PERCEIVED MEDIA COVERAGE AND ENVIRONMENTAL AWARENESS AMONG UNIVERSITY STUDENTS IN MALAYSIA: THE MODERATING EFFECTS OF PERCEIVED GOVERNMENT ROLE AND GREEN VALUES

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DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
2017

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Abstrak

Penemuan yang tidak konsisten mengenai hubungan antara liputan media (LM) dan kesedaran alam sekitar (KAS) menyediakan jurang kajian semasa yang mengundang keperluan kajian lanjut berhubung kemungkinan pembolehubah luar jangka (penyederhana). Berdasarkan rangka kerja teoritikal yang muncul, peranan kerajaan (PK) dan tanggapan nilai hijau (NH) disarankan sebagai penyerdehana berpotensi. Oleh itu, satu rangka kerja penyelidikan dicadangkan bagi meneliti kesan penyederhanaan pembolehubah peranan kerajaan (PK) dan tanggapan nilai hijau (NH) terhadap hubungan LM dan KAS. Rangka kerja penyelidikan ini disokong oleh Teori Penentuan Agenda dan Teori Pembingkaian, serta diperkukuh dengan Teori Kesan Terhad dan Teori Peninstitusian. Persampelan rawak berkadaran diterapkan bersama kaedah tinjauan untuk mendapatkan data. Hasil soalselidik 730 responden telah jadikan data untuk analisis dengan mengaplikasikan *Exploratory Factor Analysis* dan *Confirmatory Partial Least Square Structural Equation Modelling*. Didapati bahawa semua hubungan langsung antara LM dan KAS, NH dan KAS, dan NH dan KAS menunjukkan keputusan signifikan. Selanjutnya, sungguhpun PK didapati secara signifikan menyerderhanakan hubungan LM dan KAS, sebaliknya tidak dapat dibuktikan kesignifikanan kesan penyederhanaan oleh NH. Hasil kajian ini telah menyumbang pembolehubah baharu dalam rangka teoritikal hubungan LM dan KAS. Dari sudut metodologi, instrumen dan analisis kajian ini menawarkan pendekatan alternatif dalam memahami fenomena kewartawanan alam sekitar. Penemuan ini juga menyediakan input untuk polisi dan pelaksanaan mengenai kesedaran alam sekitar.

Kata kunci: Kewartawanan alam sekitar, kesedaran, liputan media, peranan kerajaan, nilai-nilai hijau

Abstract

The inconsistent findings on the relationship between media coverage (MC) and environmental awareness (EA) provide the current study research gap which invites further investigation into the possible contingent variables (moderator). Based on the emerging theoretical framework, government role (GR) and perceived green values (GV) were postulate as potential moderators. Thus, a research framework was proposed to examine the relationship between MC and EA, as well as the moderating effects of GR and GV on the relationship. The research framework was underpinned by Agenda Setting Theory and Framing Theory, and further supplemented by Limited Effects Theory, and Institutional Theory. Proportionate random sampling was adopted along with survey method to obtain data. The questionnaires of 730 respondents were used for data analysis that employed Exploratory Factor Analysis and Confirmatory Partial Least Square Structural Equation Modelling analysis techniques. It was found that all direct associations between MC and EA, GV and EA, and GR and EA demonstrated significant results. Further, while GR was found significantly moderated the relationship between MC and EA, there was no evidence for significant moderating effect of GV. It was found that all direct associations between MC and EA, GV and EA, and GR and EA demonstrated significant results. Further, while GR was found significantly moderated the relationship between MC and EA, there was no evidence for significant moderating effect of GV.

Keywords: Environmental journalism, awareness, media coverage, government role, green values

Table of Contents

Acknowledgement

In the Name of Allah, Most Gracious, Most Merciful

All praises and thanks to Almighty Allah for his great favors and bountiful blessings. Thanks to him as he has bestowed me both spiritual and physical need for the study. Thanks to Allah for giving me strength, patience, health, and hope to complete this long journey of study.

My deepest thanks go to my parents for their endless encouragement, support, and prayers. Also, I thank my brothers and sisters for their continuous support and motivation. This dissertation could not have been completed without your supports. May God reward all of you in this life and the hereafter.

My big gratitude also goes to my supervisor, Dr. Mohd Khairie Ahmed. I will remember your guidance, assistance, and contentious support for me throughout my PhD study. Many thanks also go to my second supervisor, Dr. Romlah Bint Ramli for the encouragement and motivation I received from her.

My heartfelt appreciation goes to my good friend, Irene Yong, for the continuous unconditional supports extended to me throughout the whole Ph.D journey. You open my mind to see that a true friend picks you up over and over again even though they keep stumbling on their own. Without you, this journey could have been abandoned many times, and never gets ended. May God keep you healthy and safe.

Last but not least, my warmest thanks go to my colleagues in the postgraduate work stations, who were always the source of my encouragement and supports. I thank you all very much for your sincere advice and generous knowledge-sharing. In particular, I love to express my special gratitude to brother Razak, Oba, Redwan, Mohamad Ramzan, Abbas, and Sumeria, , and all other colleagues.

Khaled M.I. Abu Fayyad

List of Tables

List of Figures

List of Appendices

List of Abbreviations

α	Cronbach's Alpha coefficient
API	Air pollutants Index
β	Estimate of beta coefficient/ path coefficient
CB-SEM	Covariance-based Structural Equation Modeling
CO^2	Carbon dioxide
CFA	Confirmatory Factor Analysis
DOE	Department of Environment
DOSM	Department of Statistics Malaysia
DV	Dependent Variable
EEM	Structural Equation Modeling
EA	Environmental Awareness
EPI	Environmental Performance Index
EFA	Exploratory Factor Analysis
EIU	Economist intelligence Unit
f^2	Effect size
GR	Government Role
GV	Green Values
IEA	International Energy Agency
IMF	International Monetary Fund
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin
MM	Measurement Model
Max.	Maximum score value
MC	Media Coverage
Min.	Minimum score value
NCCS	National Climate Change Secretariat
NIC	Newly Industrialized Countries
ρ_c	Composite reliability
PLS	Partial Least Square
PLS-SEM	Partial Least Square Structural Equation Modeling
q^2	Effect size of predictive relevance

Q^2	Q-squared (denotes Predictive Relevance)
R^2	R-squared (denotes Coefficient of determinant)
Sig.	Significant
SPSS	Statistical Package for Social Sciences
TBTS	Taman Beringin Transfer Station
UPU	Unit Pusat Universiti
VAF	Variance accounted For
VIF	Variance Inflation Factor
$\boldsymbol{X}^2$	Chi-squared
<	Less than (in value)
>	Greater than (in value)

CHAPTER ONE

INTRODUCTION

1.1 An Overview

This research is mainly focused on the relationship between perceived media coverage and environmental awareness in Malaysia. This chapter, therefore, is set out to highlight the background of the study, and the research problem. Next, the research objectives and the research questions that guided the study design are outlined. The concluding parts of the chapter underlined the significance of the study and definitions of key terms used in the study. The orientation of the study is to investigate the relevance of media coverage to people awareness, knowledge and beliefs towards environmental issues.

