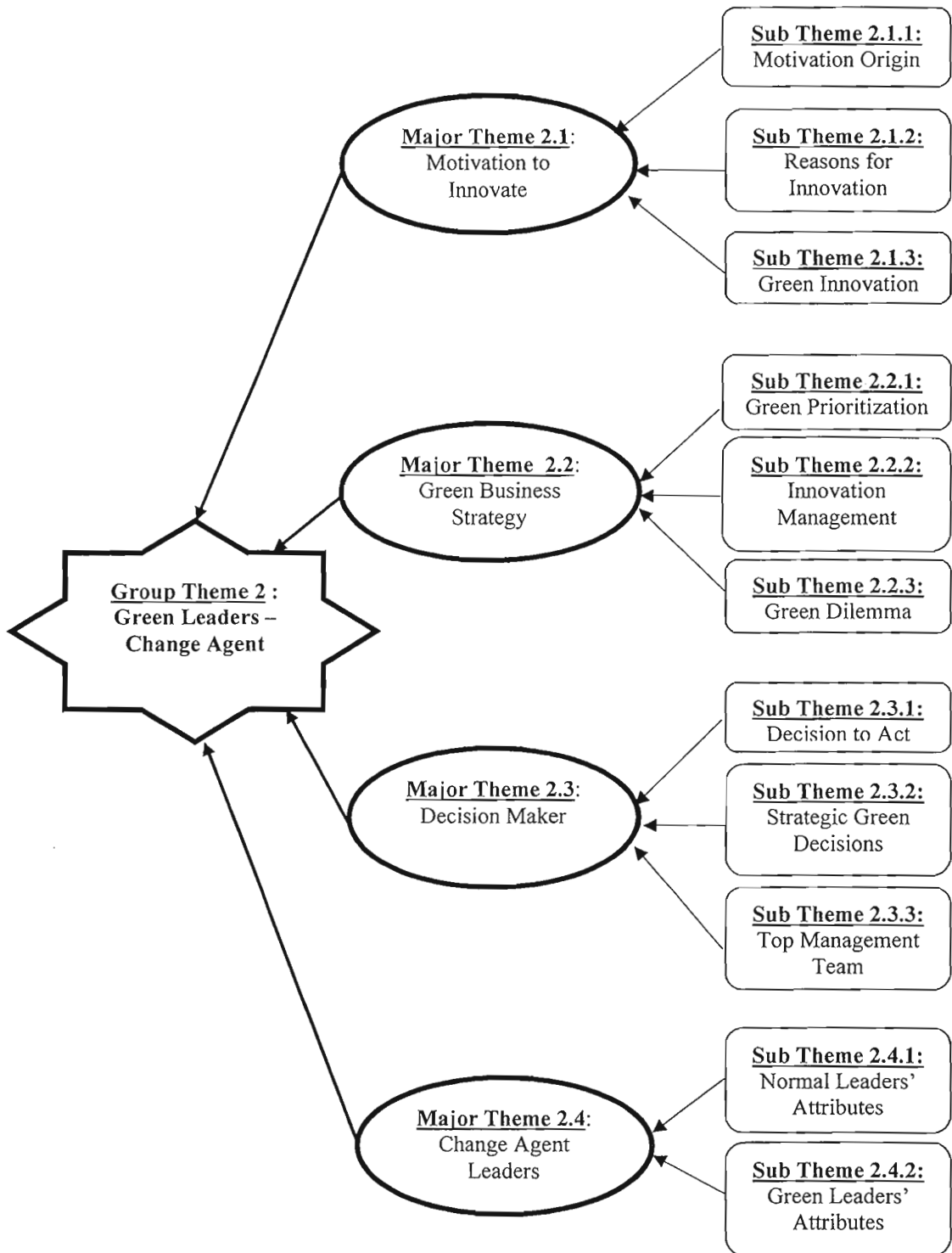


Figure 4.2
 Group Theme 2 that Shows Its Major Themes with Dedicated Sub Themes

4.4 Group Theme 3: Green Frugal Innovation

In this study, Green Frugal Innovation was referred to the innovation that prudently sparred based on the green concept that had been defined in Major Theme 1 of Group Theme 1. Through green frugal innovation, the companies responded to their limitations in resources such as expertise, financial, material or institutional would opt to use a range of methods that revolution these restrictions into advantages.

Green frugal innovation was not about innovation 'on the cheap' but above all was to use a range of methods to beat restraints from procurement to raw materials by controlling resources in innovative approaches to accomplish radical cost cutbacks and scalability in products and services. Successful green frugal innovation had minimizing the use of supplies during progress, manufacture and distribution. This was means of leveraging them in different manners that produce dramatically lower-cost products and services, and could be made accessible at large scale. Clearly, green frugal innovation had an unambiguously social mission.

The details of the five major themes were explained below in Table 4.6:

Table 4.8

Synopsis of Major Themes of Group Theme 3: Green Frugal Innovation

	Major Theme	Explanation
3.1	Green Competitiveness Advantage	It was important to determine the companies' competitiveness and how green could have significant in bringing more competitive advantage to the companies.
3.2	Eco-innovation	It was crucial to reveal the importance of being green, the outcomes of green innovation implementation and the requirements of the clean technology.
3.3	Green Innovation Adaptation	It was eager to learn where the process of innovations placed and how companies adapted to the green innovation implementation.
3.4	Green Benchmarking	During the implementation of green, this study needed to distinguish whether the green innovation was adopted or adapted, if there was/were company(s) being modeled, and/or learned from their rivals companies or industries.
3.5	Green Business Case	As leaders, it was accepted that leaders could not run from being innovative either they had value it from new perspective where green that had been practiced by other companies or initiated in-house.

4.4.1 Major Theme 3.1: Green Competitiveness Advantage

Environment issues such as global warming and carbon footprint gave a solid reason for consumers to turn to green and eco-friendly products and services because they helped preserved our communities and planet. On top of that, this move had led to sustainability of the environment which was the key driver of innovation, and carried a huge intangible and tangible competitive advantage that brought more potentially

business growth and profits. The consumers in the Western countries had preferred green companies that produced green products and services.

In Malaysia too, the government had encouraged and instructed companies became more environmentally responsible. Few companies had considered an eco-friendly revamp would add more cost to their business without any significant monetary advantage. However, the participants on the other hand agreed that adding a green innovation to their business could help them came up with a broader range of profitable products and services to make their customers happy. It was not that difficult to implement green. In fact green perspective had given the companies a novel perception of looking at the innovation process such as Six Sigma and Lean Process where the management styles was all about getting leaner: reducing steps, costs, and materials in making their products. Shifting the production operation near to the consumers had been considered as green because the transportation and storage costs were reduced.

4.4.1.1 Sub Theme 3.1.1: Company Competitiveness

Amirul R was proudly to say that GLCs B had been recognized all around the world as a part of Malaysian government. This had benefitted his company as a competitive company at par with other old established oil and gas companies in the world like Exxon. It was started off by learning from Exxon-Mobil in Malaysia whom was the contractor of Petronas but interestingly in Africa, Exxon had invited GLCs B to be their partner. This showed that they had confidence in GLCs B to operate as full-fledged.

Similar case to GLCs H, Nizam T said his company's strategy to focus on task-management had significantly successful. Over the past five years it had reshaped his organization to be more people-focus which made it more competitive in the industry by going to the ground and be proactive towards its employees' rise issues. He believed good leaders must inspired people and reduced the influence of the union that could jeopardize the operation of the company.

According to Azlinda AZ, GLCs F was a very competitive company because as a reinsurance company in Malaysia, its competitors were coming from the outside of Malaysia who had opened their branches in this country. The operation of GLCs F was very much depended on the government concession, the agreement and policy of the government, the public needs and any regulation by the Bank Negara Malaysia.

Datuk A had stressed that GLCs Q was the only utility company in the country therefore they were more competitive because their company was monopolized. They needed to support the government directions where there were certain projects that they could not make money due to the social obligation of the government.

Above all, this study had agreed with Haji M that the competitiveness of their companies were in term of the image. By being pioneer to the business in its industry in Malaysia, GLCs P was the business leader.

4.4.1.2 Sub Theme 3.1.2: Competitiveness by Being Green

Throughout the interviews, majority of the participants had mentioned that green innovation did build good business implication where a company could be noble corporate citizen and breed profits. Under the green initiative, they also believed goods produce that had a clear eco benefit would increase sales revenue, reduce carbon footprint emissions and energy usage; and increase the company competitiveness.

As Government was the biggest spender, Tun M had mentioned that nowadays there were many mega projects and some of them especially related to climax change since it was the concern of majority of the governments of other countries. Therefore, the spin-off businesses from the government projects were very big. By giving some tax exemption for the companies who took part in the green initiatives supported by the government, definitely would create more jobs in the green area for the new generation of Malaysia. He had also seen that the green was very popular in the western countries, and Malaysian companies could be competitive by having green knowledge workers, and be at the same level with the established companies in implementing green technology and innovation.

According to Amirul R, the passion and determination of his leaders in GLCs B in supporting the Prime Minister's aspiration into the direction of preserving the environmental, had guided the company to be more proactive and competitive towards being recognized as a green company. Normally, the company was leaded

by the internal talents whom had served GLCs B more than two decades. As a result, they were knowledgeable and experience on the business and operation of GLCs B. Enhancing this statement, Amirul R stated that GLCs B had been known for its competitiveness because the right people were identified for the right assignment especially when carbon footprint moves was being the main concern.

In the building industry, Haji M felt that GLCs P needed to be competitive with the current condition due to the construction cost and consideration of greenness. By having greenness elements in their products, internally it was less could be done in their operation but it gave a very good image to Tabung Haji as advancement when they started green initiatives. For that reason, Haji M believed the value was not in terms of money but the value was in terms of the image of the company itself. If they had experience in design and construction of green building, they could get more opportunity in the government projects that emphasized on green building. Indirectly their products had huge impacts to the company because by developing the green projects, then they could sustain the company for future projects. At the end of the day the people who rented TH building would get the advantages in terms of return of investment, and the operational cost could be reduced.

Tengku K also agreed with Haji M that green made a company more competitive for the reason that green buildings were good for the tenants because it used less energy for air conditioned cooling, direct lighting and heating. He pictured that green building could be their selling point and became competitive to attract the government to lease their buildings, and saved the government in many ways.

Dr Johan acknowledged that green made Repso competitive in terms of corporate social responsibility that boosted their reputation up. Repso was putting a lot of emphasis on reputation because reputation was good as symbolized about its products and the brand image. It also gave more competitive through green because it shown that they had truly anticipated with the future demand like might be in 15-20 years ahead where there would be purely on green product. He enhanced that it had to protect its reputation and tried to maximize its opportunity when environment was being the demand of the community.

4.4.1.3 Sub Theme 3.1.3: Significance of Green Competitiveness

To have competitive advantage, usually the companies had to concentrate and understand what their customers' values, and what really matters to them in relation to the product or service that were offered.

As being stressed by the Statesman, there was no perfect decision with regard to the strategies developed by the top management especially when environment issues were the main concerned. All decisions had weaknesses and to keep our competitive advantage the important thing was whether we were willing to recognize the failure early enough in order to take corrective action. He had explained that when we went to other countries where companies were much more advance and much better organize, then we had to learn and adopt very fast in order to compete.

GLCs B had kept its competitive advantage by not just relying on the domestic competitors. Amirul R informed this study that its strategy was to go outside of the country and set the target 20 percents for their yearly growth. As the government representative, it was important for GLCs B to be aggressive in market its business especially in the Islamic countries which knew Malaysia, and trusted GLCs B would practice good conduct and would not destroy their environment.

Looking at the point of view of a GLICs, GLICs B had a different way to keep its competitive advantage because Abdul W said that his company's vision and mission were not meant to achieve in a short time. It had implemented programmes and systems to guide where to go and direct its effort to take strategic action to maintain its competitive advantage.

The point given by Hassan S was worth consideration because sometimes the strategy and decision taken were not wrong but actually was not right, and could be corrected. Whereby wrong meant had to be demolished and replaced. He highlighted that over a period of time, circumstances at work and the external forces really had changed the company strategic decision, and the way business had been conducted. It needed to have benchmarking to keep its competitive advantage.

Interestingly, Haji M had different view where he said **to maintain the competitiveness we needed to change the old ways of thinking to the new one** especially about design development and maintenance issues. It was because most of

the maintenance issues **were related with technology**. So, if the companies were not kept abreast with the current technology on maintenance such as on things that reduced energy usage, then they would not have the competitive advantage. For government project design and built, the building contractors must have at least silver rating that rated the green buildings.

4.4.2 Major Theme 3.2: Eco-Innovation

The Statesman had mentioned Japan as the world's most energy-efficient economy. Energy efficiency was meant to optimizing the energy solutions. Sustainable design was required to greening our community with wisdom. Renewable would maximize our renewable potential with the most innovative technologies as had been proven in Japan and Germany, according to Tun M and Datuk A respectively.

4.4.2.1 Sub Theme 3.2.1: Importance of Green Innovation

Recycling, reuse and reduce or known as 3R programmes and energy conservation were among the popular green initiatives to ensure our planet was safeguarded for future generations. Unfortunately, majority of the corporate worlds often forgot other critical choices of green initiatives that suited their organizations' operations, processes, products, and services as companies were more concerned on their bottom line profits.

Nizam T exposed that his company had changed its process to suit the green demand to make the workplace more productive, and still moving towards improving that. Their leaders also had encouraged their employees to adapt to the new green environment technology by providing trainings and courses within the company. This was similar to what the Statesman had said,

“So, obviously you are making better use of your assets in terms of workers, money and knowledge when you choose to invest in green innovation. You need to fulfill the objective of your business to make profit by using clean technology and the same time to preserve the environment.” (Tun M).

According to Haji M, his company felt that green innovation was important to portray it as the contractor who was sensitive to save the environment. He did not see any rejection from the consumers because the people who rented GLCs P buildings had saved money on the energy they used since the buildings were designed to have more sunlight came in at daytime.

However, Datuk A had observed that green innovation required a lot of investment especially in the utilities industries. Many innovations needed a lot of investment resources in research and development stages, especially in money to make it successful. Although Haji M also had agreed with Datuk A, he still believed that it was an opportunity for them in terms of return of investment, and operational cost could be reduced once the green innovation had become the norm, and compulsory for every player of the industries. At the end of the day, green innovation could also bring material value like what it brought value to the company now in terms of environment sensitivity, energy usage, pollution and the fate of world community.

4.4.2.2 Sub Theme 3.2.2: Green Innovation Implementation Outcomes

Tun M had made his point that we could not be sure when we had implemented green innovation, it was going to success and easy. The company required to ensure they had compatible assets such as employees, their abilities, level of intelligence, knowledge and experience on green innovation, and the working culture that they needed to adapt to. The management of the company had to take the risk, and at the same time the employees should be allowed to explore and apply green technology in their works and processes.

This study had acknowledged that GLCs B considered green innovation as very important due to the carbon footprint emission. Amirul R had revealed that his company' leadership was aggressive when it came to the issues of improving the production of their oil and gas especially when the process involved directly with the environment pollution. As a result, the manpower in GLCs B was identified to shoulder the green innovation assignments, and it was not surprise that their expertise were being peeped by their rivals.

Haji M had a positive mind that looking at the downside would surely see green innovation in green buildings were incurred high cost. However, the upside or positive side of greenness initiatives gave a huge impact to the company though it was normal for the first a year or two would face some rejections to the rental of green building. Once the customers knew and adapted the system bit by bit, then it was not impossible they would adopt it later. He explained that internally it was less could be

done in the GLCs P operation but the green innovation had provided an opportunity for the company to improve their image, building design and material. Now, their products must have green elements.

In supporting the statement of Haji M, Tengku K added that in actual, selling green buildings was good for the government because as tenants, it would save in energy for cooling and lighting. Fail to change towards green within next two years when green buildings were made a must to all contractors would jeopardize GLCs P selling points. Tengku K had stressed that their challenge was to sacrifice on whatever margin that they had agreed until their products got the same margin for the rental price that they wanted.

The other outcome of the green innovation was the concept of carbon credit trading that GLCs Q needed to respond to. The carbon credit trading concept focused on the decreasing of future carbon monoxide (CO) emissions originating from the renewable energy, and energy efficiency development that supersede fossil fuel power generation production or industrial processes. As a result, the developing countries would buy the emission CO from that saving when they had signed the Kyoto Protocol. However, Datuk A justified that GLCs Q could show that its operation in actual had reduced the carbon footprint because GLCs Q was building the hydro electric, a green innovation adoption for **clean energy**.

As being concluded by Hassan S, once top management was kept repeating the green innovation vision and mission, then the people in the company whether like it or not would tend to incline to that. This also was true as stressed by Tengku K that green innovation could be the selling point to attract the consumers. Although his organization was not the truly green organization itself, but he saw the direction was more to make its products green.

4.4.2.3 Sub Theme 3.2.3: Meeting Green Innovation Requirement

Based from Tun M observation, green innovation was still not fully implemented in the case of Malaysian companies because **we did not have the capacity to start our own due to limited technical know-how in green technology, we did not have green management, and the potential market for green compared to the Western countries.**

Due to that, Datuk A suggested everybody should realize that green was the way to go now. Even though he felt at the moment the target to be green utilities producer was quite difficult to achieve due to certain blockers such as people who were not willing to invest on Renewable Energy. This technology was expensive until they got better price over the years. He did not surprise if his company's target could not be met because it is expensive, and the banks also were not wanted to give loan to GLCs Q too.

For the green building, Haji M highlighted that green issues were stressed on big projects that scale more than RM150 up to RM350 millions. When comparing to the residential projects, he thought big projects such as big institutions like office complex that had up to 1 million square feet would use the energy a lot specially to cool off the building. Most of the government projects under Jabatan Kerja Raya (JKR) that he had handled got that 'design and build' requirement to achieve at least silver rating. He explained that 'design and build' were meant the contractor would be in-charge of the building design and construction with green element implemented in each phase. Tun M also highlighted that MNCs were the matured sectors that required the buildings they were renting to be green buildings that consumed less energy and pollution.

Both Tengku K and Dr Johan had the same opinions that when we had agreed to do green, then we needed to comply with the requirement. Dr Johan also added that all of these green emissions in terms of our carbon footprint would not work if government did not push. As referring to Haji M's advice, everybody must be given some time to adapt and adopt to green innovation because it was difficult to change though it would give benefit to everybody. At the moment, the cost of being green had increased but the price of the products and services were still remained. So, the companies had to reduce their bottom line where the price had increased relating to the cost incurred.

4.4.3 Major Theme 3.3: Transformation to Green Company

From the interviews above in Major Theme 3.1 and Major Theme 3.2, it was known that being recognized as green had promoted the companies brand's reputation and expanded brand loyalty in environmentally attentive customers who inquired into how a product had been prepared before they decided to purchase. Companies also used most of their resources such as time and money to handle the waste produced throughout the manufacturing process and packaging. Therefore, **among the purposes of going green was to do away with waste, lessen liability, and slash documentation papers that was done through minimum packaging expenses and invited environmentally conscious end users while sinking the load on landfills.**

As being suggested by Tun M, to make the energy of going into green keep moving, the company should be looking for low-hanging fruit or sure-fire projects from the foreign companies that could be successfully adapted. It was preferably to chose projects that had reasonably priced to employ. The company that successfully implemented green innovations and achieved their main goals should be acknowledged and made known to the community.

4.4.3.1 Sub Theme 3.3.1: Reshaping the Company

There were companies that formulated technology revolution in the area such as transportation or green building which **had not profoundly technology-dependent but entailed innovative business models.** This study found out too that any companies that intended to go into a green business ought to thoroughly comprehend

the policy and requirements had been defined by the government. Above all, they should calculate the exterior issues that their industries had dealing with like carbon footprint, and other environmental externalities. That was yet to be addressed by the market which started from energy production and other manufacturing that had contributed to pollution.

To Tun M, the willingness of people to migrate had already one good quality for a new change and improvement. He believed the strong reason to migrate was because they wanted to do better by adopting innovation because in order for the company to survive and success, they had to have new ways of thinking and methods of doing work. Local companies could see the implementation of the innovation that was done in the industries to get motivated by this comparison.