1.2Background of the Study

Having to live in a healthy natural environment is one of most important things for a quality life. However, many a time, the desirability for national development is hardly balanced by the initiatives to preserve the natural environment. While this notorious paradox is witnessed worldwide, it becomes particularly appealing for the developing countries, as the eager to strive for fully industrialized developed country's status is comparatively more intense. Malaysia is of no exception. Malaysia is a developing country (International Monetary Fund [IMF], 2014). In the continuum of development, a developing country is also denoted as a less-developed country (O'Sullivan & Sheffrin, 2007). Since independence, Malaysia has threaded a recognized history of national development, fueled by its natural resources and followed by phases-after-phases development initiatives. Particularly, industrialization was put to the forefront. Being renowned as one of the fastest

growing developing countries, today Malaysia is one of the very few countries (eleven) worldwide, which has been recognized and reached the stage of Newly Industrialized Countries (NIC). NIC are nations with economies more advanced and developed than those in the developing world, but not yet with the full signs of a developed country (Mankiw, 2007). As a NIC, Malaysia has a newly industrialized market economy, which ranks the third largest in Southeast Asia and 29th largest in the world (Sinha & Pachori, 2014). However, undeniably and unfortunately, this good-willed transformation has brought undesirable negative effects to the natural surrounding over the years (Ambali, 2011; Al-amin, Siwar, Huda, & Hamid, 2009; Jahi, Aiyub, Arifin, & Awang, 2009). The impact has become so plain today, as statistics speak for themselves

Under the mask of development, the environmental degradation appears evident in a broad range of land-based and sea-based activities, directly or indirectly. While manufacturing industries, agro-based industries, sewage treatment plants, and animal farms are sources of land-based pollution, sources of sea-based water pollutions range from oil or ballast water discharge of ships, waste trash from ships, shipping traffic, port operations and off-shore oil and gas exploration to production rigs (BOBLME, 2011). The national statistics clearly shows that the conditions of some environmental aspects of Malaysia are rather worrisome. Observing from the very surface of the earth habitation, urban air quality, river water quality, deforestation, household wastes and hazardous wastes are some obvious long-lived yet still-unsolved environmental issues facing Malaysia at this intermediary stage of development today. To coin an instance, the Malaysian Air pollutants Index (API) assessment revealed that 18 out of 52 stations monitored has recorded unhealthy level, with the remainder fairing only between good and moderate for most of the

time in 2011 (Department of Statistics Malaysia [DOSM], 2012). A note to heighten in corollary to this unfavorable overall air quality, it is worth-noting that an average of 65 to 70 percent of the forests area had been destroyed by logging operations of hill forests between the period of 1991-2009 (Ambali, 2011).

Critical conditions are also evident in the sea-change of water quality in Malaysia over the recent years. The Department of Environment [DOE] (2010) found that approximately 48.6 percent of the monitored 464 rivers were not clean in 2010. A similar phenomenon has also been observed in previous years. For instance, Environmental Quality Report 2009 showed that 46% of river water of Malaysia is polluted, and this figure is in fact higher than the previous couple of years (DOE, 2009). Similarly, the number of clean rivers has also reportedly noted a significant drop from 91 to 76 between 2007 and 2008, while those of slightly polluted rivers had drastically increased to 60 in 2008 as compared to 2007 (DOE, 2008). Previously, water pollution was due to mining activities, but presently the problem is contributed by intense logging, land clearing for infrastructure development, agriculture, and construction, manufacturing activities and leisure and recreation areas' development (Jahi et al., 2009). Such hazardous wastes as heavy metals sludge, mineral sludge, and asbestos and textile by-products were reportedly causing environmental water problems in Malaysia Peninsular (Ambali, 2011). Suspended solids waste is reported as remaining the main water pollutant in most Malaysian rivers and coastal waters. Further, forest depletion is evident in the large-scale conversions of forestland for agricultural purposes, hydro-electric projects, mining, commercial logging, and shifting cultivation (Jahi et al., 2009). In the same vein, emissions from stationary sources (industries including power plants), motor vehicles and open burning activities are reported the main sources of air pollution in Malaysia

(DOE, 2012). The DOE report has also revealed a massive annual production of 1,880,928.53 metric tonnes of scheduled waste in 2010 as compared to 1,707,308.14 metric tonnes in 2009 (DOE, 2010).

Furthermore, closely related to the statistics heightened above, some discouraging reputation of recycling practice is also noteworthy in Malaysia. The report by the DOE lamented that only 5% of the total waste is recycled, despite the high potential of such treatment practice. Consequently, above 280 million kilograms of solid wastes which were supposedly be recycled were discarded and land-filled annually (DOE, 2012). Likewise, the Malaysian government has also recognized solid waste as one of the most significant environmental problems. To note some frantic facts, approximately 2,000 tonnes of municipal solid waste has to be delivered from the Kuala Lumpur State Territory to Taman Beringin Transfer Station (TBTS) everyday in 2010 (Budhiarta, Siwar, & Basri, 2012). In another instance, the daily production of 17,000 tones waste in Kuala Lunpur is conjectured to be able to tot up the Kuala Lumpur Twin Towers in only nine days (Hassan, 2007).

Obviously, all the environmental problems mentioned above are the outcome discharges amidst the development activities. It seems to suggest a desperate contradict between development being the culprit of environmental degradation, and its importance as driving factors which would help develop Malaysia into a fully industrialized developed country as postulated by 2020. Again, they also seem unavoidable. But, is this the price for development? Apparently, it is not. Economic development does not necessarily mean sacrificing the environment. Take an instance of our very close counterpart, Singapore. Although comparing Malaysia to Singapore may not be an ideal, both countries share historical, cultural and geographical linkages in common as well as similar economic and developmental

aspirations. For example, Malaysia and Singapore have very similar history of development. Both share the same vision to be industrialized nation. However, Singapore although has already realized their vision of a fully developed industrialized country, their environment is much still intact. It is a well-established fact that *"... Singapore has succeeded in simultaneous pursuit of economic development and environment protection, providing people with a favorable living environment and a high-quality public health by the world's standards."... Considering the fact that neighboring countries in the Southeast Asian region are suffering from serious environmental pollution caused by economic growth, Singapore is unique in this region in that it is developing the economy while maintaining a favorable living environment"*(Global Environmental Forum, 2003, p.10). Malaysia, though still a long way to pave towards achieving such status, has already shown marks of compromising environment for the sake of economic development.

To cite some more remarks, the study by Economist Intelligence Unit in 2011 (EIU) has recognized Singapore as the Asia's greenest metropolis among 22 major cities. This assessment was based on fairly wide-ranging markers including energy and carbon dioxide (CO_2), land use and buildings, transport, waste, water, sanitation, air quality and environmental governance (National Climate Change Secretariat [NCCS], 2012). Singapore is also ranked second in the Sustainable Competitiveness Index conducted by the World Economic Forum's Global Competitiveness Report 2011–2012. This index is formed based on the considerations such as countries' environmental policy, resource efficiency and environmental degradation, alongside other economic and social indicators (NCCS, 2012). To note further, as an industrialized country, Singapore's pollutant indices remain under control. To mark a

clear example, while the carbon dioxide emission (CO^2) level of Malaysia has increased over the years, a noticeable decrease is witnessed in Singapore. This trend is depicted in Figure 1 A and 1B. To pluck a few figures, while Malaysia CO^2 emissions (Kt, in thousands) reached 216.8 in 2010 (The World Bank, 2010a), it was only 13.5 for Singapore(The World Bank, 2010b) .

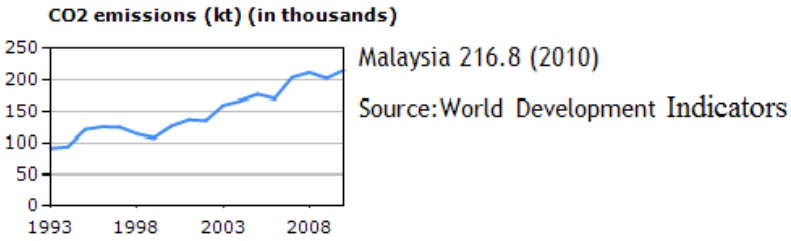

Figure 1A. Carbon dioxide emissions in Malaysia.

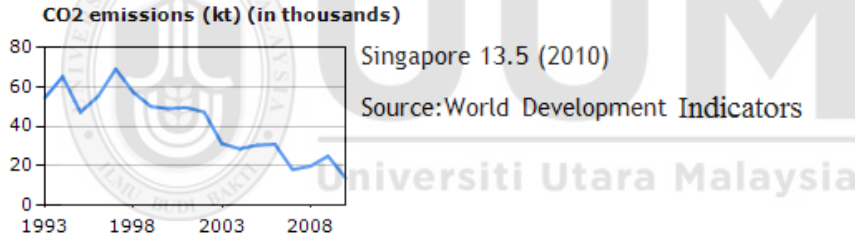

Figure 1B. Carbon dioxide emissions in Singapore.

Similar pattern of disparity is also reported by the International Energy Agency's [IEA] (2012) survey, where Malaysia's CO2 emission level (185.0 million tonnes) is nearly three times greater than that of Singapore (62.9 million tonnes). In addition, Singapore Pollutant Standards Index assessment shows that the country records 92% of days with 'good' air quality in 2012; 0% of unhealthy air quality days was reportedly remained over the years from 2007 through 2012 (Department of statistics Singapore [DOSS], 2013). As opposed to the 5% recycling rate in Malaysia (Brandt & Lim, 2012), Singapore intends to increase its recycling rate from

59% in 2011 to 70% by 2030 (NCCS, 2012). The long-term prospectus of environmental conservation is vivid.

In parallel to the statistics regarding the unfavorable state of environmental issues in Malaysia discussed above, also transpire to view are statistics pinpointing low level of knowledge and awareness among Malaysian pertaining to such issues. Surveys indicated that while respondents are high on basic or general environmental knowledge, knowledge on specific environmental questions were superficial (Ahmed & Ali, 2012; Ahmad, Noor, & Ismail, 2015). For instance, the survey by Ahmed and Ali (2012) showed that only 5 out of a total of 35 questions on basic and general knowledge on environment received more than 80% correct answers. In particular, the study revealed miserably low level of specific environmental knowledge, such as those related to differentiating bins for recycling glass and aluminum containers purposes, as well as air and noise pollution. In the same vein, the survey by Ahmad et al. (2015) found weak correlation between students' knowledge and their sustainable environmental practices. To add, Rahim, Zukni, Ahmad, and Lyndon (2012) examined the level of awareness and perception on green living amongst Malaysian youths. The study found low level of green awareness among the Malaysian youths. While only 22 % of them strongly understand the green living concept, only 12% confirmed of practicing green living. Indeed, quite a number of studies found that Malaysians possess low levels of environmental knowledge and awareness. This holds for youths (Rahim et al., 2012), teachers (Said, Ahmadun, Paim, & Masud, 2003), students (Ahmad et al., 2015; Ali, 2015; Chen & Chai, 2010) and public at large (Ahmad, Mustafa, Hamid, & Wahab, 2011).

In contrary, the survey done on our Singaporean counterparts however showed greater level of pro environmental concern. In a survey conducted to

measure the levels of environmental attitudes, public awareness and behaviours towards issues surrounding climate change in Singapore, National Climate Change Secretariat (NCCS) reported that 85% of respondents expressed the sense of belonging and togetherness in taking action on climate change, while 73 % claimed to care about climate change. 75% asserted motivation to preserve the environment for future generations (Tay, 2012, Feb 10).

According to Stamm, Clark, and Eblacas (2000), previous research often holds mass media responsible for public awareness inadequacies on environmental issues. This is largely because mass media has proven a very prevailing tool for channeling and extending awareness towards environmental issues amongst the public (Schoenfeld, Meier, & Griffin, 1979; Slovic, 2000). This is in part due to their capability of far-reaching and cost effective. (Hutton, Wyss, & N'Diékhor, 2003; Hogan, Baltussen, Hayashi, Lauer, & Salomon, 2005). Therefore, the phenomenon of superficial level of environmental knowledge and awareness among Malaysian as discussed above is suggestive of the inadequacy and ineffectiveness of media role particularly in the coverage of environmental issue. The viability of such claim can be traced back in previous studies which asserted that the consideration for the environment could only come from well-informed citizens who are aware of and fully committed to their rights to a quality environment (Bekalu & Eggermont, 2013: Haron, Paim, & Yahaya, 2005; OMB Watch, 2011; Said et al., 2003). Content analysts typically find gaps in media coverage due to episodic coverage of dramatic events, and to focusing superficially on human interest and conflict, while overlooking systemic concerns (Hasan, 2007). Such observations imply that, in the very context of Malaysia, its people and the regulator body which form the crucial part in the whole system (Malaysia) could perhaps have some important bearings on

environmental awareness issue. It is possible because advances in environmental protections are claimed to be possible with a more open and accountable government (Coward, 2010). Moreover, government (as the policy maker) is one of the utmost influential authorities to exercise new rules and regulations upon the public when it comes to the benefits for the public. None environment issue can reach the desired fruition without the proper assistance of the government body (Hepburn, 2010).

Further, the discussion above also points to the fact that as far as the very Malaysian context is concerned, the value its people hold may make somewhat the difference between what Singaporean can achieve and what Malaysia has not. Values are basic guiding principle central in people's life which may assert meaningful influence on what people attend to, what knowledge become most accessible to their cognitive, how much importance they ascribe to the consequences of their action, and how they evaluate the various aspects of the situation (Steg, Perlaviciute, van der Werff, & Lurvink, 2014).