Nizam T had interpreted innovation as changing the approach of doing things for betterment. In his company, the top management inspired the middle and low managements to be innovative by rotating their top talents all over within the company to improve their knowledge and experience with different nature of works and employees. The improvising had made the focus on task-management became successful. However, after doing it for the past 5 years, they managed to innovate, and reshape the organization to be more people-focused to reduce the union influence and proactive towards their employees issues. With the support and understanding of the top management had on the employees, decision making **was** greatly made their operation smooth, and better to grow and success.

Green innovation implementation definitely had influenced the end products of GLCs P although not aggressively done within the organization administration beside the 3R concept which is recycle, reuse and reduce (3R). Tengku K revealed that his company had benchmarked its products with the outside companies where all the respective departments were sitting together and did brainstorming session. During the brainstorming, everybody shared their past experience in the construction jobs and discussed on the improvement through innovation that was applicable to their projects within their capabilities such as budget, expertise and technologies.

Interestingly, Haji M gave a different view from Tengku K where he thought it was the consultants whom had more knowledge on green compared to them that introduced the innovation, and trend of building construction to them. In fact, GLCs P also involved with the consultants' green projects that he thought could provide exposure and experience for the benefit of GLCs P staffs. However, at the other end, he supported what Tengku K said that the **focus for innovation was more on the end products where they put the emphasized on the initiative to reduce the impact to the bottom line.**

4.4.3.2 Sub Theme 3.3.2: Green Innovation Seamless Business

When companies decided to go green, their goals should include preserving our planet beside to reduce the operational costs by running a more energy-efficient operation that saved electricity, gasoline, and paper, and also to attract customers who were looking for the alternative green products.

It was the concern of Tun M that any green innovation that the company had decided to implement, they must always question their current practice whether they were ready with manpower and technology to implement it. It took time for green innovation to perform well because workers had to be trained, and told what the outcome of the exercise to the company.

Hassan S suggested that there would be some adapted green innovation that could not be directly implemented. It needed to be corrected first to fulfill the companies' objectives and structure. The success of green innovation was dependent, he said, on how the people in the companies accepted the change to their current workplace requirements. There might be some rejection at first, but when the management kept on repeating that vision, then they would tend to incline to that.

Interestingly as mentioned by Tengku K, there were no specific companies which his company had used as a model because it depended on a case-by-case basis. The green innovation implementation approach in his company must be specific on which part to be green. It mixed new and adopted green innovation with some which had already been developed within the company such as in the business process, then it needed to suit its operation. The innovation depended on the needs because it could be chaotic if the process was not suitable whether it was green or not. This was a very subjective issue as when they agreed to do green, then they needed to comply with the requirement.

In the eyes of the utility industry, there were many levels to be determined whether it was suitable to implement green or not. Datuk A explained that sometimes their operational mostly on generation side had adopted the best practice, and they had localized it to their own environment. The technologies that they could emulate, and learn were especially from Germany with some adoption and adaptation to fit into our country requirement.

Due to limitation of the example for them to follow or model, Haji M also preferred green innovation system to be adopted bit by bit from other companies and diffused in their company although it was normal to face some rejections for the first a year or two.

4.4.4 Major Theme 3.4: Low Hanging Fruits Innovation

Low hanging fruits terminology commonly used to define the work that had been done in the easiest way by adopting and adapting the innovation. This strategy had applied the most obvious opportunities because they were readily achievable, did not require a lot of effort and boosted the operation quickly.

4.4.4.1 Sub Theme 3.4.1: Green Innovation Adaptation

This study had enlightened that **not all innovations were purely developed in-house. They also adapted the innovation of their rivals that they thought would benefit the society and industry too.** This was revealed by the participants below:

“We model other company because we want to improve ourselves. In order to survive, we have to succeed and do better. This comparison with other company in other part of the world for example, will motivate us to be like them.” (Tun M).

‘In GLCs B, whatever we do, our focus is what is best for the team, the organization, and Malaysia. That is why we must know who our rivals are and have some measures to fit into the business because it involves a lot of money and resources. It is important to be aggressive when it requires us especially in the context of turn around the companies to be more innovative and sustainable.’ (Amirul R).

On the other hand, sometimes the industries were still new with the green innovation implementations that companies could not really refer to as being acknowledged by the participants from the building industries:

“However, in the building industries, there is very little example around that we can see and learn from them. So far we don’t discuss about this with the top management. There is none benchmark to any companies.” (Tengku K).

“At the moment there is none that we have learned things from other companies with respect to innovations that we implement in our company because there is very little example around that we can see and learn from them.” (Haji M).

Nevertheless, the companies also had modeled others on the implementation on the human capital development to ensure they were hiring the right, committed and knowledgeable talents and leaders. Here were some of the statements by the participants:

“We follow the Germans (Schlumberger) loyalty shown in their commitment and dedication to deliver as you are working for 20 years. I think at these level it is not intellectuality of the top management because it has been proven, seen and felt. But the most important thing is their proven track record and delivery.” (Hassan S).

“The benchmarking for the new recruitment especially for the top management post that we take in, they have to made up our mutual benchmark. So whoever is going they must at least not below than that average marked set by the trend standard. They need to be competence in our expertise and knowledgeable about the industry. (Azlinda AZ).

4.4.4.2 Sub Theme 3.4.2: Green Benchmarking

The purpose of benchmarking was for the companies to see their progress and performance compared to other companies either they were direct competitors or indirect competitors. There were many elements that had been benchmarked and not only limited to products and services alone.

“We benchmark all the time with all utilities in the top countries even in Singapore. In fact we have a lot of interactions with them but so far there is no specific because to become our model is still not yet because their situations and us are different. However, I think the technology we can emulate is their learning ability and innovation such as Denmark and Germany. In fact the FIT is Germany’s invention. May be due to their dynamic situation is different from Malaysia, we have to adapt and adopt to fit into our country.” (Datuk A).

“If we want to benchmark, I don’t have any idea how we are going to identify the things that we want to benchmark. So benchmark to something that is already completed is something we did not do. But we use the experiences of others such as the EMKAY Land in Cyberjaya.” (Haji M).

Innovation could happen without being published in anywhere. Therefore, there were times where companies should look further in places that were unusual especially where the perception attributes of top management had been the critical element involved.

‘You have to think how to innovate in order to sustain. There is why we should go to other places where companies are much more advance and better organize. You must always question the current orthodox way of doing things whether in the case you are dealing with, that can apply or not. You don’t accept it that can stifle our business, we can’t do business.’ (Tun M).

'Feedback from shareholders are important to calculate the risk, we must know who they are and have some measures in traits that taking back on investing of talent development. It is mixture of human and technology because GLCs B is being recognized as Malaysia government. We started of by learning and adapting from Exxon-Mobil. The biggest learning process in developing leaders is when they are being stretched to explore, experience and maximum learning exercises through different projects in different situations.' (Amirul R).

Benchmarking could be attributed that leaders must be mastered at but could only successful if the leaders were willing to compromise, and accommodate to the current survival situation of the companies.

"Sometime the only way to survive when you cannot compete with the multinational, you joint venture with them and become the national player by and adapting their technology and innovation know-how." (Mazlan AS).

"As the sole utility provider in Malaysia our business is regulated every four years by Suruhanjaya Tenaga which is actually external audit that will check our management and engineering. So that they will know where we are... where we stand among other countries." (Datuk A).

Principally, top management should have attributes of non-stop learn and re-learn due to unrest changing in the business world.

"A company must be very good at learning ability and agile to change to learn and adopt something new especially when new innovation or new business concept is coming." (Azlinda AZ).

4.4.5 Major Theme 3.5: Green Business Case

The participants shared with the researcher a few of Green Business cases that clearly had impact to their companies' operations and businesses. The practice and impact were explained below.

4.4.5.1 Sub Theme 3.5.1: Adopted Green Innovation Practice

Top management must always be advance in understood the consequences and financial outcomes of their companies when dealing with the new trend such as green innovation implementation.

“We must always question the current non-green practice whether they are really capable of delivering or not according to the environment law. If it doesn’t apply, then you don’t accept it because it can jeopardize our products and we can’t do business. And that will mean the Malaysian economy will shrink. Nevertheless, we cannot be sure when you choose green, company will perform without taking the risk. But you also have to give green some time because early failures don’t mean that throughout they fail. Later on they will succeed if you give enough time for innovation to perform at the most because it takes time to learn to use the green product by the public.” (Tun M).

Interestingly, the perception attributes of top management when dealing with green innovation implementation were highlighted in the energy and carbon footprint industries specifically:

“The top management must have passion and determination about green because without the energy how can leaders energize others to be green. It has to be the right people being identified and of course the right green assignment to deal with such as the carbon footprint. I think what is important is for GLCs B to be aggressive in trying to avoid any environment issues everywhere we are operating especially in the context of humanity perseverance.” (Amirul R).

“During current issue on Western economy, no industry is doing well and that includes green business. The renewable energy producer such as wind and solar manufacturers, starved for credit, are cutting back on projects and laying off workers. I think green require a lot of investment. As we know that many innovations require investment in research even in money in fact. We get the support from the local renewable energy producers to add up the green technology aspects without burdening our current operation.” (Datuk A).

As being highlighted above, **not all companies had the opportunity to benchmark and adopt the green innovation implementation in their companies:**

“What we have doing so far and the directive from the Tabung Haji is to look into the non-green buildings they have bought and change them to green buildings.” (Tengku K).

“At the moment there is none that we have learned things from other companies with respect to innovations that we implement in our company because there is very little example around that we can see and learn from them.” (Haji M).

4.4.5.2 Sub Theme 3.5.2: Impact of Green Innovation

Both Dr Johan and Amirul R had agreed that there was a tendency to include the companies' carbon footprint in the reckoning of their financial objectives. Their companies had progressively evaluated, and worked out more to lessen their carbon footprint, and regularly informed their efforts in their websites. Nowadays, the CEOs were more green concerned than before because the leaders of the countries in Malaysia, and around the world had promised carbon cap-and-trade legislation. By supporting the Kyoto Protocol and Copenhagen Accord, the smart green innovation companies knew that managing carbon would soon become a fiduciary responsibility, and it had been now the price of doing business.

“The leader has to make assessment of his experience in the green processes because a company could be in trouble when the economic is declining. We observed that when dealing with green innovation, as a car manufacturing company, Toyota is a good example terms of withstanding the downturn far better than its American corresponding companies because it produced the fuel-efficient automobile that demand by the car owners. Toyata had created an innovation and efficient process that is known as kaizen, or continual improvement when their current practice are not really capable of delivering at the right cost and end product they needs.” (Tun M).

Related back to what was Tun M said above, Dr Johan added that when dealing with green innovation, the oil producers would change to renewable energy like bio-fuel

which required them to work hand-in-hand with car manufacturer like Proton and Toyota because they were the big enablers. They needed to have cars that could use their bio-fuel because there was a demand and a lot of interest from the consumers. If the companies saw just 2 percents demand on bio-fuel and green cars, as the result they did not accelerate the process of developing the green technology due to the cost and profits impact.

In the building construction sector, Tengku K and Haji M had agreed that energy efficiency and waste cutback must play a role directly to the bottom line where a number of innovation design was coming out of this to meet the challenge posed by climate change and other environmental problems. Although they were not moving fast enough when it came to climate and energy use, green building businesses were looking to the government for a savior. They were hoping that the Prime Minister promises to use stimulus spending to make the Malaysian economy greener, leaner and cleaner was more than idle campaign talk.

Without a shred of doubt, the top management leadership was very crucial to be addressed where their perception attributes should be identified and notified:

“We must be relatively optimistic in the face of the present slump. We need to have good leaders and effective leadership in placed that see sustainability grow from something innovative like green businesses because they may not be booming, but business is still going greener. The recession has limited the sustainability exercises and may not be addressing environmental problems at adequate magnitude and pace.”
(Azlinda AZ).

“However, the green drive is still getting bigger in spite of not so much businesses such as renewable energy or carbon trading have become financial titans. This is because green values such as energy efficiency, reducing waste and managing carbon footprint have progressively more become standard practice for many well turned-out businesses. These are green innovation practices that don't go away during any situation of the world economy constraint.” (Datuk A).

4.4.6 Conclusion Group Theme 3

In the Green Frugal Innovation, the companies must focus on what they had done best and better than any of their new and existing competitors regardless of their size, industry or financial position. They needed to identify the green frugal innovation that truly made them distinctive from their competitors because even the leading companies could deteriorate under the competition if they did not keep up.

However, the top management had to ensure that those changes inspired by green frugal innovation were supported by market research either it was internal changes happened to a company, decision to pursue a new target market, or the new company leadership wanted to completely change the focus of the company. It was very crucial to ensure that the consumers and target market value the things they had offered.

This study believed it was healthy for long-term growth when integrating green frugal innovation into the daily operation, and embracing the idea that companies had a commitment to act in their own best interests and all their stakeholders. The innovation of sustainable products, services, and business models that responded to consumers' unmet needs would drive profit. It showed that companies that did good

will, in turn, did well. On the other hand, the companies that refused to comply with environmental standards, and react to consumer concerns would see penalizing results.

Green frugal innovation was not only about consumer differentiation but an idea to stimulate additional internal energy, and convey further enthusiasm from bottom to up in order to save cost for the good of the companies, and future generations compared to the normal cost-saving points. The companies might put premium rate for green products and services but that existed a stiff market in many categories in current economic environment. Thus, companies had been pushed to ensure that they were clear on the advantage they had delivered to the consumers, and had been acknowledged the right price that consumers were willing to pay.

Many companies had implemented new positions in their companies such as a 'Head of Sustainability' (Ding, Li, & George, 2014; Strand, 2014). However, in setting up internal initiatives to implement green, there was still subsisted the circumstances where the top management felt a little bit of backing off and difficult to acquire the CEO's immediate attention. **Although, the top management was interested in green innovation and pursuing it, but they did not wanted to reveal about it too much in the media because they were too worried about backlash if they failed to get profit out of it.**

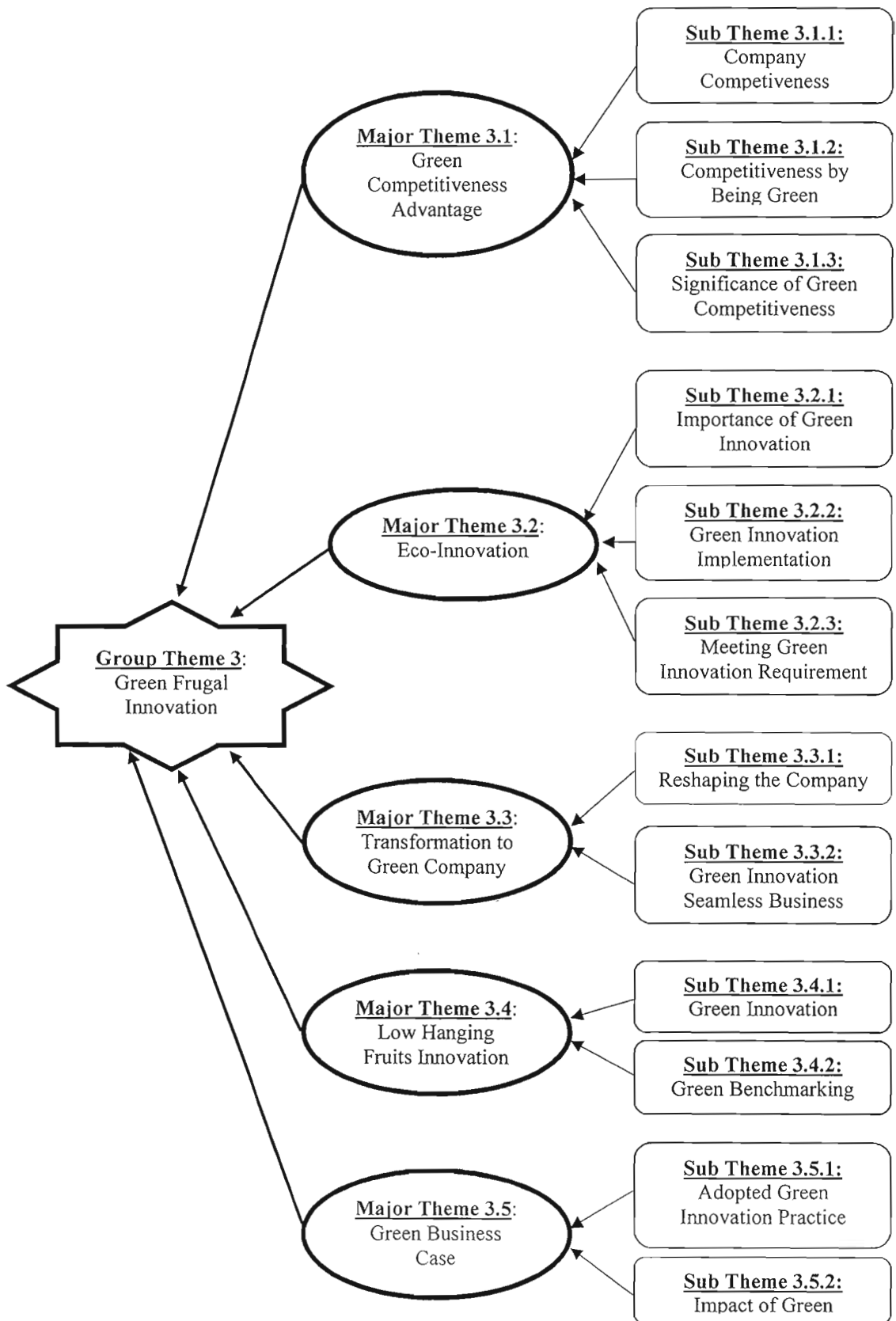


Figure 4.3
Group Theme 3 that Shows Its Major Themes with Dedicated Sub Themes

4.5 Group Theme 4: Organizational Green Sustainability

Organizational Green Sustainability was referred as the ability for a group of persons to persist the internal and external pressures of a culture, through change and innovation, as they attempted to deliver their specific products, processes and services. Therefore, the authority needed to be delegated and accountability got to be ensured through a model which they could evaluate the organization to sustain in the future.

In this study, the researcher found five major themes that emerged from the data gathered. The summaries of the themes were tabled in Table 4.9 and the details explanations were written below:

Table 4.9

Synopsis of Major Themes of Group 4: Organizational Green Sustainability

	Major Theme	Explanation
4.1	Green Survival	The curiosity of this study was to uncover what kept the companies sustained, whether green could assist in sustaining and in what aspect it did.
4.2	Green Innovation Critical Advantage	The researchers wanted to comprehend the criticality of green innovation and its benefits to the companies.
4.3	Green Organizations' Prime Challenges	With current scenario, it was essential to realize the companies' business challenge, how they adapted to the challenge and whether opt to green was one of them.
4.4	Green Innovation Implementation Performance Indicators	It was important to know the explanation of the basis of the organization performance and saw the difference after the implementation of green innovation in the companies.
4.5	Green Innovation Business Model	The ultimate of green innovation implementation was to appreciate its business model, the opportunities companies could gain from it and the model that able to be used.

4.5.1 Major Theme 4.1: Green Survival

Before the economic crisis, green was about health and safety, savings, and things that had directly beneficial to us. Green was concerning on how to use the resources more efficiently as the companies possibly could and kept away from waste. Most of the companies were concentrating on making the most out of the resources that they had matched completely with the goals of green.

With green remained on consumers' minds and their shopping behaviour, companies had to keep serving green, and very much looking for this as a force for cost savings. Companies could offer green that was convenient, and would not cramp the consumers' style or hurt their budget.

4.5.1.1 Sub Theme 4.1.1: Sustaining the Organization

Generally, majority of the participants had defined sustainability as what the companies actually stand for ethically and morally in building value for all their stakeholders over the long term. They saw that consumers were driven by their emotions, and did a lot more thinking during the purchasing process. Consumers were thinking about the products they bought, and the brands. The participants noticed that the key elements of the consumers' choice for companies or products were depending on the consumers' behaviour, the companies' long-term views and ethics, and their sense of social responsibilities.

In the period of financial crisis, society was going through a mind shift to think more in the long term impact to their lives and surrounding. Everybody faced an existential economic destabilization that directly was the concerned each person of the society.

In the crisis that we had gone through, the successful brands today were brands with values, content, history and offered reassurance. The unostentatious brands had also being the choice. Society had changed because people were staying at home for education and work. People were interested more to invest in home decoration.

In the midst of these changes, it was important to establish a common definition of organizational sustainability than businesses swore to have sustainable management. However, it was very difficult to establish because businesses had been so different. Nevertheless, there were few of principles that could be determined.

The participant from MNCs had assured that climate change was among other important matters like health, education and war that would control the argument for the next 10, 20 and 30 years especially in Europe, the United States and a few emerging markets. No doubt that the stakeholders would have other concern that would push business leaders in new directions. However, the issue that really concerned this study was the one where the GLCs really did have an influence like climate change, preserving the natural world and water. It was Dr Johan's thought that the change to the climate would be dramatic and it had already happened especially the changes in the automobile industry.

According to Azlinda AZ, there were three most changes that matters in management's strategic decision-making when considered all the sustainability issues that had shaped us. Firstly, the will in the company on how the people conducted themselves within the company, how the company dealt with its people, how top management fostered its corporate culture, and how their employees were involved. It was very crucial that the best people in the company were retained because the company wanted them to stay and prosper with them. Then, the way business was done had also very essential because what kind of products and designed to make

short-term profits must really make known. The company should identify whether its daily decisions or short-term decisions taken that helped built up the company. Lastly, the behaviour that the company had to take care of towards company' external stakeholders, shareholders, the community or the country it was based in, or the issues that might interest the general public like climate change and carbon foot-print.

“We certainly have to change our company and our people’s skills to different environment because the world is going for sustainability direction. We need to apply our knowledge and skills to diverse challenges due to limitation of budgets, venture capital and top management leadership is focusing more on immediate returns. Therefore we always ready for migrating into different environment and we keep adjusting and learn.”
(Azlinda AZ).

Sustainability challenges had been viewed by Northport as a source of competitive advantage especially due to its behaviour as a corporate citizen and how it spent its money. Clear strategies were followed on spending its part of the money in a meaningful way by supporting projects that were attractive but also meaningful such as green innovation implementation in waste management.

By taking waste as an example of resource, the project had not only raised awareness on the issues but also a platform for smart solutions to beat waste. This kind of smart solutions to beat waste had got supported from the company because a different way of approaching marketing had been used, and this was where Northport wanted to spend their money.

“Our sustainability programs related to green will involve with volume growth that we need to handle at the port. Our sustainable innovation is to look who is doing it well out there, and adapt from them. It is proven that our focus on task-management is successful and by reshaping the organization to be more people-focus, has encouraged change the whole thing to bring win-win benefits to the company and employees.” (Nizam T)

For the industries like oil and gas, the reports on climate change and carbon footprint were all over the media that caused the community to respond. It would be bad for the companies' reputation as mentioned by Dr Johan and Amirul R if they did not consider the sustainability issue when they always got reactions from the community on this. The emerging pressure and awareness of the community were the new element of management where their companies needed to respond to. However, the top management still had to deliver the profits by incorporating all the aspects of enormous competitive advantage attracting, and retaining talents into their operations which would ultimately make them more successful than others.

“The GLCs B's top management believes we need to distinguish and market our company's identity through our vision, mission, and values that focus on our existence. They implement their global mindset and strategic leadership to compete with those international giants through our good branding. It is the vision of our CEO to operate in the foreign countries where we need to manage people from difference nationalities and cultures. Towards realizing our vision, GLCs B mission is to acquire learning ability and intellectual capacity to process all these inputs in terms of challenges, environment and opportunities, and translate them into strategic actions. We need to learn very fast to adopt and adapt what is working in the company in whatever particular environment when operating in foreign countries. Our values are depending on our culture and circumstances, and at the right time or the right place without jeopardize our reputation as representative of Malaysian government in the eyes of other countries.” (Amirul R).

It was believed of the participants that they would not do it if there were none any economic incentive for companies to change their behaviour toward green innovation implementation. On the other hand, they also saw that the government had tried to get across the point that showed companies could make money and be good corporate citizens at the same time.

The observation of the researcher had led to a statement that beside all the strategic targets that CEOs faced up today, to prioritize sustainability was quite hard because at the end of the day company needed to make the profit, and cash flow. Realistic CEOs would look sustainability as it was on the agenda as a result of community pressure. The perception attributes of the leadership really played the roles in sustainability moves as highlighted by The Statesman below,

“The American car industry faces the challenge due to the public pressure, the price of oil, and changes in consumer behaviour. However, although green adds the value but if it has been a bad product, it will not have sold. Similarly in managing a country, the leadership traits and management capability are very important when a company want to have a solid strategic plan to ensure the sustainability of the company. We need to identify our objectives and study our internal resources that would solve the most important problems. External assistance is crucial before our internal people could become more skillful, understand management and the business prior to begin running the company on their own”. (Tun M)

The above statement by Tun M had been also agreed by Amirul R who thought it was important that leaders in the companies needed to create the long term goals that not only comprehensive but realistic for the companies' survival. The goals must assist the companies to explain how they would progress toward gratifying their mission in

agreement with their values and vision as being enhanced by. He also had convinced that by having green programmes and green reputation, it was helping them to have massive competitive advantage, and facilitating them to attract and retain talent even if they might pay less.

As for the building industries, Haji M told that the leaders in his company had seen the need to reduce the energy usage, and less pollution to ensure the sustainability. In the same time, there was a potential that by developing the green project then they could get other projects. So, that was the point where sustaining the company in the business for future projects.

“We had no pressure when we built our corporate culture and deal with people inside the business because we had a green program in place. When we launched the program, we had more positive response especially the emotional response when the company was able to profit more when we change our culture and behaved differently with regard to green.” (Haji M).

According to Tengku K, his company needed to do assessment of the internal and external environment when dealing with sustainability of the company. Top management must acknowledge the trends in the field that were the opportunities and threats for the company and its work. Everybody should have knowledge and experience, and willing to poise the company’s response would benefit from trends in the field. Without the suitable manpower, budget, and management direction, any problems might have an effect on the company’s ability to take advantage of the opportunities or protect against the threats in the environment.

“Green was a purely top-down initiative because we could not implement these kinds of programmes from the bottom up if we had the CEO blocking it. Almost all the cases I knew from companies being involved in climate change or on these green kind of projects, it was always top-down, because it was such a cultural change. You could not do it organically. Somebody had to take the lead, and I did not know one single example where it came from the bottom up”. (Datuk A).

4.5.1.2 Sub Theme 4.1.2: Green Aids in Organizational Sustainability

Nowadays, top management had been demanded to make their companies to be more innovative in increasing profit to their business. They had referred to experts, and attended conventions and courses on innovation in hoping to discover the elixir of success. These leaders were astonished by the capability of new companies to make and sell penetrate products and services, and how some big companies had reshaping themselves continuously.

Tun M believed **top management’s leadership was a critical driver in the organizational sustainability followed by culture and workplace ethic.** The top management must recognize what was an innovative corporate culture and how to foster one. He had stressed that the innovative culture especially with regards to green had been placed on a dynamically linked assets such as people skills whether knowledge workers or not, financial support to operate the business, values that people in the company held and work ethics of the employees. He elaborated that the values of the company would effect on its people’s conducts, the ambience of the workplace and how achievement had been defined and measured.

“Company needs to revisit and review the organization’s mission, vision and niche whether they are still relevant because as GLICs, GLICs C believes the contribution of GLCs in green are enormous. Any policy if still are not relevant when green is the concern then they should be modified. With the momentum given by the Prime Minister in supporting green where he set up Green Ministry to show the seriousness of his administration, hopefully we can regain the lost GLCs are facing over last ten years.” (Aziz A).

Hassan S was agreed with Aziz A that the development of GLCs whether it related to green or not need to be quantifiable with the time-lined objectives to reach each goal. The goal of reducing impact of global warming could be the objective of promoting on the green technology. Another objective might be to give tax exemption to any companies who chosed green as their main business concerns. Once the government had kept repeating that goal, like it or not the GLCs would tend to persuade into that and followed.

However, Nizam T, Mazlan AS and Abdul W had shared that in order to implement green innovation, the companies had to change their approach to sustain their businesses. Good leaders must inspire their people moving towards that (Nizam T), setting up partnership with the proven one (Mazlan AS) and reshaped the companies with realistic vision and implementable systems (Abdul W). They had agreed that it was not meant to achieve in a short time but the creation of benchmarks to determine advancement toward accomplishing companies’ goals were crucial. The benchmarks would direct the company’s effort to take action and pinpoint by when, how much, who, and where the green could enhance their sustainability.

“In the building industries, matured sectors such as the MNCs demanded the buildings they were renting to be green building because they wanted to protect the environment by using less energy electrical appliance. Our concern with sustainability was when the cost of building a green building increased then the selling price of the green building would also increase. At the moment, the cost of green building increased but the selling price was still remained where we had to reduce our bottom line. Therefore, it would take some time for companies and buyers in Malaysia to adopt to green building because it was difficult to change although the change would give benefit to the humankind and the environment.” (Haji M).

4.5.1.3 Sub Theme 4.1.3: Green Aspects in Ameliorating Organizational Sustainability

The commitment to implement green innovation given by the top management was the tangible steps to make the companies more sustainable by examining what the companies had been achieved, on plan, behind plan and not achieved. The companies’ compelling business case for sustainability had revealed a strong business where their operational had saved and improved the energy efficiency. The achievement of managing carbon footprint and waste made the sustainability to be incorporated into financial reporting, and review that contributed towards their companies’ performance profit.

By engaging the suppliers with the companies’ commitment towards green innovation implementation, the organizational sustainability would always be in the radar. The companies should have a sustainability template in place for the purpose of expansion used. It could be a seamless approach to sustainability across all areas of the companies’ businesses as it had been expanded into the international market.

Amirul R and Hassan S believed sustainability covered a vision of what a company could become, the commitment of the people, engagement with others and a lot of hard work to stay relevant. Hassan S had explained that the leaders must be nurtured with both the physical infrastructure, and virtual infrastructure related to the future demand inclusive green innovation with various group. Common leaders would have the ability to organize and inspire a group of people to achieve common goals. However, effective green leaders were committed to bring the best out of their employees, and pursuing the highest level of program excellence within each green philosophical context. Both participants saw the **green leaders as highly organized and assertive persons who understood how to engage the employees to their vision.** Beyond that, the **green leaders depended on what kind of economic forces the company was in, what circumstances it was in, and what kind of political situation it was operating.**

Tun M had different view on sustainability because he valued leadership as the important aspect in maintaining the sustainability of the country, and also was applicable to a company. Government was the biggest spender because they had major mega projects all over the country to improve the quality of the nations, and sustained the prosperity of the country. The spin-off from these mega projects was very big especially when the climate change issues were the main concern of all countries. He had reasoned that **a leader must have respectable perception attributes, and ways of acting that effecting in employees trusting in the leader's decision and target especially when the critical situation like climate change would impact on our businesses and industries.**

“The so-called green leader’s qualities might come easily to some rather than others but personal attributes of a good green leader can be developed by focused. The employees will execute their leader’s assignments and expectations in sustaining the company in anything green is the major priority.” (Tun M)

When talk about the aspect of green that kept the companies sustained, Datuk A did not see any direct impact other than the reputation of the company. Haji M also supported the view of Datuk A because at the moment the advantage to his company was not in terms of money but the competitiveness through the green image. It was despite of the fact that the top management was yet to heavily embark into green innovation. The image of Tabung Haji had advance due to starting the green initiatives in Malaysian building design. It believed the end of the day, it could bring material value but at the moment green was considered as bringing the value to company that was sensitive to the environment, energy usage, pollution and the fate of world community. By developing the reputation as green projects contractor, Haji M’s company could get more projects that would sustain the company in the future.

Coming from the established MNCs, Dr Johan had rated green innovation implementation as a part of its corporate social responsibility to participate in the carbon foot-print movement. Repso had been putting a lot of emphasis on reputation because reputation was good, and become a symbolic of its products and the image of its brand. Through green also Repso truly could anticipate what the future demand might be in 15-20 years where there would be purely on green products. He strongly saw that by having protecting its reputation, Repso had also been trying to maximize it opportunities in the international market.

“It must be specific which part of the company that we decide to be green. If it is in the business process, then we need to suit with the operation. If the process does not suitable no matter whether it is green, then it will be chaos to the company’s survival not yet sustainability. This is very subjective.”
(Tengku K).

4.5.2 Major Theme 4.2: Green Innovation Critical Advantage

This study had degraded the natural ecosystems that provided with the ‘green infrastructure’ particularly when we built concrete non-green innovation infrastructure for the community benefits such as reservoirs to regulate water flow, using fossil fuel for transportation and block materials for buildings. The practice of green innovation investment was yet to reach scale that had left significant opportunities for enhanced services and cost savings unrealized. Although healthy ecosystems could reduce the operational costs of these structures and implementation, the participants saw the investing in restoring or enhancing various types of green innovation was rarely pursued either as a substitute for or complement to non-green innovation infrastructure unless it was the direction from the trend of the industries.

4.5.2.1 Sub Theme 4.2.1: Green Innovation Criticality

As being highlighted by Hassan S, this study insight at things that was very much nurtured by the circumstances surrounding us. The struggle to get green innovation put in place could be associated with a long list of institutional challenges, including knowledge gaps, and old habits of defaulting to old non-green infrastructure. This was very essential in nurturing the leaders to be green-thinkers. He felt so blessed because he had the opportunity to work with various groups including with the current

company which largely staffed with engineers trained to build non-green infrastructure. Although GLCs M MD had an accounting background, but as top management she saw the good side of green by building GLCs M R&R to be more open concept with the nature. This reduced lighting during day time, and used less air-conditioning by putting more normal fan.

Azlinda AZ made a clear statement that all over the world, we were in a critical moment because natural ecosystems continue to degrade, and costs continue to rise due to the existing gray infrastructure continues to age. It was how we really regulated our companies and our operations to suit to this kind of environment. She had suggested that we must be able to adjusting our learning, knowledge and re-skill to migrate and agile enough to change to learn something new and so on.

“Even if just a portion of upcoming company’s infrastructure investment is directed toward green innovation infrastructure, the opportunities for cost savings and green-related benefits are enormous.” (Azlinda AZ)

Environmental issues had received substantial attention in corporate green operations as being acknowledged by Tun M. He believed the top management could only decide how critical the issues of green innovation implementation after they had gathered all the information and study the possibilities. They needed to check how it corresponded to the scenario of the companies’ operation.

“You need to relate it to cause and effect so you will know what is the real problem that your company really need to focus and consider, whether it is on operation, innovation, work ethics, or cultures. Then, you treat that critical issues which could jeopardize your business and the management must sort the best action to take.” (Tun M).

In the utility industry, Datuk A explained that the green innovation was not at critical situation as long as the green products and services did not reach the Green Parity. At the moment, gas was still below the market price because it was heavily subsidized by the government, and relatively the coal was still being cheap compared to other technologies. Although, in fact, the tariff had risen a bit, it was still affordable to the public, as he had mentioned below;

“In our Gemilang 2015, we have develop our core for the next five years plan to be Green – Growth – Global.” (Datuk A).

Haji M observed that for the near term, green innovation would affect on the companies' bottom line due to the cost of implementing it. Currently, the adoption of the green innovation implementation had not so much impact to the companies as a whole. He saw that in his company, the administrative side was implemented green more compared to the company's operation at the site.

No doubt to Dr Johan that green innovation was very important because he had elaborated that in order for us to find sustainability in our business, we had to look forward to see what was the future demand was like. That was the reason why Repso, and probably ExxonMobil, spent billions of dollars in terms of Research and Development (R&D) so once they had fully developed it, it would become a complexity advantage to them. Even though it was rare, but for example, if GLCs B had created and came up with a proven way of to do things which had not been employed by Repso, he was sure Repso would want to learn from GLCs B unless it had been patented, copy right, trademark or whatever it was. To him, knowledge must be shared for the benefit of sustainability of the community and companies.

“Six Sigma is originated from Motorola and now it becomes commercialized where everybody can learn for free.” (Dr Johan).

Interestingly, Tengku K had highlighted that it was the methods and how the company operated were the main focus when considering green innovation implementation as critical or not. He recommended firstly managing the current resources we had such as the business process especially on staffing. Then, he touched on a very subjective issue according to the available budget that every company was going to use.

“Of course new technologies have the advantages but it needs time to train the current manpower, resources, and might spend money to get it totally functional.” (Tengku K).

4.5.2.2 Sub Theme 4.2.2: Benefits of Green Innovation

Amirul R had revealed that he saw more oil and gas companies were going green than ever before whether it was physical infrastructure or virtual infrastructure because they had been looking at the circumstances surrounding them, and the community as impact of carbon footprint and global warming. Here was where he thought it was important that the **leaders to be aggressive as green policies facilitated with public relations and marketing**. He agreed that green innovation had more benefits to give as he had mentioned below;

“Nevertheless, it is also increase our profits where getting into the green movement ensure the consumers know that they are not destroying the environment when using our products.” (Amirul R).

Hassan S also agreed with Amirul R on the benefits of the green innovation implementation;

“In our daily operation at the R&R, I think we need to reduce waste. By going green we can promote our users to reduce waste and with some innovation to make it interesting for our users to participate. I believe with minimal packaging where users stop to eat in the R&R (Rawat dan Rehat) can cut costs and attracts environmentally awareness from our users.” (Hassan S).

Always with different perspectives, The Statesman had implied that local and oversea companies could see the benefit of green innovation implementation from the taxation advantages point of view. He stressed that we had to look at the price, quality of the products and the people who were going to do the green related jobs. We had to think on the federal tax breaks and grants available for green innovation businesses to expand. We wanted to invite more investors supporting our energy efficiency, for example. Tun M also added that we wanted our nation to be savvy shoppers where they knew the green benefits to them. End of the day, our brand's reputation could develop brand loyalty in environmentally awareness shoppers who inquired into how a product was made before making their purchasing decisions.

Agreed with Tun M, Haji M had contemplated a lot of these green initiatives took by his company to improve its projects. He revealed that they were in the bigger scope now because if they wanted to include green, so the estimation of the building would be more and had sizeable impact. From the experience of implementing green innovation, they could amend current practice for their future works. This had been clearly said by him;

“To my view, company’s organizational sustainability mean the future of our projects would emphasize more on the green building initiative. However, in the administrative operational wise, it has no impact to us directly.” (Haji M).

To emphasize more to Tun M and Haji M statements, Tengku K had deliberated that green innovation definitely had positive outcome to the environment and society. By putting green innovation elements in their designing of building, they could reduce their overhead which later on would bring profits in return. On the other hand, if adding green innovation would increase their overhead, then their profit would be less. The bottom line was the target profits of the company that they must answerable to their shareholders, explained Tengku K.

4.5.3 Major Theme 4.3: Green Organizations’ Prime Challenges

Implementing green innovation required every organization to have an annual operational plan that fulfilled its long-range strategic plan to maintain its sustainability without jeopardized the company’s steady profits. The top management needed to identify the funding needs of the organization through the creation of the annual budget and the growth trajectory of the organization, and the organization’s potential sources of income or support. Appropriate staff must be identified to involve with green innovation, and cultivate potential action to apply for funding and report the organization’s accomplishments on an on-going basis.

4.5.3.1 Sub Theme 4.3.1: Organizations' Business Challenge

Both Abdul W and Mazlan AS believed the next generation of executives would be more assorted because nowadays most of the global companies had been growingly led by a collection of leaders with multiple expertise such as in language, culture, technology, and financial background. The participants had defined global companies as the companies which conducting their businesses in more than three countries, and covered more than two continents in many types of industries. Thus, it made it easy for these groups of future leaders to shape themselves according to the task at hand especially in the green trend. With greater diversity of experience and thinking style, age, nationality and gender, the new green leaders would always make better decisions from these advantage points.

In the point of view of GLCs B, the most critical issues was to formulate a good green business model because Pertamina of Indonesia for example, even they were a part of OIC producing more than GLCs B, but it had not being led by leaders that were competence, and the company could fail anytime. As being stressed by Amirul R, it went back to the fundamental of business as to create a compelling customer value proposition, devising a green innovative profit formula to deliver it profitably, and marshalling the key resources and processes needed to fulfill it especially in carbon footprint. At year 2000, 20 percent of GLCs B' operations were outside Malaysia as being set by the late Tan Sri Zainal Abidin who decided that GLCs B could not just rely on domestic competitors. The company had to introduce those new models in the right markets because company might have better opportunities in places where there were no existing infrastructures.