Towards this end, empirical effort studying environmental awareness in Malaysia should be studied in concert with media effectiveness, government role and values the people hold (Keinonen et al., 2016; Pulia, 2008; Shahnaei, 2012).

1.3 Research Problem

Despite the significant importance of a healthy natural environment for living of all, and despite the glaring threatened scenarios and condition of the environmental deterioration in Malaysia, it is a depressing fact that perhaps previous empirical works which investigated such matter in Malaysia are still arguably insufficient of significance. Not much empirical efforts have been done in ways that inspect into such deterioration in the specific Malaysian context, and its people's awareness of such issue. Therefore, this current study aims at filling in this void by empirically

examining environmental issues in lights of the awareness of its people in the country. The starting point reflecting the issue at stake is hence environmental awareness.

Environmental awareness was defined as **"**the cognition about nature and value of environment-related human behaviour; it is recognized as a new independent ideology, a progressive value, and a sum of social idea, theory, emotion, willingness, consciousness and other concepts which reflects relationship between human and environment" (Li, Liu, & Liu, 2013, p.769).

With regard to the steadily increasing aspects of environmental deterioration in Malaysia as discussed earlier, raising environmental awareness could be one critical solution, because the root causes of environmental problems are related to human activities, consumption and production patterns (Ahmad et al., 2011; Sinnappan & Rahman, 2011). In fact, the absence of environmental awareness and proper environmental education has been identified by most multilateral environmental agreements as the main cause of major environmental problems and issues (Aminrad, Zakaria, Hadi, & Sakari, 2012). Thus, the quality of the environment depends critically on the awareness of people, which result from their practices, attitudes, and knowledge about environment.

However, molding environmentally-aware citizens is a complex and multidimensional task (Arlt, Hoppe, & Wolling, 2011; Hansen, 2011), because it requires putting together a myriad combination of information sources and various communication and social processes to form perception of sustaining environment in the public's mind (Kolandai-Matchett, 2009). While this holds true, media is one prominent platform where sources of information are synthesized to feeds input to this need. Mass media has long been recognized for holding potential role in

circulating information and messages to the massive, diverse and far-reaching audiences about various issues (Alan & Margaret, 1971; Briggs & Burke, 2009; Kushwaha, 2015). In particular, mass media has been credited by users at large, in both Malaysia and overseas countries, as a major source of information about environmental issues (Ahmad & Ali, 2012; Balraj, Nordin, & Pandian, 2009; Haron et al., 2005; McCallum, Hammond, & Covello, 1991; Rahim et al., 2012; Said et al., 2003). In fact, most time when negative environmental consequences alarm for public awareness, none has been put into incumbency as much as the mass media (Enobakhare, Orem, & Ogar, 2013; Keinonen et al., 2016; McCombs, 2002; Mikami, Takeshita, & Kawabata, 1999; Stamm et al., 2000).

As far as mass media is concerned, its importance and positive impact in raising public awareness about environmental issues is evident across literature study, either as being discussed from the theoretical viewpoint regarding the qualitative appreciation of media (Ahmed & Ali, 2012; Balraj et al., 2009; Briggs & Burke, 2009; Happer & Philo, 2013; Khan, 2016; Kushwaha, 2015; McCombs, 2013; Shanahan, Morgan, & Stenbjerre, 1997), or as being examined empirically linking media coverage to people's awareness across various environmental issues such as climate change, global warming, and pollution (Brulle, Carmichael, & Jenkins, 2012; Chokriensukchai & Tamang, 2010; Harring, Jagers, & Martinsson, 2011; Mikami, Takeshita, Nakada, & Kawabata, 1995; Sampei & Aoyagi-Usui, 2009).

However, the above studies of positive results do not come without contest. Inconsistent results also exist. For instance, negative and weak relationships between media and awareness had also been reported amongst the past studies (Mikami et al., 1999; Shay-Margalit & Rubin, 2016; Suhonen, 1993). Among them, Shay-Margalit and Rubin's (2016) study examined the effect of the reform in

environmental education program on environmental attitudes of students in Israel. The study found negative relationship between engagement with electronic media and environmental attitudes among students.

In another instance, mixed results within one sole particular work are also observable in past studies (Arlt et al., 2011; Shanahan et al., 1997). For example, the work of Arlt et al. (2011) while finding television and informational online media positively related to public awareness of climate problems in Germany, a negative relationship is also concurrently evident between newspaper coverage and public awareness.

In fact, other than the inconsistent findings in the past studies, it is also worth-noting that even many among the more recent studies on media coverage and environmental awareness are found still largely descriptive in nature, which tackle the issue at the preliminary level (Do, Kim, Lineman, Kim, & Joo, 2015; Enobakhare et al., 2013; Keinonen et al., 2016; Kushwaha, 2015; Rahim et al., 2012). Many amongst these descriptive studies also called for more empirical examination for the relationship between media coverage and environmental awareness (Enobakhare et al., 2013; Keinonen, et al., 2016).

For instance, Keinonen et al. (2016) recommended that the role of media should be included in models concerning the complex relationship between perceptions, attitudes, concerns, and behavior and participation. In addition to the call-for-further-empirical-attention, such researcher as Manuti (2013) had also highlighted that few studies have indeed focused on the actual relationship between media coverage and public's awareness of climate change. Furthermore, while there are broad discussion of media coverage as related to public awareness across various other areas such as politics (Agbatogun, 2009) and health (Gollust, Attanasio,

Dempsey, Benson, & Fowler, 2013; Lee et al., 2013), not much is comparatively noticeable for works exactly relating media coverage to awareness in the field of environmental issues. This very point has indeed been highlighted by very recent researcher such as Khan (2016). Besides, it is also important to note that studies examining the specific relationship between media coverage and environmental awareness were found mostly conducted in developed countries like United State and Japan.

The existence of inconsistent findings above and the calls for more examinations on the exact relationship between media coverage and environmental awareness provide the current study a research gap which invites further investigation into the possible contingent variables (moderators) that might have potential bearings to shed lights on additional explanation as to the impact of media coverage on environmental awareness (Baron and Kenny, 1986). While this inconsistency has open ways to probe into interaction of possible contingent variables, it was noticed that past studies had neither examined the role of government nor green values on the association between media coverage and environmental awareness, although the potentials of both are found in the literature.

On the one hand, government as the regulator and national policy maker is one of the utmost influential authorities to exercise new rules and regulations upon the public when it comes to the benefits for the public (Stoddart, Tindall, & Greenfield, 2012). Past studies which examined a population at large at the national level had occasionally brought the role of government into their investigation (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013). In particular to the environmental issues, it is interesting as to note the claim that none of the environmental issue can reach the desired fruition without the proper assistance of the government body

(Hepburn, 2010). Indeed, some recent empirical works found government role in positive association with environment-related concern such as public green purchase and attitudes toward environment (Chen & Chai, 2010; Mei, Ling, & Piew, 2012; Sinnappan & Rahman, 2011). Further, it was also asserted in past studies that, how public perceive and act upon the environmental concern is influenced by the intersection among government policy, media coverage as well as the public attitudes and behaviors (Boykoff & Rajan, 2007).