“Our leaders will get maximum learning exposure when to figure out what drive the widespread adoption of clean technologies if the company is ever to move beyond niche markets. Their strategic planning will ultimately offer to be part of the larger clean-tech infrastructure that requires nurturing the favourable grip markets and also favourable government policies.” (Amirul R).

The Statesman had perceived that **the most challenge for business was for the leaders to have personalities and intelligence because leaders who were looking very grand but stupid were not going to work. Intelligence was referred to their background, the amount of reading that they did, whether they were very hard working and ultimately their excessive experience through working and training.** They must know how well did the companies worked to lend themselves to government contracts and grants, and determined the proper training they were required in order to be more competence. Tun M had really emphasized that new green leaders should understand the benefit for a natural partnership between the business goals of a national corporation and oversea either through staff or the BoD. With the intention of being sustainable, companies needed to identify, and then cultivate a diverse pool of support such as the potential government funding sources for their business in terms of expanding to overseas.

“We can have bad management and it will show sooner or later. However, the good management might fail too initially but over time he is going to succeed if he keeps on trying.” (Tun M).

Besides the challenge on the top management’s perception, the industries needed the support and opportunities from the government as mentioned by the participants below;

“For us the most challenges we face are the fuel cost increase and fuel availability. GLCs B sells their fuel to us is not at the market price and they are losing because the price is subsidized. If GLCs B decides not to discover new oil fields whatsoever, this definitely will jeopardize our operation.” (Datuk A).

“As for the building industries, the challenge would be getting the project because projects are very limited due to the land and financing limitation. Therefore, we need to be innovative by financing the project especially with green innovation that supported by the government. We have to look at that capital to sustain the company as far as the project is concerned due to limited projects offered by the government.” (Haji M).

“And the solution that TH as GLICs can provide is it will develop its own building, and once completed they will lease to other government agencies and privates as long as it is syariah compliance.” (Tengku K).

“For the insurance industries, I notice that the challenge of our business is to reshape the organization because it is very much depend on the government concession, the agreement, the government policy, the public needs and so on. The staff should have the charge to the organization’s current sources of support as well as its strengths to create a long-range plan that would leverage the organization’s current assets.” (Azlinda AZ).

4.5.3.2 Sub Theme 4.3.2: Organizational Adaptation to Environment

When it had touched on the environmental issues, majority of the CEOs were using corporate programmes as an approach to cultivate strategic renewal on launching new directions for growth, enhancing business models, inspiring productivity and instituting organizational sustainability. They had designed the programmes as the instruments to connect with their staff and shareholders in adapting with the desired environment outcomes. They started significant changes in their organizations and encouraged transformations for strategic restoration dimensions of their businesses. In addition, corporate programmes were acted as main function in resource-allocation processes, as they demanded primary investments in terms of management time and funding.

Amirul R had explained that when talking about GLCs B, it was about representing Malaysia and their reputation was very at stake when involving the environment topics. The Gen Y of GLCs B had needed to be more engaged in the strategic decisions because these constraints had the effect on creating new jobs-to-be-done related to sustainability. He revealed that his company's aim was to make the environmental footprint smaller and run the business profitably using **clean energy**. They believed they had a thorough innovative green technology that they had developed and adopted to fulfill those jobs, through equally innovative new business models. He had expressed that;

“We need government support for the effect of the transition to sustainable technologies be faster than the market will do on its own. It is not only in the traditional form of underwriting basic and applied research but also through tax incentives. We also see the criticality of policy changes because the new technologies are likely to remain too expensive for the consumer in the short term.” (Amirul R).

However, Azlinda AZ always emphasized her opinion that companies could perform better in whatever situation regardless they were related to the environment if they really had adjusted their practices, skills and knowledge of the people, and kept learning in the changing times because environment would not go static. The companies needed to flexibly migrate where some procedures must remain constant in order for work to be done efficiently while other aspects of an organization must evolve in order to stay relevant.

Almost similar to what Azlinda AZ's statement, Abdul W had shared his experience that company adaptation was vital to fix imbalances and recover inefficient processes within an organization, and how the organization was operated in the world at large especially when environmental had a major impact. He told that the staff knew that their company vision was not meant to achieve in short time and it functioned to direct their effort for them to take action to go where and do what. Thus, they might need to adapt their core value when the company had implemented changes in an organization's procedures and culture in anticipation of a change in the market or legal landscape the organization operated in such as global warming and carbon footprint.

“As the result, I am sure company has to innovate new means of generating the revenue lost in the changes if any while other aspects must remain constant in order to retain our client base and reputation.” (Abdul W).

Looking at the logistic industry, Northport had advancing and steering its supply chain to implement best practices in the environment of energy management, carbon management and other green innovation practices. Nizam T shared that Northport had wanted to be the first port in Malaysia to use hybrid machine that was environmentally friendly that could save up to 35 percent of its energy cost consumption because its supply chain was so substantial, and it linked with numerous industries, and significant enterprises that it had worked with. This company was trying to add up of what it had supposed to be on the environmental sustainability curve as it had needed to be a superior in this regard what others were doing in its industry. The dynamic force had arrived into utterly due to the competing demands

that required the top management to concentrate on the market forces speeding up change, and resources were devoted to persisting to the front of the curve and look forward to what would be next.

“The top leader wanted Northport to support the government initiative on green technology. Northport would save on the energy by not relying on diesel engine and future more the new hybrid machine would release the clean energy to the environment.” (Nizam T).

When dealing with organizational adaption to environment, again Tun M had pointed out that everybody especially the top management of GLCs must have credibility conformity, systematic, organized and the most important were the willingness to work very hard up to willing to stay back at night. They must find out as much as they could about their business, and who their rivals were in order to understand who they were competing with, and especially what they had done to accomplish organizational goals to achieve success. The inflexible corporate structures were lacked of ability to act in response quickly to change that result to losing to the company who became **shape-shifters through continuously restructuring themselves to adjust to changing situations and new prospects.**

“With so many issues regarding global warning and Western financial crisis, the top managements must use their wisdom in gauging their company’s own unique circumstance and use the assets (workers, their ability, level of intelligence, knowledge, money) wisely before accustomed to the business environment and challenges to ensure its long-term success. The current culture and work ethics could be the constraints to drive green innovation change regards to sustainability such as using clean energy and reduce carbon footprint. Detail planning of shaping the green innovation efforts and new businesses is needed when defining which part to innovate.” (Tun M).

Dr Johan of Repso also agreed with all the statements given by the participants from the GLCs;

“We adapt by understand the scenario of the places we are operating. Usually the clean product is very expensive because green innovation and technology are still new in this country. When we want to promote LPG to the consumers who are used to fuel and diesel, we will state that problems that caused by carbon emission. Our product Liquified Petroleum Gas (LPG) is quite expensive but it is environmental friendly. We also need to look at our serious competitors in Malaysia like GLCs B and international level like Exxon Mobil and BP in terms of their products and services betterment and efficiency.” (Dr Johan).

4.5.3.3 Sub Theme 4.3.3: Decision to be Green

As being mentioned by Datuk A, there was no refute that bank and insurers had a distinctive function in the vigor of our global ecosystem either for short or long term.

This was due to their decisions to fund projects and organization which in actual fact made them the gatekeepers for sustainable development. Their decisions were guided through the assessing and managing the environmental process, and reporting the social risks that had been involved.

“When choose green innovation implementation as a tool for the sustainable development, companies needed to develop a plan to evaluate projects and organizations funding from the financial institutions. The price of the coal has increased a bit because those electricity producers who use nuclear are not running nuclear power plants due to the stigma and the worries of pollution. In point of fact, we define nuclear technology in producing electricity as green. So, in the next 5 years, our electricity technology will be growing, expanding globally and going green.” (Datuk A).

As being observed by Aziz A, he noticed that the contribution of GLCs in green movement especially in the clean-tech businesses was immense, and it was a part of their socially responsible business. Nevertheless, there were companies making breakthroughs in technology, in addition to companies disrupting existing industries, in an area like shipping or green buildings which were not technology-dependent but they had insisted on innovative business models. He also added that particularly in the institution's corporate values and overall risk management systems, any risk management decision required support from the CEO, the BoD, or another top management committee. Without their backing, it would be quite difficult to implement the green innovation in the companies.

An aggressive green leader could initiate activities that reduced negative environmental impacts that consequence from business operations by reducing waste and saving energy. Amirul R had suggested that the company could cut cost by consuming less through reducing overhead costs and improved the bottom line; reusing materials and goods out of reducing the amount of new materials it had to buy, which saved money and improved its bottom line; and recycling due to cut down disposal costs and kept it out of the landfill. In other words, all these would boost up its public image because whatever GLCs B had been doing, it was all about what was best for the team, the organization, and for Malaysia. Its customers were looking for socially and environmentally responsible behaviour from GLCs B as shown in the Earth Hour participations of all its petrol stations. It also saw green movement as a competitive advantage for the company to attract and retain staff because talented

people wanted to work for companies that were committed to reducing their carbon footprint in their industries. He added that;

“The top management needs to evaluate the current policies, guidelines, and tools often. They have to examine and quantify the system’s performance when implement the green innovation. Furthermore, they should report to the internal and external stakeholders of the outcomes and honour achievements whether large or small. This is not a one-time task; it needs to be routine.” (Amirul R).

Azlinda AZ had agreed with Amirul R that nowadays many young professionals were interested in jobs that had a positive impact on the environment and would be more inclined to work for companies that were environmentally friendly in certain industries. The success in business particularly in green technology had always been led to the company that could fascinate the innovators and leaders who saw opportunities in green. The company hired the new recruitments whose had the learning ability and agile to change to learn something new. Actually, this was why we needed to have good leaders, and **leadership programmes in placed so we had people that up to the green challenge**. She also had brought to mind that in order to change the companies to be green, the top management must understand the regulatory requirements and the relevant international standards that effected their operations. They needed to check and connect with relevant stakeholders to understand their predicaments and concern. Green leaders were required to deal with and configure their expectations by getting through to their colleagues and learn from them.

From his vast experience in the industry of automotive and transportation, Mazlan AS had faith that for any company that was going into a green business, it needed to thoroughly be familiar with the green policy plan, and mostly ought to be able to price the externalities that these businesses were trying to figuring out from energy production and other manufacturing that led to pollution. He had reasoned out that if the green policy plan was not supported by the government as quickly as possible, then company would have a problem in terms of getting access to capital, getting commercialization, and getting penetration in new markets that green innovation was a future.

“ISO 14001 management standard certificate is related to the environmental challenge. The top management could improve and expand their products and process over the time by a formal management cycle of a lean system too.”
(Mazlan AS).

Interestingly, Dr Johan had seen that the option to go green was imitable and not actually difficult because in terms of transfer of green technology, it was very fluid. Basically, it was matter of about a year the most before other competitors could learn how Repso could do it. As the result, they needed to embark on the outline that had a communication strategy in place for patrons, member of staff and other key stakeholders. Not to forget, Repso also needed to respect the public guarantee, and display a genuine commitment to sustainable development by making sure the company could follow through to stay away from blames of misleading information.

A point from Tengku K was obviously noted;

“I see the green innovation potential within next two years where all developers must focus on the green buildings. So, we have to move towards that with the challenge to sacrifice on the margin whatever that we have been agreed. We need to check on the price and rental of the products that we have to get the same margin that we want. When all those green things is a trend and a must, then it will not be any challenges anymore because it is a norm for everybody to go for green. At this point, the company must think about special features with green innovation implementation of their products.” (Tengku K).

By having said that, Tengku K’s company did not use green innovation tools that did not fit into their existing processes. Their top management had developed guidelines together with business units that were related to the operation to make certain they had sufficient opportunity for discussion and feedback. The move to green innovation had supported the business units during the implementation stage with instruments such as direction documents, a training programme, and a communication arrangement. Here, where he had acknowledged the role of consultants in keeping up with the development and implementation, daily operations, and decisions which had to be made internally. All the calculated risk must be ensured by the experts before the authority had questioned and worsen business decisions.

4.5.4 Major Theme 4.4: Green Innovation Implementation Performance Indicators

Companies needed a new product development system and organization in place in order to compete. The top management should deal out the functional and process responsibilities for the planning, design, production and introduction of new offerings

because innovation was permeated all functions and activities in broader scope than the new product development process. Therefore, when implementing green innovation, it was foremost a mindset that built upon everyone's creativity and ideas, and the organizational discipline of teams working constructively across functions and units to implement them before a set of processes could be taken place. Frequently, the lack of formal innovation management system had resonated past legacies that were rarely confronted by management to acknowledge the performance indicators.

4.5.4.1 Sub Theme 4.4.1: Organizational Green Sustainability Performance Basis

This study was more than agreed with the opinion of The Statesman when he kept on repeating that leaders must always question the current practice of their companies before deciding on any change at any level because the innovation and implementation of new business strategies were common with gamble. Tun M had stressed that the companies only accepted the change with regarded to green with careful development of a business strategy to detect problem areas that let the companies' time to mend them before led the idea to market. Senior managers' experiences were good but before they had been trained and told, they could not be good leaders especially when developing better products faster, more efficiently, and more effectively. All elements had been the priority of the competitive agenda because effective design and development of new products had a momentous effect on cost, quality, customer satisfaction and competitive advantage, elaborated Tun M.

*“I believe the demands for continual perfection of product quality, reliability and cost will lead to a meeting point on effective management of engineering design and technological change. Therefore, **the top management should have profound and extensive knowledge on green innovation and sustainability matters to produce new selections for tailoring products to meet the needs of an increasingly diverse and exigency markets.** They will fail initially but over the time they are going to succeed if they keep on trying and correct that failure and keep on trying again. It is because the success or failure of product development could have serious outcomes on companies’ long-term market performance and profit.” (Tun M).*

Looking at GLCs B, Amirul R had seen his company’s sustainability activities related to carbon footprint could add to profits and business model change. This was due to its global mindset leaders who had considered business model green innovation as a strategic factor when competing with other petroleum giants producers. Its business models were consisted of value proposition and operating model that the leaders considered appropriate with the company’s business. To them, the company’s value proposition determined what they had offering to whom, and the operating model had determined how they profitably delivered the offering.

According to Datuk A, innovation was meant to support our global economy where we had identified the power of innovative ideas to revolutionize the industries and generate wealth as our strategic priorities. His company had produced compelling competitive advantages when pioneering a new programme - Demand Side Management (DSM) because they wanted to see the future generation aware on the importance of energy efficiency.

*“Our DSM programme encourages the users to use the electricity not at the peak hour of the day. We believe the usage of power efficiently will reduce our operational cost and save us on spending for building new power plants which may cost between million to billion ringgit. This is among the innovation techniques that we do to reduce carbon footprint effect to the environment. Our motto is **growth** means our profits must grow, to sustain we are going **green** based on these innovations and we are going **global**.”* (Datuk A).

For the building industry, GLCs P had maintained its performance by using Malaysian GBI rating system in their projects. However, there were developers who used the Leadership in Energy and Environmental Design (LEED) that had been adopted by Singapore. However, he said when they compared GBI with LEED, both were more and less the same but they could not benchmark properly. He explained that;

“Singapore’s LEED may be silver or platinum but when being assessed by the GBI, it might be is only just gold and not platinum. To me, GBI is Malaysian standard that initiated by our local authorities that is higher standard compare to the Singapore.” (Haji M).

4.5.4.2 Sub Theme 4.4.2: Incongruent of Green Innovation Implementation

It was obvious that the learning ability to acquire basic knowledge of green innovation must be embraced by the employees in systematically and intuitive methods for idea generation. Azlinda AZ had detailed her above statement that the leaders should have knowledge of an expert from various professional and academic disciplines on the methods for determination of the search field, for idea evaluation and for realizing their ideas. These expert leaders knowledge should cover the complete innovation process, the high technological insight and empathy capability, extraordinary ability to recognize and analyze green innovation needs as well as to share on their gained knowledge.

Amirul R highlighted **green innovation was an investment in leadership and the team due to the factors for instance short-term demands from investors, talent deficiencies, the defy of implementing innovation-friendly rewards structures, notwithstanding the vague nature of innovation, and the diverse intellectual structures that were required to head start innovation.** In valuing green innovation, the top managers must lead the green and innovation responsibility respectively by considering how green innovation drove, encouraging their own invention skills, and honing their capability to nurture the innovation of others. Furthermore, they must vigorously occupy their organizations with appropriate discovery-driven innovators to ensure green innovation would be deciphered into tangible and sustainable innovation rewards.

For Tun M, green innovation was a complex business because to be really green innovative company, a leader needed to have many traits, abilities, knowledge and willing to work very hard in studying its benefits. He had drawn attention to show how important a good recruitment of a leader had been. Personal traits could be trained and they were responsible for majority of the innovation success. Top management could possibly change the company by emphasizing the strengths and turn a weakness into strength. Therefore, the company must train its employees to make green innovation much more likely as culture and installed an innovation-friendly framework as part of the work ethics. He brought to light that by using the assets wisely together with these considerations, the company could set up an internal training program for innovative employees by identifying who should be trained, what

can and should be trained, as well as the methods and knowledge important for green innovation because the persons who had at least some of the mentioned traits and exposed to the green innovation friendly culture and work ethic should exist in the company for it to prosper and sustain in green environment.

4.5.4.3 Sub Theme 4.4.3: Significance of Green Innovation Implementation

Green innovation implementation had brought a new perspective to the community where price was no more impediments when the consumers wanted to buy green products or subscribed to green services. Many companies had started their green programmes that motivated and engaged their employees and customers. However, there were some companies which publicize their green and sustainability efforts but only applicable to their companies only.

Azlinda AZ remarked the collaboration process that her company's had been accustomed to, had the most impact due to the green innovation implementation. The employees had different strengths with regard to green and helped in different ways. Thus, the value of inter-employee collaboration was best observed when looking at a new product, service, or process and how it had been implemented. Her company had discovered that the original idea of the green business case were developed, condemned, expanded, checked, and purified throughout the implementation plan. Collaboration occurred at each step, because someone with a something else perspective on green innovation had mediated and helped move the idea forward, and in some cases, backwards before it could go forward again. They needed to find ways to support those with the same behaviours at the frontend of the process.

GLCs B and Repso had been experienced that by creating product or technology platforms, companies could really start to leverage green innovation. When they had been approached by their suppliers, they were mentioned about their green platforms and their challenge across different businesses that required them to find solutions in all the potential multiple businesses. **The return on investment for both their companies and their supplier became much higher owing to the green innovation demand.** Into the bargain, it also had assisted them to develop innovation strategies with their suppliers because every so often suppliers had been working with fuel industry but they did not have the capability to work for transportation. Through the strategies, GLCs B and Repso could allow their supplier built up capabilities in areas that these suppliers were not aiding today.

In the view of The Statesman, top managers had to position an overall frame for green innovation by expounding a vision and mission for innovation, recommending a set of values to guide innovation activities and auditing existing innovation performance. He had suggested that it was a beneficial exercise to frequently slot company's innovation system and organization in a broad reconsideration when introducing new innovation governance guidelines such as green. The job of the top management team in this endeavor was critical as it had gone ahead of making trivial structural changes and assigning new persons in charge of present departments. No doubt the leaders must define how the company would distinguish and create value from innovation; how it would examine and produce value; and how it anticipated understanding and encapsulating value. They needed to select organizational models for the allotment of

crucial and supporting tasks for innovation, and establishing committed process management mechanisms. With their experiences and enough training, the leaders should know how to assign resources and set up priorities for innovation as part of an explicit innovation strategy and plan in kept up with the company's objectives. In addition, Tun M acknowledged that through their assets availability, the leaders of the company should know how to identify and deal with current obstacles in the company's organizational system and sources of struggle within the structure in order to construct a lasting innovation culture. The management skills of a good leader would be revealed on the monitoring and evaluating results on an on-going basis, and creating a process to address conflicts of interest within the top management team so as to make innovation sustainable.

The way Haji M had seen this issue, he encountered that the experience they had in designing and construction of green building could get them more opportunity in the government projects that emphasized on green buildings. So, by developing the green buildings would indirectly help his company in getting other projects that in some way would sustain the company because sustainable company was due to their experience, and they had been improvised their new more challenging products and projects.

On the other hand, Tengku K had been disagreed with Haji M's opinion because to him green innovation alone would not sustain the organization because if everything was going towards green, then the Government now had also to move towards it across the industries and nationwide.

4.5.5 Major Theme 4.5: Green Innovative Business Model

Both green product and services model had shown the increases of the manufacturers' market potential which indirectly boosted the distinguished product and services offered by them and fosters customer trustworthiness too. However, manufacturers and customers usually were worried regarding the threat absorption approach in addition to the challenges that agreed on the right price of such services.

Green concept had applied sharing business model where the key driver was to enhance resource efficiency and severe resource consumption such as car sharing, and cost savings related to sharing products which allowed the product providers to profit on the business model. Nevertheless, the competitiveness of businesses was the key barriers to such a model where high frequency requirement of customers, tendency to own a product rather than to share it and availability of the shared good had become the priority.

4.5.5.1 Sub Theme 4.5.1: Green Innovation Opportunities

From the above data gathered from the participants during the interviews, the researchers were certain that green innovation strategies had presented product manufacturers and merchants a competitive advantage in product differentiation and cost savings. It could be said that **green innovation implementation emerged across almost all consumers segments including automobiles, electronics, durables, energy, health care, packaged goods, and retail.** A number of players had been utilized their 'greenness' as a competitive tool to leaner operations, bigger

market share, and more appealing brands. Nevertheless, there were a few of companies had encountered obstacles that resulted in higher costs, allegations of ‘greenwashing’ where their green innovation implementation was not at par as what they had been announced, and impinged on their customers. **This study obviously observed that a clear green innovation implementation agenda would separate the winners from the losers where a top-down vision and coordination across the value chain would look on a holistic approach.**

During the interviews with all the participants, the researchers had explored across the consumers industries to see the green opportunities especially when these companies had made use of a total green innovation implementation approaches across the value chain of their businesses.

As being revealed by Aziz A, since the GLCs were big companies in Malaysia, they should continue to focus on environmental performance and energy used in the downturn. Our government had been repositioning new momentum for the economy that most green innovation things could save money through being more efficient and cost-effective either by creating new operating procedures or products to sell externally to customers, especially in carbon footprint and renewable energy management. Through his observation, he had identified that dynamic businesses top managers should look at their products and services portfolio and identified those which were not well-pointed for a shift to a low-carbon economy. There might be an action measure that companies could consider to undermine products, services, or

divisions which they thought there would be less demand in the future, and concentrated more on those that were more efficient, less polluting, cleaner, and might be more in demand in the next five to 10 years.

“Producers and retailers of products and services under us find it is wise for them to secure the hearts of green consumers. Through the green approach, the companies could strategically utilize green planning which integrated green objectives and resources into their corporate strategy, their green processes which permitted companies to exercise what they discourse, their green product bargains, and their green campaign and statements.” (Aziz A).

Similar to what Hassan S had been said, it was agreed that top leaders had to keep on repeating the companies' vision as it had no turning back in the attention and keenness among government and investors in **funding clean technology or green businesses**. In addition to what the participants from oil and gas industry said, there was a very authentic awareness that climate change had been increasingly become a global issue especially the energy volatility and price, and energy insecurity in terms of geopolitical forces. This study saw the points when Hassan S told that with all these macro forces were very much still in the radar, employees would tend to incline to continue to see interest in new, environmentally sustainable product development, innovation, change, and working at opportunities that were going to interpret into business success, even in this downturn and certainly as the company had come out of it. The participants from the automobile and insurance industries also had enhanced on this point,

“The government had to make the rules that benefitted both companies and community. As the result, the companies needed to join in industry partnerships with respected certification green programmes as a smart long-term investment. By doing this, many companies were beginning to adopt the standards of a few of these programmes that involved reduced energy consumption and carbon footprint from transportation, and oil and gas industries.” (Mazlan AS).

“I think during the recession we have just started seriously looking at green business. Although more new companies were making use of “green” term to describe either the name of a company or a product than anything else, I think we have not even embark on the real waves of innovation that are going to come. We have not seen the equivalent of a green marketing for example that is really going to change people's lives and how they interact. We need to pay more attention to where these new green business are going to take cause. We have to consider about the evolution of these green innovation products and services, in better applications, with viable business models, and carefully nurtured in favorable markets. We need to benchmark our governance and resources because we need to have leaders and people that are up to the challenge.” (Azlinda AZ).

On the other hand, Mazlan AS saw green did not have to be niche though many of the earliest partakers into the green sector was niche items due to a rigid consumer base, targeted benefits, most excellent pricing, and constraint availability. Since these factors had been all shifting rapidly, he encouraged the companies to promote joint venture with the international companies and became the green national player when green was progressed to where it could be a conventional consumer offer in many categories. He revealed that more than 60 percent of consumers had at least some interest in green, and were willing to try products that relevant to their needs. As being accepted by the majority of the participants, the companies needed to ensure that their consumers understood why their green products and services were superior to all the others. Mazlan AS had highlighted that Toyota was aware about the automobile owners that had become progressively more worried about the consequence of their driving to the environment. By manufacturing Prius – a gas-and-electrical hybrid vehicle with environmental benefit – Toyota’s advertising campaigns for the Prius were clearly spelt out the excellence of its engineering. This had boosted its image and sale in the automotive industries.

As companies that had been involved in the oil and gas industries, Dr Johan and Amirul R totally agreed that green could extend an establish brand equity for Repso and GLCs B because branding was one of the primary concerns for green innovation initiatives. Most consumers had exhibited an obvious fondness for buying green products from time-honoured brands. Both of them also suggested that while not all established companies could stretch into green, consumers should give preference to exploring the potential for brand extension for efficiency's sake. They also had highlighted that like it or not, the top management was required to consider the sustainability factors into their business strategies, future resources, and budgets. With some of the industries such as the transportation, oil and gas, and building had embarked upon environmental challenges for many years, they must emphasize the down to business sustainability as an underlying merit in their companies' mission statements.

An interesting quote by Tengku K that worth noted was his thought on the **intersection of environmental sustainability and innovation that ultimately reduction in the expenses**. To be more precise, he explained that companies had ~~been~~ created a lot of internal efficiencies beside a lot of new things where the companies' businesses plans and cultures had supported those internal efficiencies. We had seen many existing buildings in the green building movement right now because there was a lot of new green construction being encouraged to embark on green innovation. Tengku K had faith in the importance of tracking whether we had to comply with the green innovation initiatives such as LEED and GBI when we

agreed to implement green. Worth mentioning too, it was important to make a clear business case for sustainability initiatives. **Green innovation implementation companies were able to improve their cashflow and help to concern for the environment through transformations made to one of their products and services.** As being observed by Tengku K, among the approaches that could be done were lowering production expenditures for paper, water and waste, reducing logistics costs through more efficient warehousing, reduced the number of trucks needed to deliver the products, and improved user-friendly website for users to access the service through the internet and smartphones.

However, it was worth to note Haji M views that if we had been looking green innovation at the downside, it was surely had high cost to implement but when we were looking at the upside, we would look at the positive side of greenness initiatives as the opportunity for us to improve our image and design. He had explained that although their business model was still the same but from the view point of design and built, it would be different. However, green innovation implementation were not quite relevant to his company because when was seeing at the company's operational, green issues were not a big issue as the top management was more interested in the returns on investment that GLCs P could give to them. These green initiatives could give high return, which Haji M believed that it would, but it would take some time and not immediate.

Another perspective that this study found very profound that Tun M had suggested leaders should not focus so much on green phenomenon such as people measuring their carbon footprint or trying to change their eco impact. He **would be more looking into the leadership and culture change that came with green globalization.** Both Tun M and Datuk A had perceived that companies had to reorganize their processes and planning for a low-carbon economy that had been illustrated by natural resource limitation, and altered their stakeholders' anticipation around social and environmental accountability. Businesses had to bear these forces for the long-term advantage by changing how they had carried out towards environmental, how they had innovated, and how they had persuaded and worked together with the market. Thus it would really reframing and appreciated sustainability for decades to come. **The leadership needed to create a culture of environmental innovation within the company and set the pattern of their own decision-making.** By doing that, Tun M believed companies could invest in innovative green products in order to move toward a more sustainable future by being smart about the business models that would bring sustainable technologies to market and became competitive dynamics.

“When to green the companies, we found out that the direct green innovation implementation efforts from the top management and approval from the key stakeholders had changed the defensive strategy into the opposite commitment. Among the commitments of the GLCs were to cut global warming and carbon footprint by 20 percent as being promised by the Prime Minister to the Kyoto Protocol, double the energy efficiency usage by following the green guideline, reduced waste in their operations, and sold green products and services at prices their customers could afford. By doing these, the companies' image and reputations on these promises had made the leaders overcame a good deal of skepticism about how serious the Malaysian companies were about protecting the environment.” Datuk A.

4.5.5.2 Sub Theme 4.5.2: Growing Ahead of Niche

In growing ahead of niche, this study had anticipated that companies could go green across the full value chain especially when their consumers were coming from variety of backgrounds with different needs. These consumers had wide-ranging expectations for green innovation implementation particularly when the government was likely to grow even more demanding on the environmental effect over time. It was estimated that these facts should urge companies to resolve themselves into the position as green companies by their determination to put a green signature on the total life cycle of the products and services they market. The green information should detail the raw materials they contained, how they were supplied and transported, how they displayed in the store, how they could be used by the customer, and how they were disposed of.

The researcher was in the same opinion of Amirul R that to win and successful at green in the mass market, companies needed to move beyond initiative to attract non-green consumer group to embrace green innovation implementation. Green products were often faced a challenge in convincing consumers that the new product brought its primary benefit together with its green promise. There were some consumers who needed reassurance on the core promise, while others were needed to be convinced that it had been truly green because various segments would likely respond to different messages and features critically. The companies had to be able to connect with people emotionally so there was where they had inspired people to appreciate green innovation products and services, elaborated Amirul R.

This study had realized too that the companies' goals, engagement and messages must have a mutual and consistent principal vision in order to be trustworthy. Repso and GLCs B never overlook an occasion to send out messages about their 'clean energy' endeavors through television and print advertisements, conferences and trade shows, press releases and magazine articles, their sustainability reports, and their official web site. This shown the effectiveness of each method and alerted the companies which communication channels had been the supreme impression.

It was worth to realize that Azlinda AZ got a good point when she stated that most consumers were reluctant to compromise on product performance after paying a premium for most green products. She had stressed that they even likely to suggest that green household products had improved their usefulness compared to the traditional products although for the first time some might be hypersensitive to feature like flavour and effectiveness. That was why we must have our benchmark where the manufacturers could not be able to reduce the price despite the consumers had improbable to make recur buying for items that had given performance for green benefits.

However, the Statesman had thrown his comment confidently on the global view basic. With regardless of the economy of the western countries that was becoming deteriorates, he believed it had showed no signs of slowing growth of green. In fact, if we went to other places where people were much more advance and better organized their green products and processes, we would feel inferior of our lacking.

Innovation with respect to green would persist to be an area that consumers and manufacturers could influence to distinguish green innovation implementation from their competitors. Of course, as Tun M had been mentioned earlier, to win green through a broad community involved a more advanced targeting related product ideas and communication strategy.

“The government should reward the companies which embedded and transformed green innovation implementation goals into their specific business incentives and integrated them into their overall reporting structures.” (Tun M).

Obviously, we could see that most of the government projects under JKR Malaysia needed to have green innovation requirements especially during design and build as had been revealed by Haji M. Therefore, Haji M encouraged that now the building industry players must achieve the requirement at least at silver rating of the GBI in order to secure the next projects. Nevertheless, he had pointed out that companies had to pursue green innovation implementation early in order to shape momentum, credibility, and motivation in the companies because when mounting a green change agenda, it was crucial to have the whole team being involved. By substituting or refurbishing equipment such as lighting, toilets, electronics, and air conditioning systems, companies could demonstrate immediate results.

The other participant was looking at his company’s SoP as an aspect to be looked after for green preparation. Tengku K saw the advantage to keep update with the good things of the green innovation highlights for improvement and improvised what GLCs P currently had and done. As a contractor, his company used building

construction technologies because the products were building. However, he did not think the organization needed the green innovation technologies for itself. Green innovation factors would obviously have change on the business process such as with its vendors and suppliers. Furthermore, Tengku K's company had to give notice to the community and consulted them before they started the construction. However, they could change if there were directives from the Management because the internal operational process still involved cost when they wanted to change into the new system such as the mainframe and infrastructure. For Tengku K, the change would incur cost for example training to be conducted.

Interesting to note also, at the moment, there was no major and significant impact of green innovation implementation to GLCs Q business model because it always produce its product by using minimal cost in generating, transmitting and distributing in most efficient and optimal way. Although that had always be its business model but when fossil fuel was gone then it had to look into green. Datuk A kept repeating that its business model would never change unless only due to the viability of the fuel because if the fuel was no more it would change the fuel. The other thing it had to be responded to was the environmental activists and others.

In getting the sustainability impact right, companies were needed to put the pricing right because sustainable products were not necessarily had to cost more.

Amirul R had explained that green products should use less packaging and cost less for hauling. Aziz A added that sustainable products should be the same price or less than the products that were replaced. Nizam T also agreed that companies should aim for products that were affordable as well as environmentally friendly.

4.5.6 Conclusion Group Theme 4

This study had observed the green business models that held up the development of products, process and services with the environmental benefits. Normally the green business expansion models were depended on the technological revamped of the existing systems or utilizing the existing systems themselves to improve innovative business models.

The main challenges to the green models were knowledge inequality about the actual benefits and the costs among suppliers, financial institutions and customers, need for a transform in the mindset of both the companies, and the public institutions to be more open to craft new solutions through public private partnerships and policy efforts had to be coordinated and regulated.

On top of that, the researchers had identified that green intensification had become the comprehensiveness of the economic growth, and natural resources and the environment safeguard. With current technology and consumer activities that had created positive outcomes toward green concept, innovation could be the strategy to generate new ideas. Although green business models were still

comparatively new to industries and policy makers in Malaysia, a better insight and advance appreciation of emerging exercises had been desirable to initiate suitable policies and promote to the industry. Green construction was a good example where such projects had been highly requested by the consumers who had consciousness towards the Environment.

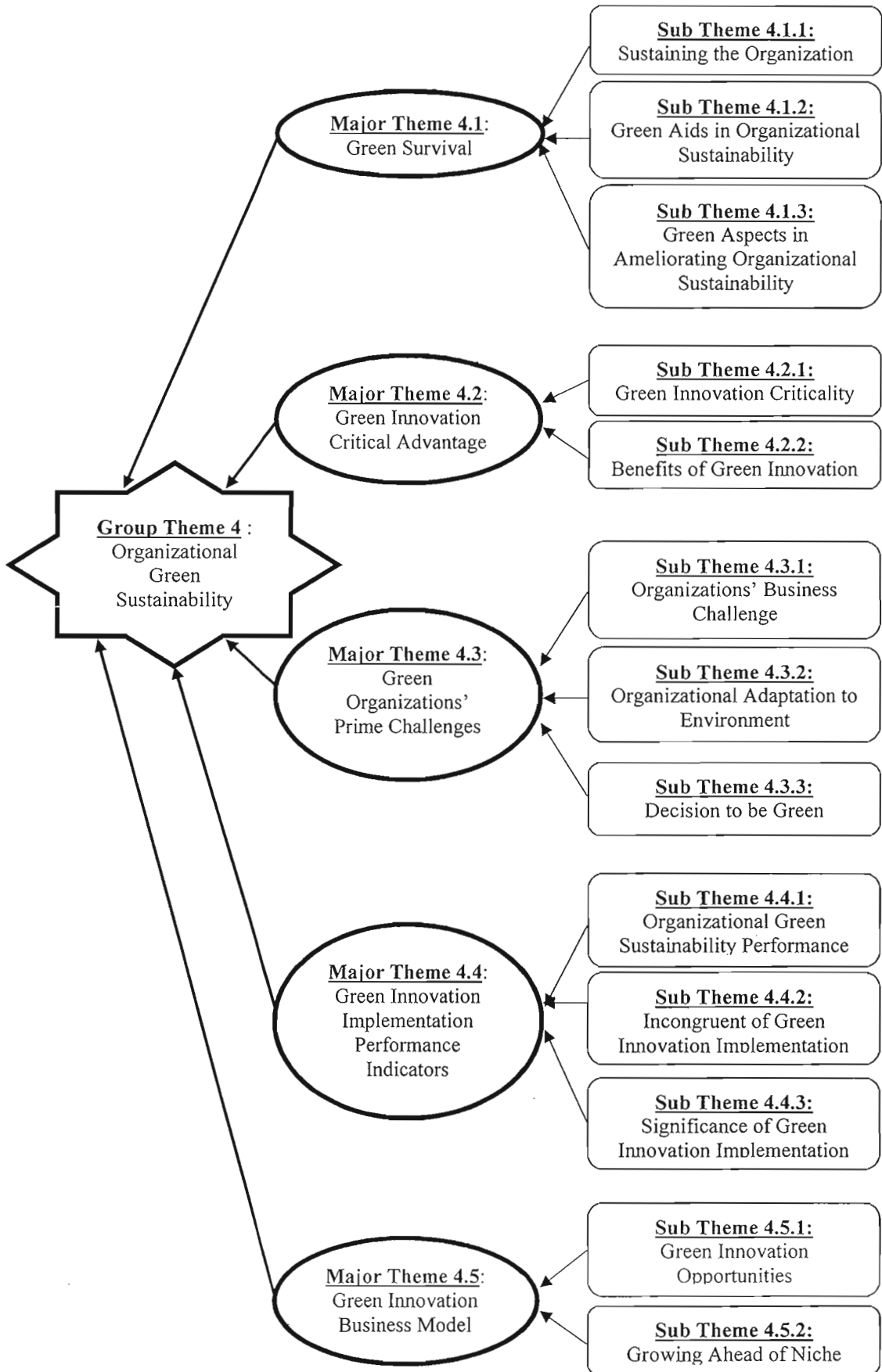


Figure 4.4
 Group Theme 4 that Shows Its Major Themes With Dedicated Sub Themes

4.6 Summary

Four Group Themes had emerged from the data collection: Group Theme 1 explained the Organizational Green Innovation Concept; Group Theme 2 explored the Green Leaders as Change Agent; Group Theme 3 elaborated on the Green Frugal Innovation, and Group Theme 4 encountered the Organizational Green Sustainability.

Group Theme 1 came up with four Major Themes and 10 Sub Themes that explained the commitment of the companies to the concept of organizational green innovation which had been relied on the importance of their processes, products and services to the customers' benefits. This commitment at the end of the day would later determine the companies' profit and growth.

Group Theme 2 arose with four Major Themes and 11 Sub Themes that explored the Green Leaders as Change Agent Group in the GLCs. It clearly showed Green Leadership was focusing on strong vision and strategy through their vast knowledge on green innovation implementation. They addressed the critical challenges appropriately by proposing big ideas and long term thinking. They were willing to commit significant resources and showed evidence of integration in dealing with green issues through effective communication engagement.

Group Theme 3 revealed five Major Themes and 12 Sub Themes that elaborated on the Green Frugal Innovation where companies were reducing waste and optimizing the use of energy in their operations and administration. Although the top

management had interest in green innovation implementation and pursuing it, but they did not want to reveal about it so much because they were worried about backlash if they failed to get profit out of it due to the initial high cost of green innovation implementation.

From Group Theme 4, four Major Themes and 13 Sub Themes had emerged that encountered the Organizational Green Sustainability. This study observed there were very few green innovation business models that held up the development of processes, products and services with the environmental benefits in the GLCs. Although these green innovation business models were still comparatively new to industries players and policy makers in Malaysia, a better insight and advance appreciation of emerging exercises of the Organizational Green Sustainability were desirable to initiate suitable policies and promote to the industry in Malaysia.