On the other hand, values peoples hold may equally assert pivotal bearings on the environmental awareness issue. With regards to this, previous studies had offered understandings that, changing the values that people hold about environmental issues could be the only effective long-term solution (Schultz & Zelezny, 2003). In fact, it has also been heightened that the change in the people values has a significant impact on the rise in people awareness and on their priority and sensitivity to environmental protection (Inglehart, 1995). Essentially, values influence the internal mechanism of individuals, and affect how certain attitude and behavior form (Li et al., 2013). Moreover, empirical evidence also demonstrated positive correlation between value orientations and public awareness (Gärling, Fujii, Gärling, & Jakobsson, 2003; Nordlund & Garvill, 2003; Schultz et al., 2005; Oreg & Katz-Gerro, 2006; Steg et al., 2014).

Besides the empirical evidence above, the moderating potentials of government role and green values are also consistent with Institutional Theory. According to Institutional Theory, the regulatory and normative dimensions are two important national-level concerns (dimensions) that clearly determine how different nations respond to environmental issues (Kostova, Roth, & Dacin, 2008; Kostova & Roth, 2002). While the former refers to the rules and regulations in a particular

nation or setting that promote certain practices or behaviours and restrict or ban others (Kostova, 1999), the latter represents the cultural values, goals of the society, and beliefs that determine the legitimacy of the displayed behaviour (Kostova & Roth, 2002).

This theoretical viewpoint is also in agreement with the fact that both government and its people form a huge part in the whole system of a country. In fact, the moderating potentials of both government role and people's green values were reflected in a survey which depicted the federal government as being ranked first, followed by individuals, and then business and industry amongst seven groups on who should take the lead in addressing environmental issues (SC-Johnson & GfK, 2011). Given the empirical and theoretical foundation discussed above, it is reasonable to postulate government role and perceived green values of people as potential moderators that would give rise to the existing relationship between mass media coverage and environmental awareness.

Towards this end, the current study put forth a research framework consisting of four major variables into investigation of environmental awareness in the Malaysian context. This framework includes environmental awareness as the dependent variable, perceived mass media's coverage as the predictor, and two moderators, namely the perceived government role and green values. All these variables are perceived from the perspective of the public, the end user of media. Pparticularly, the whole research framework is underpinned by the theory of agenda setting and framing (the main theories) as well as two other supporting theories, namely theory of limited effect and institutional theory.

In addition, media coverage though has been studied with public awareness of environmental issue over the years, not much of these empirical works, to the

knowledge of the researcher, has demonstrated empirical attempt to operationalize media coverage as perceived from perspective of the public, the seemingly end users of the media product. In fact, different media-related measures are used to answer research questions in different settings, which correspond uniquely to the research issues under investigations. Furthermore, it is also equally important to note the difference of unit of analysis used in previous studies and the current one. While the unit of analysis intended for the current study is at the individual level, those of the previous studies are dependent on the level of the content intended, for example, at the article-level (Rogala, 2011; Sampei & Aoyagi-Usui, 2009), subject matter-level (Anderson & Marhadour, 2007; Das, Bacon, & Zaman, 2009).

1.4 Research Questions

Building on the foregoing discussion of the research problem, four main research questions were postulated.

i. What is the level of environmental awareness among public in Malaysia?
ii. What is the relationship between perceived media coverage and environmental awareness of public in Malaysia?
iii. Does 'green values' among the people play a moderating role to influence the relationship between perceived media coverage and environmental awareness of public in Malaysia?
iv. Does perceived government role play a moderating role to influence the relationship between perceived media coverage and environmental awareness of public in Malaysia?

1.5 Research Objectives

Corresponding to the research questions set forth above, presented following are the research objectives purported to be achieved in this study. These objectives are:

i. To determine the level of environmental awareness among public in Malaysia.

ii. To investigate the relationship between perceived media coverage and environmental awareness of public in Malaysia.

iii. To examine the moderating effect of green values on the relationship between perceived media coverage and environmental awareness of public in Malaysia.

iv. To examine the moderating effect of perceived government role on the relationship between perceived media coverage and environmental awareness of public in Malaysia.

1.6 Scope of the Study

To achieve the research objectives above, survey questionnaires were self-administered. The intended population is the Malaysian public. Given the difficulty to collect data from each individual public (even though through sampling), the most representative group for this intended population had to be used. For this reason, the unit of analysis of this study was the university students studying in the public universities of the Northern region of Malaysia, namely Universiti Sains Malaysia (USM) Penang, Universiti Utara Malaysia (UUM) Kedah, and Universiti Malaysia Perlis (UniMAP). University students were considered the reasonable most-representative group for two main reasons. Firstly, the daily learning activities of university students require their highly frequent involvement in extracting needed information from all sorts of information sources.

Secondly, the students attending tertiary education in the Malaysian universities comprise a diverse group of peoples, spanning across a considerably wide range of age group. This is because the Malaysian universities offer a range of tertiary educational programs from Diploma Degree to Postgraduate Degrees of Master and Ph.D (Ministry of Education Malaysia, 2014), which understandably attended by students of different levels of age groups. Further, students studying in the public universities come from different states of Malaysia, following the allocation made by the government department in-charge, Unit Pusat Universiti (UPU). Data collection was carried out from February 2016 until March 2016.

1.7 Significance of the Study

The significance of the study could be recognized through three important appreciations, namely the theoretical, methodological and practical perspectives

Theoretically and empirically, the empirical relationships examined in all the direct associations, namely the relationship between MC and EA, the relationship between GV and EA, and the relationship between GR and EA, contributed to the body of knowledge. As these associations were hypothesized on the basis of empirical evidence and theoretical underpinning, the findings found in this research corroborated the existing literatures in each field relevant to MC, GV, and GR. The results were direct indication whether the enhancement in MC, GV, and GR would lead to greater outcome of EA in the Malaysia setting. In particularly, the examination of moderating effects of GV and GR on the direct relationship between MC and EA offered deeper understanding as to whether the enhancement of GV and GR would promote the positive effect of MC on EA. Worth highlighting also was the theoretical discussions made while verifying the possible theorization of media coverage from the user's (audience) perspective. In addition, the pooling of vast

literature to review and provide suitable definitions (conceptual definition) for GV and GR also contributed to the existing body of knowledge related to GV and GR. In fact, GR has not been studied as moderator in the past. Further, the examination of government role alone in the area of environmental awareness in relation to the media coverage was also still scant. The comprehensive literature study done contributed significant theoretical insights.

Methodologically, besides the theoretical and empirical insights flowing from the examination of the hypothesized relationships, the current study also contributed to bridge several methodological voids related to the conceptualization and operationalization of the variables understudied. Particularly, the conceptualization and operationalization of MC from the user's perspective was the very first empirical effort of its kind. Although there had been past literature discussing about media coverage related to public awareness across various areas such as politics (Agbatogun, 2009) and health (Lee et al., 2013), there was none noticeable empirical works, to the knowledge of the researcher, which had made the attempt to operationalize media coverage as perceived from perspective of the public, who are the end users of the media product. This study contributed to an alternative measure of media coverage which is gauged (and perceived) from the public perspective, the end user of mass media.