By constructing all the themes, the researcher was able to interpret the information from the participants in understanding the gaps and concluded with a propose model.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter has reviewed the significance contribution of this exploratory case study research with regards to innovation with specific focus on the top management perception findings to the new knowledge and new applications; green adaptation and diffusion being implemented by the companies, and the organizational sustainability impact due to green innovation implementation. Second, it disclosed the limitations that this study has been encountered in carrying out this research. Third, it offered a scope for further research in the discipline of green innovation in the organizational sustainability.

Three independent expert reviewers with different solid backgrounds and expertise have been asked to comment on the findings during different stages of this study. Dr Johan from Repso comes to UUM for an invitation to give leadership talk to the students. The researcher is given an hour to meet him after his talk in a very informative session to seek his expert view to benchmark. He has been sought the opinion on the perception of the top management in green innovation and environmental issues after the researcher has studied the literature review of the past studies. His comment has been made as the guideline for the questions that the researchers need to ask from the participants with regard to the current green global environmental issues.

The second independent expert reviewer that this study has justified is the comment from the MD of GLCs C, DS S. Z. as he is the Visiting Professor of UUM. During his keynote speaker in one of UUM international conference in Langkawi, the researcher has managed to share with him the preliminary findings and get the feedback from him as the leader in one of the GLCs under study. These feedback that the researcher got, has been used as the input to make the data to be more solid and presentable as a working model.

The last independent expert reviewer that this study has opportunity to get feedback is from Professor Slater, a Director from Technology and Innovation Institution in Bristol, United Kingdom who has come to UUM to give his talk on the leadership in the technology management scenario to the Management students in UUM. He has given some useful comment and feedback of the working model of this study when the researcher is at the stage of overall findings interpretation and discussion.

With referring to the research questions of this study, follows are the brief findings that being interpreted by the researchers and confirmed by the independent expert reviewers above.

- (i) When the study wants to explore on how green concepts have impact the innovation implementation in the companies and who are responsible and accountable for its directives, the obvious findings are on the brand image and future project allocation by government to the GLCs (Li, 2014; Lin *et al.*, 2014). The top management is totally responsible and accountable for its

directive although it has received input from the middle and line management, because it effects the companies' bottom lines (Cheng *et al.*, 2014; Strand, 2014). This is being detailed out in Figure 5.1 on page 259.

- (ii) In acknowledging how the top management has perceived green innovation. and what are their attributes that match their perception, Figure 5.2 on page 261 has the details of the findings. A new working model leadership style is proposed. The current **Situational Leadership** (Mutingi, Mapfaira, & Monageng, 2014; Peusa *et al.*, 2013; Stenmark & Mumford, 2011) **and Strategic Leadership** (Raza & Murad, 2014; Strand, 2014) **are combined into Eco-Situational Strategic Leadership**. Six green perception attributes have been identified where it creates a top management team that known as **Eco-Sustainable Leaders** (Avery & Bergsteiner, 2011; Dimitrios *et al.*, 2013; Suriyankietkaew & Avery, 2014).
- (iii) In term of category of innovation that widely are adopted and diffused in the GLCs, the participants and independent expert reviewers are consensually agreed that it is the technological innovation compared to administrative as being revealed by the studies of Daft (1978), Gopalakrishnan and Damanpour (2000), Ding, Li and George (2014) and Kiran *et al.*, (2013) .

- (iv) To show the significance of green innovation to the organizational sustainability, this study is successfully come out with a Green Pinnacle Model in Figure 5.3 on page 265 that refers to elements to be considered when implement green innovation such as: (i) organizational innovation through green Pinnacle; (ii) green frugal innovation pinnacle, and (iii) organizational green sustainability pinnacle. Any challenges in investing and implementing green innovation towards organizational sustainability can be reduced and properly dealt with when the top management has a proper green program and schedule in their strategic planning (Ding *et al.*, 2014; Mutingi *et al.*, 2014).

The objectives of this research are to determine the perception of the top management when the company has to deal with the environment impact and Kyoto Protocol and Copenhagen Accord (Salahudin, Abdullah & Newaz, 2013; Hallstedt, Thompson & Lindahl, 2013). The researcher is also eager to explore the level of green innovation implementation as being claimed by them, and how and where it is done in the companies. Nevertheless, the innovation has always seen as positive impact to organization growth and it has encouraged the researchers to understand how green innovation can benefit the companies in sustaining their survival in the businesses (Li, 2014). More than that, **this study is like to propose Green Frugal Innovation as the best way of looking at organizational sustainability strategically by adapting and diffusing from the best practice system as being feedback by the first and second independent reviewers.** It also has showed that the diffusion of innovation that related to green is really happening in the GLCs as being suggested by Rogers

(2003), and Bocke, Farracho, Bostwoth and Kemp (2014). **Green Frugal Innovation** process has been observed are happened where the innovation has spread within the companies over time through certain communication channels. Successful diffusion has occurred once the green innovation has been adopted and implemented to the point of routinization and results in a credible impact as branding and sustaining of the companies' image and profit respectively (Rogers, 2003).

The strength of this research is it has to go deeply into the gap of the study by having the information gathered from the participants who are directly or partly involve in the decision making level of the companies. The framework of the study also has guided the researcher in the data collection and has been avoided this study from being out of focus as data keep pouring tremendously. All these processes have been agreed by all the independent reviewers and compliment the previous studies initiated in the literature review (Cooper *et al.*, 2014).

It has found out that for companies that are at more or less level of competence for green, they have been taken a few steps towards green innovation implementation except it has not been firmly put together. These companies should know what have been happening in their own companies in terms of green by comparing with their competitors and customers' demand (Raza & Murad, 2014). The participants have enlightened the researchers that there exists green innovation implementation perform in bottom-up ways that driven by employees' good purposes where they adopt and adapt from their experiences and knowledge from other companies. They have

applied in their daily work at their workplaces individually such as in operation of procurement and logistics, product development, and marketing with less paper through the advancement of technology. When the line managers and middle managers are standing over it all and figure out how it can contribute to the companies' profit and sustainability, the top management then see the add up of green innovation implementation to a consistent strategy (Strand, 2014). However, the formulation of green innovation could have gone to the extent that companies have emphasized following rules and procedures in the role performance of their employees. Although the formalization of green innovation has tended to stifle the consideration of innovation by people, but no doubt it has encouraged the implementation of green innovation within an organization (Rogers, 2003). This is being supported by the opinions of first and second independent reviewers that agreed with the formulation of green innovation process in ensuring the successful of the implementation exercises.

It has also been identified that companies must clear on their aspirations for green by knowing what type of green innovation they have been wanted to implement (Mutingi *et al.*, 2014). In developing green brands and corporate images, their companies should be very active, assertive and vocal about its green exercises rather than being modest (Ghisetti & Rennings, 2014). The most important is they are ready to combine forces in making their business model happen.

By knowing where they are currently in the stage of green innovation implementation, the top management who practice **eco-sustainable strategic leadership style** are already know their strengths and weaknesses (Hallstedt *et al.*, 2013). They have been engaged and talked about where they want to go on green with their employees so that companies can invent a realistic pathway to reach there. They are understood what they are doing and how to go against the competition. The top management who practice **eco-sustainable strategic leadership style** (Cavazottea *et al.*, 2012; Ghisetti & Rennings, 2014) know that most of all innovative product or process developments in GLCs that are undertaken for environmental reasons have been stimulated either by government regulations (actual or expected) or by what has been labeled as market demand (currently experienced or imminently expected) (Cavazottea *et al.*, 2012; Ghisetti & Rennings, 2014). Government regulations have been directly affected the selection of projects that an organization would pursue (Green *et al.*, 2000). The **eco-sustainable strategic leadership style** will tally to the Government policy that would have different effects on technological change depending on the information and knowledge exchanged and shared between government and industry (Baba & Yarime, 1999).

Green direction casted by **eco-sustainable minded** top management is really helping in determining how the companies' aspirations have been achieved within the time frame given (Cavazottea *et al.*, 2012; Ghisetti & Rennings, 2014). From there, the dedicated departments are responsible to organize for it, list out the targets to accomplish, and develop a clear coherent strategy that will not jeopardize their current

bottom-line profits and operations. This way has been much more constructive compare to just having a bold statement like ‘we are going to be green organization by year X,’ but nobody in the companies are being knowledgeable about the intention to green. **This has been the issues highlighted by all the independent expert reviewers that the strategic leadership must be combined with the situational leadership in order for the companies to grow, profit and sustain in their businesses.**

The findings have showed that green innovation has becoming a trend that drives economic growth of Malaysian GLCs. This study also has confirmed the innovation theory of Joseph Schumpeter (Fagerberg *et al.*, 2006, p. 6) that innovation is the product of new combinations. The theory has stated five innovation combination patterns that suit perfectly with the green innovation implementation scenario. The combination patterns are the creation of a new product; the establishment of a new process of production; the expansion of another market; the getting hold of a new source of stock of raw materials; and the growth of a new organization of any industry (Suriyankietkaew & Avery, 2014).

5.1 Contribution of Study

The researchers have revealed that this conducted exploratory multiple case study research has granted significant contributions to new knowledge in green and eco-innovation as well as to new applications for organizations in sustaining their businesses in Malaysia. This part has revealed an overview of the principal contributions of this research to new knowledge and new applications.

5.1.1 Contribution to Body of Knowledge

On the basis of a literature review and in-depth interviews that this study has done, it has been found that academic research on top management leadership's attributes towards green innovation implementation is a new area in Malaysia. This exploratory research has been scarce study that addresses this gap in academic literature on eco-innovation.

Most of the researches are focusing on the specific technology that has green element and its outcomes. However, the researchers are exploring beyond the technology itself. They are more interested to determine the attributes of the top managers who have been imposed and implemented green in their products, processes and services despite of the costing effect because the green technology is still expensive. The top management can lead their companies to seize competitive advantage through strategic management of environmental challenges (Etsy and Winston, 2009). No doubt that a new situation can be arose by these GLCs where it would no longer be technology which limits the quantity of raw materials available to society, the 'new' limits would be set by nature's own carrying capacity (Ulhoi *et al.*, 1996). **Here is where this study has given a significant understanding the perception of top management in the green innovation implementation environment (Keskin *et al.*, 2013).** Although leaders have been established policies, programmes, budgets, and reward systems to guide and control the organizational members, but in the green innovation scenario, a leader with strong personal values for eco-sustainability might be able to construct proactive environmental practices as offering the risk protection

or value creation for the firm that providers of capital and boards of directors required (Branzei *et al.*, 2000). From this study too, the researchers know what the companies have seen in green innovation to their organizational sustainability as shown in Figure 5.1.

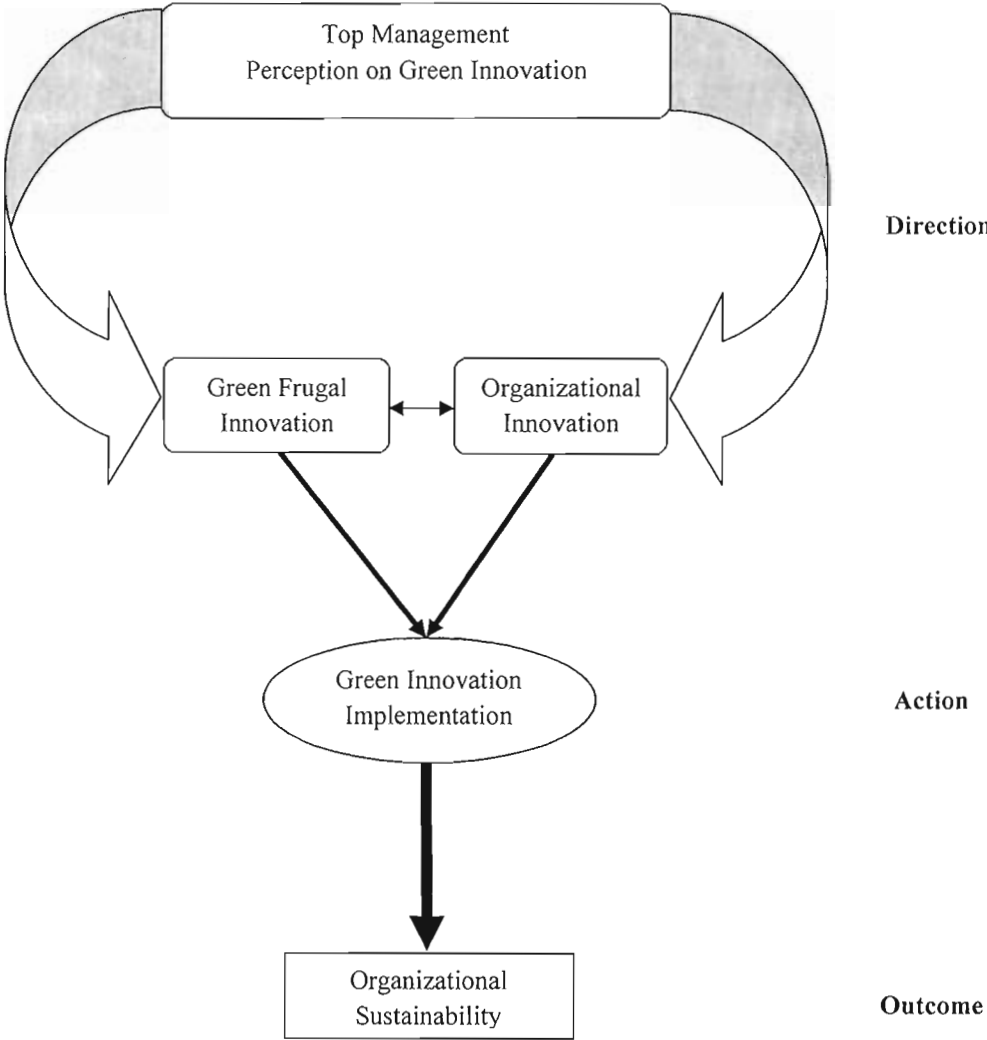


Figure 5.1:
Green Innovation Implementation – Top Management Perception toward Green Innovation is Important to Breed Action that Results the Outcome.

To answer the research question 1.3.1 on page 11, this study has discovered that the leadership style of the top management plays a big role in determining the level and type of innovation implementation in the companies. Their responsibilities now are not only getting the profits increase but to ensure the companies will sustain and grow in more demanding environmental changes with the notion of the triple bottom line that consider the economical, social and environmental into account (Ho & Choi, 2012).

When the top management have given direction to exercise innovation in the companies, they want green frugal innovation to be exercise because it has improved the products, process and workplaces by adopting and adapting simple innovation to save the environmental and reduce cost in energy, water and waste management. Processes have been optimised to reduce cost of energy, and products have been using raw material that can be recycled and reused. This is the way how the top management believe they can sustain their companies. Then, the middle managers will take the appropriate actions related to their departments and job scopes.

On top of that, this study has able to show that for the companies to implement green innovation and remain sustainable, they have to deal with their assets as being stressed by Tun M that are people, cultures, and financial capital; and also with the environment as being highlighted by the participants from the GLCs and MNCs. This study has simplified the top management in research question 1.3.1 into Figure 5.2 below.

Top Management in GLCs

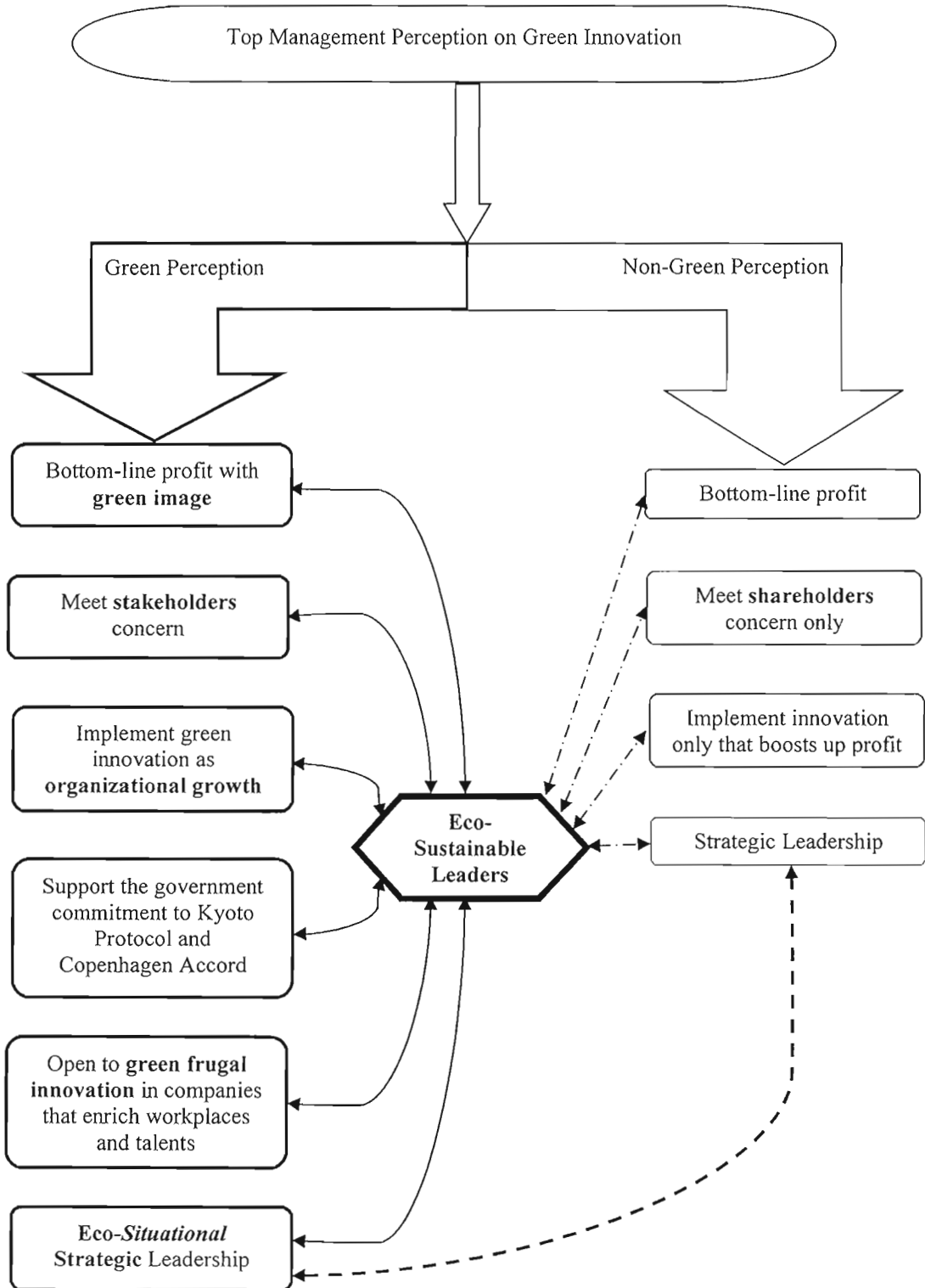


Figure 5.2:
Six Attributes of Eco-Sustainable Leaders – Top Management Leadership Attributes who Implement Green Innovation in GLCs

In the leadership structure of GLCs, the persons who have been chosen to lead always based on the political reasons because they have to carry the aspirations of the country. However, The BoD still must give their consent on any decision that the CEO or MD that lead the GLCs make and take. Then this leader has a top management team to help him or her to run the businesses.

This study has proposed **Eco-Sustainable Leaders** term to differentiate the green attributes leadership and non-green leadership that the researchers have been explored in this study (Dimitrios *et al.*, 2013). There are six attributes for green leadership and four attributes for non-green leadership as shown in Figure 5.2. The propose **Eco-Sustainable Leaders** term will **add up the limitation of eco-innovation definition by Ekins (2010)** that only holds a key role in environmental technologies where the innovation led to any technological transition that has being supported in response to change that has involved innovation system challenges, and greatly reduces both environmental impacts and the use of natural resources (Suriyankietkaew & Avery, 2014). It has found that with **Eco-Sustainable Leaders** in the top management team, the transition of environmental technologies has a bigger chance to be implemented (Avery & Bergsteiner, 2011; Peusa *et al.*, 2013; Strand, 2014).