Likewise, the current study had conceptualized GR and GV, as there were no readily available direct appropriate definitions that suited the context of this study. The study also further operationalized both GV and GR based on the conceptual definitions. Significance-wise, the operationalization (measurement scale) of government role was different from those used in the past studies as it was revised from several sources (Carman, 1998; Johnson, 2011; Nielson, 1999; Poortinga et al.,

2004; Rahim et al., 2012; Wang et al., 2013; Weigel & Weigel, 1978) in order to include a sufficient range of perceptions which suit the specific context of the current study. Further, given that the measurement was still new, the validated scale allowed further examinations of government role in future research.

Similarly, while EA was operationalized as a multi dimensional scale comprising four dimensions (namely cognitive, affective, conative and behavior dimensions), existing measurement scales for adaptation were only available for the affective, conative and behavior dimensions as well as part of the cognitive dimension. There was no readily adaptable scale for the cognitive dimension which comprised both essence of the belief and knowledge aspect. This was because previous studies of EA did not incorporate the knowledge aspect of EA due to the absence of a continuous scale. Therefore, while the belief aspect could be adapted from existing measure, the knowledge aspect was partly adapted and partly developed into usable form to suit the purpose of correlational study. By filling this measurement void, the current research not only may explore and describe the level of cognitive awareness (knowledge), most importantly, the continuous scale of the knowledge aspect further allowed examination of cognitive awareness together with other dimensions within a correlation study.

Practically, the findings of the study would benefit the media institutions, policy makers, and the public of Malaysia in several important ways. In the overall issue of environmental awareness, both literature reviews and findings of this study demonstrated critical importance of raising people's environmental awareness. Public needs to be alert that living in a healthy natural environment is one critical basic need for a quality life for human and all living things. This basic condition needs to be preserved if it was to be sustained in the long run. In fact, awareness towards

environmental problems, knowledge about environment, and concern for environment could have positive influence in ameliorating the negative consequences of environmental problems, if not all. Essentially, awareness is an important prerequisite for people's participation and their willingness to take action and support policies for the preservation of the environment.

Media coverage is an integral part of promoting informed and active citizens who are fully aware of what pose a danger or threat to their environment. It is an effective function which educates public about ameliorating negative consequences of environmental problems. The moderating effect results provided some practical hints as to the practicality of workable interaction or cooperation between the media organization with government and the public. For instance, though on an independent stance, government is the very locus of responsibility, and one of the utmost influential authorities that hold the power to pro-environmental regulation enforcement, however, a well-synchronized cooperation between government enforcement efforts and media's dissemination of relevant information could possibly lead to more constructive effect on EA on the public. The media institution may also gain insights regarding what appears to be attractive and effective to draw users to environmental messages.

Similarly, the moderating effect of GV also provided practical indication whether the public could in any potential way work hand-in-hand with the media organizations to help promoting EA. Values people hold play critical role in influencing people sensitivity toward environmental issues, because it impact the people awareness of negative consequences of environmental problems and the importance of their own actions. In fact, enhancing people values could be the most

effective long term solution to overcome environmental problems and arouse awareness towards them.

At a higher level of practical significance, the findings of this study also contributed potential input for policy formulation and adaptation. In particular, the examination of the level of EA provides the government some understandings of the most recent state and real condition of environmental awareness among the Malaysian public. In this way, the Malaysian government could initiate appropriate proactive pro-environmental actions, or plans to promote suitable campaigns among the people for environmental issues. In the same vein, the examination of MC also provided government predictive indication of the sufficiency of media role in Malaysia. Other than the advantage of monitoring the efficiency of media in Malaysia, government could tailor or adjust relevant policies and reinforce rules on media organization such that effective role of media bodies could be boosted.

Above all, the theoretical, methodological and practical significance derived from the examination of the variables in this study would enhance the whole interactive process of message between the media as the deliverer and the public as the receiver; and government as the reinforcement agent. Improvement of this interactive iterative process is potential to raise public environmental awareness in the long run.

1.8 Definition of Key Terms

Presented here are the definitions of key terms used in this study. Particularly, EA's definition was adopted from the existing definitions. As there were no direct definitions which could be directly adopted for MC, GV, and GR, their definitions were reached through reviewing relevant literature in Chapter Two.

1.8.1 Environmental Awareness

Environmental awareness was defined as " the cognition about nature and value of environment-related human behavior; it is recognized as a new independent ideology, a progressive value, and a sum of social idea, theory, emotion, willingness, consciousness and other concepts which reflects relationship between human and environment" (Li et al., 2013, p.769). In this study, environmental awareness was operationalized as a multi-dimensional construct consisting of four dimensions namely, the cognitive, affective, conative, and behaviour dimensions.

1.8.2 Perceived Media Coverage

Perceived media coverage was defined as the amount and the prominence of media content on environmental issues presented to users (Amenta, Caren, Olasky, & Stobaugh, 2009; Barakso & Schaffner, 2006; Clayman & Reisner, 1998; Gamson & Wolfsfeld,1993; Koopmans, 2004; Manheim, 2012), which was equally operationalized as the extent to which the news was informative and educational (Harring et al., 2011; Sampei & Aoyagi-Usui, 2009).

1.8.3 Green Values

'Green values' was defined as the values that human attached to natural environment which promote mindfulness of the environmental impact of one's behavior, and the very need of natural environment to be preserved, protected, and sustained in a manner that delivers mutual benefits to both environment and human, by the virtue of a good, safe, comfortable and quality life (Chen et al., 2015;Farahat & Emad Bakry, 2012; Li et al. ,2013; Qualitel Association Report, 2012; Shabani et al., 2013; Taufique et al., 2014).

1.8.4 Perceived Government Role

Government role was defined as enacting environmental related measures by government to prevent, control, protect, and sustain the natural environment. In this definition, government role constitutes the aspects of government-based initiatives and programs or activities related to environment (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Ali & Ahmad, 2012; Ali, Khan, Ahmed, & Shahzad, 2011; Wahid Rahbar, & Shyan, 2011), stringency and enforcement of environmental rules and policies (Sinnappan & Rahman, 2011; Stoddart et al., 2012), environmental education and information dissemination, as well as facilitation of joint research and development efforts (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013) with relevant parties and public at large in promoting sustainable practices and environmental-friendly minds and lifestyle.

1.9 Summary

The chapter describes the research background and the issue related to the topic under investigation. Then, the chapter proceeds with discussion of research problem to crystalize the research questions and objectives to be achieved. Next, the scope of study is clarified. Following suit, the research significance is heightened, and definitions of key terms are outlined. The chapter ends with a summary.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This main purpose of this chapter is to present a sufficient body of literature review which is aimed at establishing the hypotheses of the current study. Immediately following this section is Section 2.2 which discusses the conceptualization of all main variables understudied as well as relevant literature which provides additional supports for the conceptualization. Later, Section 2.3 presents discussions that lead to hypotheses development. Then, in Section 2.4, the research framework and relevant theories are discussed as to how the selected theories are applicable to explain the relationships hypothesized. Finally, the chapter ends with a chapter summary.

2.2 Conceptualization of Main Variables Understudied

This section presents the conceptualization of the main variables examined in the current study. It starts off with eenvironmental awareness (the dependent variable), then followed by media coverage (the independent variable), green values and government role (moderators). This section is crucial particularly to make clear the possible ambiguities which arise from the discursive discussion about the conceptual meanings of main variables in the existing literature. Further, all variables understudied are considerably new in the specific context of this study. While media coverage needs reconceptualization from the user's perspective, direct existing conceptualization of green values and government role are yet to be available. So does the cloud of the rather elusive conceptualization of environmental awareness.

2.2.1 Conceptualization of Environmental Awareness

Environmental awareness concept was first appeared in 1968, in the United States (Li et al., 2013). In fact, environmental awareness is not a scientific term, but one that is initiated from the field of politics (Bamberg, 2003). Scholarly works from different fields of social science occasionally conceptualize and operationalize it rather diversely. This is due to the fact that both the term "environment" and the expression "awareness" are complex and intertwined with various different aspects or dimensions. Besides, environment covers a broad range of relevant aspects such as geography, ecology, philosophy, environics, ethics, law, political science, and other disciplines (Li et al., 2013). It involves a wide array of actors, and that straightforward solutions are mostly rare (Stern, Young, & Druckman, 1992). Moreover, the expression of awareness was also found used interchangeably with many other expressions such as concern, attitudes, consciousness, and knowledge.

On the one hand, a study may encounter difficulty in assigning characteristics and attributes to the subject matter (environment), since there is no consensus reached about them. On the other hand, confusion exists in the different terminologies used to connote awareness. Though the literature seemed abundant, the current study however found them being used interchangeably without due clarifications.

Given the lack of clarity about the environmental awareness concept, it was therefore necessary for this study to recognize the overlapping and perhaps the misleading understanding of the concept, and henceforth proffered a clear definition which suited the specific setting of this study. For this purpose, the formulation of environmental awareness concept is discussed in the following section.

2.2.1.1 Formulation of Environmental Awareness Concept

The current study followed Dunlap and Jones's (2002) formulation to guide understanding for the concept of environmental awareness meant for this study. Dunlap and Jones distinguished between two key aspects of the concept of environmental awareness. These two aspects were differentiated on the basis of the substantive issue of environment, and of the different terminologies used to denote awareness. Specifically, the former looked into the object of awareness which implied all aspects of the physical environment or constructed environment. The latter considered the terminology of awareness which concerned all facets of attitudes, feelings, values, and norms that people engage with. It was in these two views that the conceptualization of environmental awareness was molded for the current study. The two aspects mentioned above are discussed in two separate sub-sections below.

A) Environment as an Object of Awareness

It is important to grasp the core (definition) of the environment construct itself in the discussion of environmental awareness, because public's understanding of what constitutes "environment" plays crucial role in reflecting how public perceive and respond to environmental issues (Coyle, Maslin, Fairwheather, & Hunt, 2003). Without which, misunderstanding is likely to happen.

For instance, Coyle et al. (2003) found that public misunderstood what constituted the issue of biotechnology. They most often associated it with such thematic matters as "nuclear warfare", "increase in power of the damage that can cause", "recycling or composting", "chemicals" or "looking after endangered species" (p.50). Indeed, scholars in various fields often defined and interpreted

environment differently according to their personal background and field of expertise.

The differences were conceivable because great differences indeed exist in the societies, periods and social groupings (within any society) as a result of social-cultural process (Barnes & Duncan, 2013). As Barnes and Duncan (2013) noted, social and cultural sciences help clarify the socially varied ways in which an environment could be perceived, evaluated and interpreted. In fact, it was believed that it was the specific social practices of people which produced or transformed different natures and different values (Macnaghten & Urry, 1998).

Generally, it was found that there was a wide array of definitions which had been commonly identified under the labels of "nature" and "environment"; these two environment-related labels were approached differently across studies.

In some studies, environment had been viewed broadly. For example, the study by Macnaghten and Urry (1998) demonstrated that the understanding of environment had often been related to the approaches as to how environment could be further delineated. It was henceforth forming such doctrines as environmental realism, environmental idealism, and environmental instrumentalism. In environmental realism, environment is viewed as 'real entity' separated to a large extent from the social practices and human experiences. This view sees the concept of nature as being able to be turned into a scientifically researchable one by modern rational science. On the other hand, environmental idealism emphasizes nature and environment in terms of the way they can be analyzed (through identifying, critiquing and realizing various values that relate to the character, sense and quality of nature). The third approach, environmental instrumentalism, underlines nature and

environment as the understanding of how people respond to them, and the motivation behind human's engagement into environmentally sustainable practices.

Yet, another stream of research looked into the socially varied ways of interpreting nature, in which the environment was subsumed as one element of nature (e.g., Ginn & Demeritt, 2008; Ruse, 1995). This line of works could be traced back to the different definitions and views found in studies which discussed about nature (Ginn & Demeritt, 2008; Macnaghten & Urry, 1998; Ruse, 1995; Szerszynski, 1993; Williams 1976, as cited in Macnaghten and Urry, 1998).

For example, Ginn and Demeritt (2008) viewed nature as the essence of a thing (e.g. the nature of social exclusion), unmediated material world that is external to humanity (e.g. natural environment), and the universal law or reality that may or may not include humans (e.g. natural laws or Mother Nature). Likewise, Ruse (1995) defined nature as revolving around three meanings: i) nature as the universe and its contents; ii) nature as the animate world set off against the inanimate; and iii) nature as encompassing everything, especially the organic world as opposed to humans and impact of their activities.

Again, it was observed that the definition of nature in some other studies, to certain extent, mirrored the essence of environment. In this line of studies, nature was defined as the character or the essential quality of something. It was also referred to as living and non-living things, the hidden force that is responsible for events that happen over the world, the original condition of the world before the human society come to exist, the physical environment as opposed to the human one, and the rural with its visual and creational properties as opposed to the city and town (Strathern, 1992; Szerszynski, 1993; Williams 1976, as cited in Macnaghten and Urry, 1998).

Similarly, Macnaghten and Urry (1998) viewed nature as landscape, as threatened by pollution and needs to be protected, as scientifically researchable object, as providing life support for human beings, as a source for spiritual renewal, and mostly as the environment.

The definitions of nature discussed above only provide partial understanding on what environment constitute. However, for the purpose of the current study, this study reckoned that environment should be defined in a broad sense of environmental discourse. Particularly, a definition which imparts human's influence or role was thought to be more appropriate for the current study. Therefore, to substantiate this partial understanding of environment, the current study looked up in several dictionaries for the definition of environment. Since nature and environment had mostly been mentioned, dictionary search was therefore focused on such two terms to see if they can be meaningfully integrated for the use of the current study. These definitions are per cited below.