As answering the research question 1.3.2 in page 12, this study has explained that eco-sustainable leaders cannot run from profit-making minded but now they are also strongly considering green image more in ensuring their products and services will have added advantage to those companies who have none (Ding *et al.*, 2014;

Stenmark & Mumford, 2011). As being supported by the third expert independent reviewer, the focus of the companies is not just for their shareholders, instead it has reached out to their stakeholders such the government, community, environment, and vicinity area that might get affected by their operations. They have committed to the Kyoto Protocol and Copenhagen Accord (Salahudin *et al.*, 2013) to preserve the environment from global warming, carbon footprint and fail to manage the waste properly. Green innovation implementation may be costly at the beginning, but it can ensure the organizational growth and sustainability through a proper green planning (Alhadid & As'ad, 2014; Li, 2014). The investment in green innovation will not take long to be the trend as now the government has enforced it in every government agencies. The green frugal innovation at workplaces can improve the jobs and processes to be more efficient and less use of paper and energy (Ghisetti & Rennings, 2014; Silva *et al.*, 2013).

This is very much agreed with Yang, Lin, Chan, & Sheu finding (2010) that companies are progressively more turn out to be responsible for environmental and social problems triggered by their suppliers. They see the best companies have position sustainability as an opportunity to contribute to social goals, and a dominant foundation of competitive advantage and a subject of corporate survival.

The leadership style of the top management towards green innovation implementation also has been advancing where **Situational Leadership** (Mutingi *et al.*, 2014; Peusa *et al.*, 2013; Stenmark & Mumford, 2011) and **Strategic Leadership** (Raza & Murad,

2014; Strand, 2014) **are combined into Eco-Situational Strategic Leadership** (Cavazottea *et al.*, 2012; Ghisetti & Rennings, 2014). Any strategic leadership will insert **eco-situational elements** in any discussion, decision and action taken to prevent any destruction to the environment that could tarnish their corporate image. This is tagged along with Ho and Choi (2012) argument that mainstream companies have adopted sustainable practices to strengthen their brand names or differentiate their products. As confirming our findings, their finding has also found that companies' decision to 'go green' can branch out from many rationales that can be succinctly categorized into four distinct groups: social well-being, environmental stewardship, economic prosperity and corporate governance.

5.1.2 Contribution to New Applications

This study has validated the importance of the attributes of the top leaders when dealing with green innovation implementation in the organization. This is a useful consideration to be applied in the leadership theory and organizational theory when choosing the people to lead in the organizations that their businesses have directly related to the environment.

In Figure 5.3, it has revealed and confirmed by the second and third independent reviewers the significant of **Green Pinnacle** that the researcher has suggested when implementing green innovation in the companies. Any challenges in investing and implementing green innovation towards organizational sustainability can be reduced and properly dealt with when the top management has a proper green program and schedule in their strategic planning.

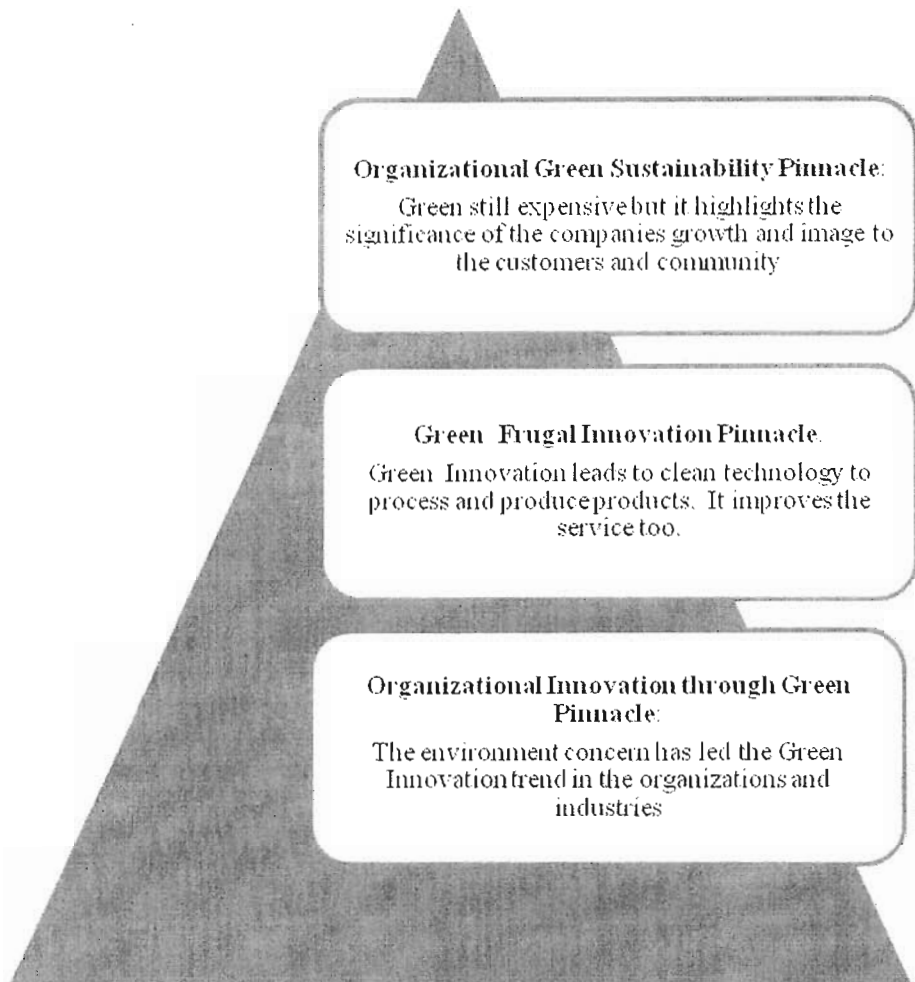


Figure 5.3:
Green Pinnacle Shows Significance of Green Innovation to Organizational Sustainability

Table 5.1:
Definition of Green Pinnacle

Organizational Innovation through Green Pinnacle:	This is the foundation of the pinnacle. Companies need to grow and sustain. With the environmental concern as top priority of the government requirement, this has led the Green Innovation trend in the organizations and industries. The top management must have good perception and understanding that green is a part of their strategic to profit (Chang & Chen, 2013; Insight, 2013; Li, 2014; Mutingi <i>et al.</i> , 2014; Salahudin <i>et al.</i> , 2013).
Green Frugal Innovation Pinnacle:	This is the middle part of the pinnacle. Green Innovation leads to clean technology to process and produce products. It improves the service and workplaces too. Top management must instill green awareness program before they implement green in their companies. Employees at all level must feel the benefit to them and this make the green implementation succeed (Kiron <i>et al.</i> , 2012; Lin <i>et al.</i> , 2014; Silva <i>et al.</i> , 2013).
Organizational Green Sustainability Pinnacle:	This is the peak of the pinnacle. Green still expensive but it highlights the significance of the companies' growth and image to the customers and community. Being eco-sustainable leaders will create more jobs and projects for the companies in future (Carrillo-Hermosillaa <i>et al.</i> , 2010; Ghisetti & Rennings, 2014; Keskin <i>et al.</i> , 2013; Kiron <i>et al.</i> , 2013; Lin <i>et al.</i> , 2014).

5.2 Limitations of Study

The scope of the thesis is limited to GLCs in Malaysia that have been involved in the industries of manufacturing, oil and gas, services, infrastructure and construction, transportation and logistics, property and utilities. Therefore, the other pertinent green innovation implementation in other industries like healthcare and financial institution has not looked into. The main rationale is that the green innovation is mainly address the importance of environmental and leadership commitment towards eco-innovation strategies, whereas healthcare and financial institution are not openly brought up their businesses relation to green innovation implementation (Ghisetti & Rennings, 2014). As a result, for an exploratory study it would be most logic to focus on green innovation implementation in the GLCs that seriously related to environment (Li, 2014; Lin *et al.*, 2014).

This study also has facing the limitation of time to gather the data due to the hectic schedule of the participants. The process of asking permission for individual interviews and invitation for focus group discussion are very challenging because it has to go through the CEO or Managing Director. The researcher is so thankful to the Personal Assistant of the CEO, Managing Director and The Statesman in making a space for her to conduct the interviews.

On the other hand, the main weakness of this study is due to the location because most of the companies are in the Klang Valley. Therefore, the researcher has limited resources in terms of time, and money to travel and meet the busy participants for

interviews since they are 700km away in the northern part of Malaysia. The other distraction is many companies are not ready to be a part of the research participants because their green innovation implementation is more to campaign exercise for certain events and no dedicated person or department who handle green innovation in their companies.

On the methodological limitations, Creswell (2007, p. 14) has noticed three drawbacks of the case study method. Firstly, it owes to lack of rigour because systematic procedures are not adhered and all evidences are not informed fairly. Secondly, it has bestowed slight root for scientific generalization. Finally, the study is time-consuming, and the outcome is huge and dense in the form of inquiry that does not depend exclusively on long field work and participant-observation but instead is depended on the subject matter of the study.

To make the study rigour, the researcher has created a database using NVivo that contain all the transcribed data of the interviews. With validity, reliability and verification processes, she has informed all the significant inductive themes and interpretations in the report that answer all the research questions.

The key concern of a multiple-case study is the conceptual part (Miles & Huberman, 1994, p.31). This is done by having some notions of how complex programmes and practices are implemented in GLCs, and the researcher has wanted to examine them to understand how they differ in diverse circumstance. Sampling for variability has provided this study a test of the process of change (Chang & Chen, 2013).

GLCs companies are close private setting with restricting access for security reasons governed by laws and regulations (Lin *et al.*, 2014). Although the researcher knows the available channels for obtaining permission, she still needs to follow the compulsory procedures for gaining the access that would add to the time needed for her to accomplish the study. Even though this study has gained the access to the setting, the researcher still has the restriction to observe the companies operation (Bailey, 2007, p. 37). The researcher is not familiar with all the companies and it makes the cultural and social events in these new settings are uncomplicated to comprehend compare if she has studied in familiar settings (Neuman, 1991; Raza & Murad, 2014). However, it will be an advantage if the researcher is familiar and already has rapport with participants, understand the fine distinctions of language and behavioural anticipations, and hold analytic insights into the operational of the GLCs (Bailey, 2007, p. 38).

Therefore, to make the study worth, the researcher has decided the bounded system to study is GLCs, identify few possible candidates for this selection and see the points of deciding multicases to illustrate (Creswell, 2007, p. 75). A great number of cases have encouraged the researcher to the idea of generalizability which a term that hold modest sense for most qualitative researchers (Avery & Bergsteiner, 2011a; Glesne & Peshkin, 1992).

The inductive reasoning from this research finding to a population or to a scope belonging to a theory has made up of **inductive generalization** through **theoretical generalization**, and **variation-based generalization** (Bradbury-Jones, Taylor, & Herber, 2014; Henwood, 2014). In theoretical generalization, the researcher has theorized on the foundation of samples, and drafted findings and assume with novel sample cases. The derivation result from the inductive themes has become the growing theory by refining, expanding, and correcting process repeated several times. The final formulated theory should then become the medium for generalization to other cases that yet to be studied, so long as they fit in the scope of the theory. For variation-based generalization, the sampling is in purposive descriptive form that is non-theory directed.

The researcher agrees that not every research finding would be called ‘theory’ as some are better referred to as ‘thematic survey’ or ‘conceptual description’ (Henwood, 2014). At some structure of generalization of the research results, the researcher has made an effort to concentrate on unfolding the discrepancies in which leadership and green innovation implementation occur. This study has looked purposely for cases to associate to the previously documented descriptions. It also has add to the sample the new distinguish cases from the participants engaged until no new information has turned up (Cooper *et al.*, 2014). At this moment, saturation has been achieved pertaining to the description of the variation (Bradbury-Jones *et al.*, 2014). It is believed that the variation in the population has been included by the variation in the samples.

On the other hand, generalization of the results to other settings cannot essentially confirm at a less abstract point. Whether in the distinct local situations or in some sites that discloses some of the study sample's characteristics, the specific findings might change (Bradbury-Jones *et al.*, 2014; C. Cooper *et al.*, 2014). Nevertheless, the study findings could facilitate in identifying the parameters for a follow-up survey or a series of new case studies centred on this subpopulation (Miles & Huberman, 1994, p.31). Through more explored core processes, incidents, interactions, and outcomes in leadership and innovation studies, the general findings would be reinforced by propel of details that will allot more profile and body to the established conceptualization of this study (Henwood, 2014).

The long fieldwork really seized majority of this study's research time. The researchers have started with FGD before they go for individuals interviews. Sending the invitation for the FGD and waiting for the answers from the top managers until the day they have conducted the FGD are very challenging task in terms of time and budget constraint. The individual interviews are quite less stressing because they are done at the participants premises at their own convenient time (Burkett & Morris, 2015). The fieldwork does vary vastly from project to project, but underestimation of the need of time and funding essentially can jeopardize the study results (Bailey, 2007, p. 36).

5.3 Recommendation for Further Research

For the further research, this study would like to recommend that:

- (i) the definition of green innovation is very subjective and unique to each and individual company so a solid common perception of green innovation with other sectors in the GLCs should be identified for easy referring and understanding (Ghisetti & Rennings, 2014; Insight, 2013; Triguero *et al.*, 2013),
- (ii) the replication of the study on green innovation to other non-GLCs such as Public Sectors, SMEs and MNCs that have been operated in Malaysia could make this area more understandable and accepted as applicable for implementation that suits the companies' operational and strategic plans (Dimitrios *et al.*, 2013 ; Klewitz & Hansen, 2014 ; Suriyankietkaew & Avery, 2014),
- (iii) the participants of the research can be expanded not only for the top managers but also to the middle managers and front managers who firm the green leaders' attributes determination completely (Bradbury-Jones *et al.*, 2014; Cooper *et al.*, 2014; Henwood, 2014),
- (iv) the case study research on green innovation is conducted with incorporated a lot of waste management issues too at the administrative and technical sides of the companies because green innovation plays an important role in saving the environment (Avery & Bergsteiner, 2011; Mutingi *et al.*, 2014),

(v) the assessment methods of traceability the impact of green innovation implementation at the bottom line of companies in order to see the betterment and outcome of the green implementation to the companies (Alhadid & As'ad, 2014; Keskin *et al.*, 2013),

(vi) the study can be conducted with other research methodology on the determining the green leaders' attributes and application of green innovation in GLCs and non-GLCs in Malaysia. This will generalize and confirm this study findings are applicable and useful to the situational leadership theory and organizational sustainability theory (Cooper *et al.*, 2014; Hallstedt *et al.*, 2013).

REFERENCES

- Alhadid, A. Y., & As'ad, H. A-R. (2014). The Impact of Green Innovation on Organizational Performance, Environmental Management Behavior as a Moderate Variable: An Analytical Study on Nuqul Group in Jordan. *International Journal of Business and Management* 9(7), 51-58.
- Allen, T., Katz, R., Grady, J. J., & Slavin, N. (1988). Project team aging and performance: The roles of project and functional managers. *R&D Management*, 18, 295–308.
- Altman, M. (2001). When green isn't mean: economic theory and the heuristics of the impact of environmental regulations on competitiveness and opportunity cost. *Ecological Economics*, 36(1), 31-44.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior*, 10, 123–167.
- Ancona, D. G., & Caldwell, D. F. (1988). Beyond task and maintenance: Defining external functions in groups. *Group and Organization Studies*, 13, 468–494.
- Andrews, F. M., & Farris, G. F. (1967). Supervisory practices and innovation in scientific teams. *Personnel Psychology*, 20, 497–515.
- Antonakis, J., & House, R. J. (2014). Instrumental leadership: Measurement and extension of transformational-transactional leadership theory. *The Leadership Quarterly*, 25(4), 746-771.

- Avery, G. C., & Bergsteiner, H. (2011). How BMW successfully practices sustainable leadership principles. *Strategy & Leadership*, 39(6), 11-18.
- Baba, Y., & Yarime, M. (1999, February 3). *Identifying the Sources of Green Innovation: Markets or Regulations?* Paper presented at the EcoDesign '99: First International Symposium On Environmentally Conscious Design and Inverse Manufacturing, 1999. Proceedings. , Tokyo.
- Bailey, C. A. (2007). *A guide to qualitative field research* (2nd ed.). Thousand Oaks: Pine Forge Press.
- Bansal, P., & Roth, K. (2000). Why companies go green: a model of ecological responsiveness. *The Academy of Management Journal*, 43(4), 717-736.
- Barbour, R. S. (2008). *Introducing Qualitative Research*. London: Sage.
- Barczak, G., & Wilemon, D. (1989). Leadership differences in new product development teams. *Journal of Product Innovation Management*, 6, 259-267.
- Barnowe, J. T. (1975). Leadership and performance outcomes in research organizations: The supervisor of scientists as a source of assistance. *Organizational Behavior and Human Performance*, 14, 264-280.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B. M. (1997). Does the transactional-transformational paradigm transcend organizational and ational boundaries? *American Psychologist*, 22, 130-142.

- Bass, B. M., & Avolio, B. J. (1990). Developing transformational leadership: 1992 and beyond. *Journal of European Industrial Training*, 14, 21–27.
- Berkhout, A. J., Hartmann, D., Duin, P. v. d., & Ortt, R. (2006). Innovating the innovation process. *International Journal of Technology Management*, 34(3-4), 390-404.
- Bocken, N. M. P., Farracho, M., Bosworth, R., & Kemp, R. (2014). The front-end of eco-innovation for ecoinnovative small and medium sized companies. *Journal of Engineering and Technology Management*, 31, 43-57.
- Bogdan, R., & Taylor, S. (1975). *Introduction to qualitative research methods*. New York: John Wiley.
- Bradbury-Jones, C., Taylor, J., & Herber, O. (2014). How theory is used and articulated in qualitative research: Development of a new typology. *Social Science & Medicine*, 120, 135-141.
- Branzei, O., Vertinsky, I., & Zietsma, C. (2000). From green-blindness to the pursuit of eco-sustainability: an empirical investigation of leader cognitions and corporate environmental strategy choices. In S. Havlovic (Ed.), *Academy of Management Best Paper Proceedings* (pp. 1-6). Toronto, ON: Academy of Management.
- Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology? *The British Journal of Sociology*, 35(1), 75-92.
- Bryman, A., & Bell, E. (2007). *Business research methods* (2nd ed.). New York: Oxford University Press.

- Burkett, K. W., & Morris, E. J. (2015). Enabling Trust in Qualitative Research With Culturally Diverse Participants. *Journal of Pediatric Health Care*, 29(1), 108-112.
- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Carrillo-Hermosillaa, J., Ríob, P. d., & Könnölac, T. (2010). Diversity of eco-innovations: Reflections from selected case studies. *Journal of Cleaner Production*, 18(10-11), 1073-1083.
- Cavazottea, F., Morenob, V., & Hickmann, M. (2012). Effects of leader intelligence, personality and emotional intelligence on transformational leadership and managerial performance. *The Leadership Quarterly* 23(3), 443–455.
- Chang, C.-H., & Chen, Y.-S. (2013). Green organizational identity and green innovation. *Management Decision*, 51(5), 1056 - 1070.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Los Angeles: SAGE Publications.
- Chen, Y.-S., Lai, S.-B., & Wen, C.-T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics*, 67(4), 331-339.
- Cheng, C. C. J., Yang, C.-I., & Sheu, C. (2014). The link between eco-innovation and business performance: a Taiwanese industry context. *Journal of Cleaner Production*, 64, 81-90.

- Cooper, C., O'Cathain, A., Hind, D., Adamson, J., Lawton, J., & Baird, W. (2014). Conducting qualitative research within Clinical Trials Units: Avoiding potential pitfalls *Contemporary Clinical Trials*, 38(2), 338-343.
- Cooper, R. G., & Kleinschmidt, E. J. (1987). New products: What separates winners from losers? *Journal of Product Innovation Management*, 4, 169–184.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: choosing among five approaches* (2nd ed.). Thousand Oaks: SAGE Publications.
- Daft, R. L. (1978). A dual-core model of organizational innovation. *Academy of Management Journal*, 21(2), 193-210.
- Damanpour, F., & Gopalakrishnan, S. (2001). The dynamics of the adoption of product and process innovations in organizations. *Journal of Management Studies*, 38(1), 45-65.
- Dansereau, F., Cashman, J., & Graen, G. (1973). Instrumentality theory and equity theory as complementary approaches in predicting the relationship of leadership and turnover among managers *Organizational Behavior and Human Performance*, 10, 184–200.
- Dansereau, F., Graen, G., & Haga, W. J. (1975). A vertical dyad linkage approach to leadership within formal organizations: A longitudinal investigation of the role making process. *Organizational Behavior and Human Performance*, 13, 46–78.

- Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: the discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Derksen, A. A. (1986). The justificational priority of science over the Philosophy of Science: Laudan's science and hypothesis. *Chicago Journals (Philosophy of Science Association)*, 53(2), 259-264.
- Dimitrios, N. K., P. Sakasa, D., & D. S. Vlachosa. (2013). *Analysis of strategic leadership models in information technology*. Paper presented at the 2nd International Conference on Integrated Information, Greece.
- Ding, F., Li, D., & George, J. F. (2014). Investigating the effects of IS strategic leadership on organizational benefits from the perspective of CIO strategic roles. *Information & Management* 51, 865–879.
- Dubey, R., Gunasekaran, A., & Ali, S. S. (2015). Exploring the relationship between leadership, operational practices, institutional pressures and environmental performance: A framework for green supply chain. *International Journal of Production Economics*, 160, 120-132.
- Duchon, D., Green, S. G., & Taber, T. D. (1986). Vertical dyad linkage exchange: A longitudinal assessment of antecedents, measures, and consequences. *Journal of Applied Psychology*, 71, 56–60.
- Eiadat, Y., Kelly, A., Roche, F., & Eyadat, H. (2008). Green and competitive? An empirical test of the mediating role of environmental innovation strategy. *Journal of World Business*, 43(2), 131-145.

- Elkins, T., & Keller, R. T. (2003). Leadership in research and development organizations: A literature review and conceptual framework. *The Leadership Quarterly, 14*(4-5), 587-606.
- Emblemsvag, J. (2003). The green invisible hand. *Foresight, 5*(1), 11-19.
- Engelen, A., Schmidt, S., Strenger., & Brettel, M. (2014). Top Management's Transformational Leader Behaviors and Innovation Orientation: A Cross-Cultural Perspective in Eight Countries. *Journal of International Management, 20*(2), 124-136.
- Etsy, D. C., & Winston, A. S. (2009). *Green to Gold: how smart companies use environmental strategy to innovate, create value, and build competitive advantage*. New Jersey: John Wiley and Son, Inc.
- Fagerberg, J., Mowery, D. C., & Nelson, R. R. (2006). *The Oxford Handbook of Innovation*. USA: Oxford University Press.
- Farris, G. F. (1988). Technical leadership: much discussed but little understood. *Research Technology Management, 31*(2), 12-16.
- Flick, U. (2002). Qualitative research: state of the art. *Social Science Information, 41*(1), 5-24.
- Gabriel, C. (2008). Why it's not naive to be green. *Business Information Review, 25*(4), 230-237.
- Gerstner, C. R., & Day, D. V. (1997). Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology, 82*, 827-844.

- Ghisetti, C., & Rennings, K. (2014). Environmental innovations and profitability: how does it pay to be green? An empirical analysis on the German innovation survey. *Journal of Cleaner Production* 75, 106-117.
- Gibbs, G. R. (2007). Analyzing qualitative data. In U. Flick (Ed.), *The SAGE qualitative research kit*. London: SAGE Publication.
- Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction*. White Plains, NY: Longman.
- Graen, G. (1976). Role-making processes within complex organizations. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1201–1245). Chicago: Rand McNally.
- Graen, G., & Cashman, J. (1975). A role-making model of leadership in formal organizations: A development approach. In J. G. Hunt & L. L. Larson (Eds.), *Leadership frontiers* (pp. 143–165). Kent, OH: Kent State University.
- Graen, G., & Scandura, T. (1987). Toward a psychology of dyadic organizing. In B. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 9, pp. 175–208). Greenwich, CT: JAI Press.
- Graen, G., Scandura, T., & Graen, M. R. (1986). A field experimental test of the moderating effects of growth need strength on productivity. *Journal of Applied Psychology*, 71, 484–491.
- Graen, G., & Uhl-Bien, M. (1991). The transformation of work group professionals into self-managing and partially self-designing contributors: Toward a theory of leadership-making. *Journal of Management Systems*, 3, 33–48.

- Graen, G., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader–member–exchange (LMX) theory of leadership over 25 years—Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 6, 219–247.
- Green, K., Morton, B., & New, S. (2000). Greening organizations : purchasing, consumption, and innovation. *Organization & Environment*, 13(2), 206-225.
- Green, S. G. (1995). Top management support of R&D projects: A strategic leadership perspective. *IEEE Transactions on Engineering Management*, 42, 223–232.
- Griffin, R. W., & Moorhead, G. (2013). *Organizational Behavior: Managing People and Organizations* (11th ed.). Mason, Ohio, USA: Cengage Learning.
- Hallstedt, S. I., Thompson, A. W., & Lindahl, P. (2013). Key elements for implementing a strategic sustainability perspective in the product innovation process. *Journal of Cleaner Production*, 51, 277–288.
- Hambrick, D. (1989). Guest editor's introduction: Putting top managers back in the strategy picture. *Strategic Management Journal*, 10, 5–15.
- Henry, J. R., & Vesilind, P. A. (2005). Ethical motivations for green business and engineering. *Clean Technologies and Environmental Policy*, 7(4), 252-258.
- Henwood, K. (2014). Qualitative Research. *Encyclopedia of Critical Psychology*, 1611-1614.
- Heracleous, L. (2007). Hermeneutics, *International Encyclopedia of Organization Studies*.

- Herriott, R. E., & Firestone, W. A. (1983). Multisite qualitative policy research: Optimizing description and generalizability. *Educational Research, 12*, 14-19.
- Hitt, M. A., Hoskisson, R. E., Johnson, R. A., & Moesel, D. D. (1996). The market for corporate control and firm innovation. *Academy of Management Journal, 39*, 1084–1119.
- Ho, H. P.-Y., & Choi, T.-M. (2012). A Five-R analysis for sustainable fashion supply chain management in Hong Kong: a case analysis. *Journal of Fashion Marketing and Management, 16*(2), 1361-2026.
- House, R. J. (1971). A path-goal theory of leader effectiveness. *Administrative Science Quarterly, 16*, 321–338.
- House, R. J., & Aditya, R. N. (1997). The social scientific study of leadership: Quo vadis. *Journal of Management, 23*, 409–473.
- House, R. J., & Dessler, G. (1974). The path-goal theory of leadership: Some post hoc and a priori tests. In J. G. Hunt & L. L. Larson (Eds.), *Contingency approaches to leadership* (pp. 29–55). Carbondale Southern Illinois Press.
- Howell, J. M., & Higgins, C. A. (1990a). Champions of technological innovation. *Administrative Science Quarterly, 35*, 317–341.
- Howell, J. M., & Higgins, C. A. (1990b). Leadership behaviors, influence tactics, and career experiences of technological innovation. *Leadership Quarterly, 1*, 249–264.

- Ibrahim, S. G., & Uke, I. I. (2013). From Kyoto Protocol to Copenhagen: A theoretical approach to international politics of climate change. *Science and African Journal of Political Science and International Relations*, 7(3), 142-153.
- Insight, E. (2013). AU Optronics Corporation leads in green innovation. *Strategic Direction* 29 (7), 21-24.
- International, Q. (2011). Retrieved 7 July, 2011, from http://www.qsrinternational.com/products_previous-products_nvivo8.aspx
- Jabri, M. (1991). The development of conceptually independent subscales in the measurement of modes of problem solving. *Educational and Psychological Measurement* 52, 975–983.
- Jalal, K. F., & Rogers, P. P. (2002). Measuring environmental performance in Asia. *Ecological Indicators*, 2(1-2), 39–59.
- Kadushin, C., Hecht, S., Sasson, T., & Saxe, L. (2008). Triangulation and mixed methods designs: practicing what we preach in the evaluation of an Israel experience educational program. *Field Methods*, 20(1), 46-65.
- Karim, F. N. (2010, April 27). Tax breaks for green designs. *New Straits Times*, p. 4.
- Katz, R., & Tushman, M. (1981). An investigation into the managerial roles and career paths of gatekeepers and project supervisor in a major R&D facility. *R&D Management*, 11, 103–110.
- Keller, R. T. (1989). A test of the path-goal theory of leadership with need for clarity as a moderator in research and development organizations. *Journal of Applied*

- Psychology*, 74, 208–212.
- Keller, R. T. (1992). Transformational leadership and the performance of research and development project groups. *Journal of Management*, 18, 489–501.
- Keller, R. T. (1995). Transformational leaders make a difference. *Research Technology Management*, 38, 41–44.
- Keskin, D., Diehl, J. C., & Molenaar, N. (2013). Innovation process of new ventures driven by sustainability. *Journal of Cleaner Production*, 45, 50–60.
- Kim, Y., Min, B., & Cha, J. (1999). The roles of R&D team leaders in Korea: A contingent approach. *R&D Management*, 29, 153–165.
- Kirchmer, M., Franz, P., & Rosing, M. v. (2015). The Chief Process Officer: An Emerging Top Leadership Role. *The Business Process Management Handbook*, 343-348.
- Kiron, D., Kruschwitz, N., Haanaes, K., Reeves, M., & Goh, E. (2013). The benefits of Sustainability-Driven Innovation. *MIT Sloan Management Review*, 54(2), 69-73.
- Kiron, D., Kruschwitz, N., Haanaes, K., & Velken, I. V. S. (2012). Sustainability Nears a Tipping Point. *MIT Sloan Management Review*, 53(2), 69-74.
- Kirton, M. J. (1976). Adaptors and innovators: A description and measure. *Journal of Applied Psychology*, 61, 622–629.
- Klewitz, J., & Hansen, E. G. (2014). Sustainability-oriented innovation of SMEs: a systematic review. *Journal of Cleaner Production*, 65, 57-75.

- Krell, T. C. (2000). Organizational longevity and technological change. *Journal of Organizational Change Management*, 13(1), 8-13.
- Krueger, R. A. (1994). *Focus groups: a practical guide for applied research*. London: SAGE Publications.
- Krugman, P. (2010). Building a Green Economy, *The New York Times* (Magazine ed.). New York.
- Kuzel, A. J. (1992). Sampling in qualitative inquiry. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (Vol. Research Method for Primary Case, Vol 3, pp. 31-44). Newbury Park, CA: Sage.
- Lau, Y. W. (2013). Government-linked companies' (GLCs) performance – a structuration perspective: Malaysian evidence. *International Journal of Critical Accounting*, 5(2), 213-227.
- Lee, K.-H. (2009). Why and how to adopt green management into business organizations? The case study of Korean SMEs in manufacturing industry. *Management Decision*, 47(7), 1101-1121.
- Li, Y. (2014). Environmental innovation practices and performance: moderating effect of resource commitment. *Journal of Cleaner Production* 66, 450-458.
- Liden, R. C., & Graen, G. (1980). Generalizability of the vertical dyad linkage model of leadership. *Academy of Management Journal*, 23, 451–465.
- Lin, H., Zeng, S. X., Ma, H. Y., Qi, G. Y., & Tam, V. W. Y. (2014). Can political capital drive corporate green innovation? Lessons from China. *Journal of Cleaner Production*, 64, 63-72.

- Lin, R.-J., Chen, R.-H., & Huang, F.-H. (2014). Green innovation in the automobile industry. *Industrial Management & Data Systems*, 114(6), 886-903.
- Lincoln, Y. S., & Guba, E. G. (2000). The Only Generalization is: There Is No Generalization In R. Gomm, M. Hammersley & P. Foster (Eds.), *Case Study Method: Key Issues, Key Texts*: Sage.
- Litosseliti, L. (2003). *Using focus groups in research*. London: Continuum.
- Lowe, K. B., Kroeck, K., & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. *Leadership Quarterly*, 7, 385–425.
- Markham, S. K., Green, S. G., & Basu, G. (1991). Champions and antagonists: Relationships with R&D project characteristics and management *Journal of Engineering and Technology Management*, 8, 217–242.
- Menke, M., Xu, Q., & Gu, L. (2007). An analysis of the university, flexibility, and agility of total innovation management: a case study of Hewlett-Packard. *The Journal of Technology Transfer*, 32, 49-62.
- Miles, M. B., & Huberman, A. M. (1994). *An Expanded Sourcebook Qualitative Data Analysis* (2nd. ed.). Thousand Oaks: SAGE Publications.
- Miles, R. E., Snow, C. C., & Miles, G. (2007). The ideology of innovation. *Strategic Organization*, 5(4), 423-435.
- Mingers, J. (2003). A classification of the philosophical assumptions of management science methods. *The Journal of the Operational Research Society*, 54(6), 559-570.

- Morse, J. M. (Ed.). (1989). *Qualitative nursing research: A contemporary dialogu*. Newbury Park, CA: Sage.
- Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, *103*, 27–43.
- Mutingi, M., Mapfaira, H., & Monageng, R. (2014). Developing performance management systems for the green supply chain. *Journal of Remanufacturing*, *4*(6), 1-20.
- Naranjo-Gil, D. (2009). The influence of environmental and organizational factors on innovation adoptions: consequences for performance in public sector organizations. *Technovation*, *29*(12), 810-818.
- Neuman, W. L. (1991). *Social research methods: Qualitative and quantitative approaches*. Boston: Allyn & Bacon.
- Nichols, A. L., & Cottrell, C. A. (2014). What do people desire in their leaders? The role of leadership level on trait desirability. *The Leadership Quarterly*, *25*(4), 711-729.
- Ockwell, D., Whitmarsh, L., & O'Neill, S. (2009). Reorienting climate change communication for effective mitigation : forcing people to be green or fostering grass-roots engagement? *Science Communication*, *30*(3), 305-327.
- Patton, M. (1990). *Qualitative evaluation and research method* (2nd ed.). Newbery Park, CA: Sage.
- Pesqueux, Y. (2007). Epistemology, *International Encyclopedia of Organization Studies*.

- Peusa, C., Brauna, S., & Frey, D. (2013). Situation-based measurement of the full range of leadership model — Development and validation of a situational judgment test. *The Leadership Quarterly*, 24(5), 777-795.
- Porter, M. E., & Linde, C. v. d. (1995). Toward a New Conception of the Environment-Competitiveness Relationship. *The Journal of Economic Perspectives*, 9(4), 97-118.
- Raza, A., & Murad, H. S. (2014). Learning New Management Viewpoints: Recontextualizing Strategic Leadership in Global and Regional Context. *Business Review*, 9(1), 115-121.
- Roberts, E. B., & Fusfield, A. R. (1981). Staffing the innovative technology-based organization. *Sloan Management Review*, 22, 19–34.
- Rogers, E. M. (2003). *Diffusion of innovations*. Free Press, New York.
- Roy, J., & Pal, S. (2009). Lifestyles and climate change: link awaiting activation. *Current Opinion in Environmental Sustainability*, 1(2), 192-200.
- Salahudin, S. N., Abdullah, M. M., & Newaz, N. A. (2013). Emission: Sources, Policies and Development in Malaysia. *International Journal of Education and Research* 1(7), 1-12.
- Schaltegger, S., & Synnestvedt, T. (2002). The link between 'green' and economic success: environmental management as the crucial trigger between environmental and economic performance. *Journal of Environmental Management*, 65(4), 339-346.
- Schriesheim, C. A., Castro, S. L., & Cogliser, C. G. (1999). Leader-member

- exchange (LMX) research: A comprehensive review of theory, measurement and data-analytic practices. *Leadership Quarterly*, *10*, 63–113.
- Schriesheim, J. F., & Schriesheim, C. A. (1980). A test of the path-goal theory of leadership and some directions for future research. . *Personnel Psychology*, *33*, 349–370.
- Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, *37*, 580–607.
- Scott, S. G., & Bruce, R. A. (1998). Following the leader in R&D: The joint effect of subordinate problem-solving style and leader–member relations on innovative behavior. *IEEE Transactions on Engineering Management*, *45*, 3–10.
- Seuring, S., & Muller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, *16*(15), 1699–1710.
- Shim, D., & Lee, M. (2001). Upward influence styles of R&D project leaders. *IEEE Transactions on Engineering Management*, *48*, 394–413.

- Silva, L. C. S., Kovaleski, J. L., Gaia, S., Back, L., Spak, M. D. S., & Moretti, I. C. (2013). World scenario of green patents: Perspectives and strategies for the development of eco-innovations. *African Journal of Business Management*, 7(6), 472-479.
- Sorensen, F., Mattsson, J., & Sundbo, J. (2010). Experimental methods in innovation research. *Research Policy*, 39(3), 313–322.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stake, R. E. (2000). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Stead, J. G., & Stead, W. E. (2013). *Sustainable Strategic Management* (2nd ed.). Sheffield, UK: Greenleaf Publishing Limited.
- Stenmark, C. K., & Mumford, M. D. (2011). Situational impacts on leader ethical decision-making. *The Leadership Quarterly*, 22(5), 942–955.
- Stinson, J. E., & Johnson, T. W. (1975). The path-goal theory of leadership: A partial test and suggested refinement. *Academy of Management Journal*, 18, 242–252.
- Strand, R. (2014). Strategic Leadership of Corporate Sustainability. *Journal Business Ethics*, 123, 687–706.
- Suriyankietkaew, S., & Avery, G. C. (2014). Employee satisfaction and sustainable leadership practices in Thai SMEs *Journal of Global Responsibility*, 5(1), 160-173.

- Tabor, J. H. (2007). Leadership, culture, and organizational innovation: the case of commerce bank, *ProQuest* (pp. 243): School of Professional Studies, Gonzaga University, USA.
- Thurmond, V. A. (2001). The Point of Triangulation. *Journal of Nursing Scholarship*, 33(3), 253–258.
- Tierney, P., Farmer, S. M., & Graen, G. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52, 591–620.
- Todtling, F., Lehner, P., & Kaufmann, A. (2009). Do different types of innovation rely on specific kinds of knowledge interactions? *Technovation*, 29(1), 59-71.
- Triguero, A., Moreno-Mondéjar, L., & Davia, M. A. (2013). Drivers of different types of eco-innovation in European SMEs. *Ecological Economics* 92, 25–33.
- Trott, P. (2001). The role of market research in the development of discontinuous new products. *European Journal of Innovation Management*, 4(3), 117 - 126.
- Ulhoi, J. P., Madsen, H., & Hildebrandt, S. (1996). Green new world: a corporate environmental business perspective *Scandinavian Journal of Management*, 12(3), 243-254.
- UNFCCC. (2009). *The Kyoto Protocol* Retrieved May 5, 2010, from http://unfccc.int/kyoto_protocol/items/2830.php
- Vitale, D. C., Armenakis, A. A., & Field, H. S. (2008). Integrating qualitative and quantitative methods for organizational diagnosis : possible priming effects? *Journal of Mixed Methods Research*, 2(1), 87-105.

- Vroom, V. H., & Jago, A. G. (2007). The role of the situation in leadership. *American Psychologist*, 62, 17-24.
- Waldman, D., & Atwater, L. (1992). The nature of effective leadership and championing processes at different level in an R&D hierarchy. *Journal of High Technology Management Research*, 5 233–245.
- Waldman, D. A., & Bass, B. M. (1991). Transformational leadership at different phases of the innovation process. *Journal of High Technology Management Research*, 2 169–180.
- Wray, N., Markovic, M., & Manderson, L. (2007). "Research saturation": the impact of data triangulation and intensive-research practices on the researcher and qualitative research process. *Qualitative Health Research*, 17(10), 1392-1402.
- Xu, E., & Zhang, H. (2008). The impact of state shares on corporate innovation strategy and performance in China. *Asia Pacific Journal of Management*, 25, 473-487.
- Yauch, C. A., & Steudel, H. J. (2003). Complementary use of qualitative and quantitative cultural assessment methods. *Organizational Research Methods*, 6(4), 465-481.
- Yin, R. K. (2009). *Case study research: design and methods* (5th ed. Vol. 5). Thousand Oaks: SAGE Publications.
- Yu, C.-S., & Tao, Y.-H. (2009). Understanding business-level innovation technology adoption. *Technovation*, 29(2), 92-109.

Zhu, Q., Sarkis, J., & Lai, K.-h. (2007). Green supply chain management: pressures, practices and performance within the Chinese automobile industry. *Journal of Cleaner Production*, 15(11-12), 1041-1052.