Oxford Dictionaries Online define nature as "the phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to human creations". The Cambridge Dictionary refers the environment to as " the air, water, and land in or on which people, animals, and plants live, and as the conditions that people live or work in, and the way that they influence how people feel or how effectively they can work". Similarly, Oxford Leaner's Dictionaries define the environment as "the natural world in which people, animals and plants live, and as the conditions that affect the behaviour and development of somebody/something or the physical conditions that somebody/something exists in".

The Medical Dictionary identifies environment as "the sum of the total of the elements, factors and conditions in the surroundings which may have an impact on

the development, action or survival of an organism or group of organisms". Besides, Dictionary of Sociology (Scott & Marshall, 2009) defines the environment as "the social context in which the individual or organism live, and the way the individual make an adaptation and adjustment to this environment...p.231".

The definitions from the dictionaries search concurred on two main meanings, firstly, environment as equal to nature, and secondly, environment as equivalent to surrounding or conditions that surrounds human beings. Both meanings are suitable for the current study. However, the term "environment" will be used in this study (as opposed to the term nature), because the term nature views environment as only one of the elements of nature, and there is no sufficient indication as to the engagement of humans and their labour. Hence, the term 'environmental' was preferably used for the current study.

B) Terminology of 'Awareness' as an Expression of Environmental Awareness

Leaving aside the different definitions of environmental awareness, the essence of environmental awareness itself manifests in different expressions (or terms used to express environmental awareness). Among these terms, five were found prevalent in the literature. These terms are shown in Table 2.1.

Table 2.1

Terms Used to Express Environmental Awareness

	Terms	Past studies
i)	Environmental 'awareness'	Arlt et al. (2011), Kollmuss & Agyeman (2002), Mikami et al. (1995), Ogunbode & Arnold (2012), Sampei & Aoyagi-Usui (2009), Wang, Innes, Hajjar, Zhang, & Wang (2013)
ii)	Environmental 'concern'	Brulle et al. (2012), Dunlap & Jones (2002), Holbert, Kwak, & Shah (2003), Schaffrin (2011), Shanahan et al. (1997), Xiao & Dunlap (2007), Zhao (2012)
iii)	Environmental 'attitude'	Davey (2012), Fazio (1990), Maloney & Ward (1973), Yin (1999)

Table 2.1 Continued

iv)	Environmental 'consciousness'	Rannikko (1994), Sánchez & Lafuente (2010), Schlegelmilch, Bohlen, & Diamantopoulos (1999)
v)	Environmental 'knowledge'	Laurian (2003)

The literature study found out that the terms mentioned above had indeed been used interchangeably across studies related to environment over the years. The interchangeability between these terms was reckoned evident in the similar constituting dimensions used in this line of past studies. These dimensions were namely the cognitive, affective, conative, and behaviour aspects. However, it was observed that the extent to which these dimensions were used in combination for a study differed across studies of different objectives and settings. Just as Dunlap and Jones (2002) put it, that it was common to find some studies which examined a combination of these dimensions, while some others focused only on a certain dimension.

However, it was found that most of the studies used a combination of at least two dimensions. The most commonly used dimensions among them are the cognitive and affective aspects. Presented in Table 2.2 is the summary of studies that demonstrated the dimensions used in different studies, which were examined under different terms.

Table2.2

Terms and Dimensions of Environmental Awareness

	Terminologies	**Main dimensions**				**Others**	**Research**
		Cog	Affect	Conat	Behav	Eval	
1	Environmental awareness	Y	Y				Li et al. (2013)
		Y	Y	Y			Ogunbode & Arnold (2012)
		Y	Y	Y			Arlt et al. (2011)
		Y	Y				Takala (1991)
		Y	Y				Kollmuss & Agyeman (2002)

Table 2.2 Continued

2	Environmental concern		Y	Y			Zhao (2012)
			Y	Y			Schaffrin (2011)
			Y				Hansla, Gamble, Juliusson, & Gärling (2008)
		Y	Y	Y			Sevillano, Aragonés, & Schultz (2007)
			Y	Y			Xiao & Dunlap (2007)
			Y				Schultz et al. (2005)
		Y	Y		Y		Bamberg (2003)
		Y	Y				Holbert et al. (2003)
		Y	Y	Y	Y		Dunlap & Jones (2002)
		Y	Y		Y		Bord, O'Connor, & Fisher (2000)
		Y	Y	Y			Shanahan et al. (1997)
3	Environmental consciousness	Y	Y	Y	Y		Sanchez & Lafuente (2010)
		Y			Y	Y	Schlegelmilch et al. (1996)
4	Environmental attitude	Y	Y	Y			Davey (2012)
		Y	Y			Y	Yin (1999)
		Y	Y				Fazio (1990)
		Y	Y				Fazio (1986)

Note. Y denotes dimensions included in a particular study. Cog denotes cognitive; Affect, affective; Conat, conative; Behav, behaviour; Eval, evaluative.

Therefore, it was not surprising or uncommon to find studies claiming the use of terms as synonyms. For example, some studies applied the term environmental 'concern' to refer to environmental 'attitude' (Dunlap & Jones, 2002; Fransson & Garling, 1999; Schultz & Zelezny, 1999), while some others used the term environmental 'consciousness' to connote the latter (Sánchez & Lafuente, 2010).

Similarly, while the current study also found researches which differentiated environmental attitudes from environmental concern (Schultz, Shriver, Tabanico, & Khazian, 2004; Stern & Dietz, 1994), some other studies however used the two terms interchangeably (Dunlap & Jones, 2003; Milfont & Duckitt, 2010; Van Liere & Dunlap, 1981). Yet, still in another instance, Bamberg (2003) viewed environmental concern as general attitudes. However, the American Psychological Association (2001) considered environmental attitudes as a psychological index term used in general. More specifically, environmental attitudes itself had been defined as ''…

The collection of beliefs, affect, and behavioural intentions a person holds regarding environmentally related activities or issues'' (Schultz et al., 2004, p.31).

To a greater extent, the current study also noticed the situation where one term being subsumed under another. For example, Rannikko (1994) defined environmental consciousness as only one aspect of environmental concern. Likewise, awareness and information had been defined as "…two distinct and logically ordered elements" of environmental knowledge (Laurian, 2003, p.258). Laurian defined 'awareness' as merely knowing that an issue existed, while 'being informed' was defined as knowing specific facts about the issue. Yet, there was also argument that the reverse was also acceptable (Kollmuss & Agyeman, 2002). In this view, such researchers as Kollmuss and Agyeman (2002) argued that it was indeed 'environmental knowledge' which was a subcategory under 'environmental awareness'.

As the current study reviewed further, greater ambiguity was also observable in terms which were used according to the meaning or essence they carried. For example, it had been pointed out that many studies on environmental awareness indeed used results of 'opinion' surveys as a proxy for level of environmental attitude (Iizuka, 2001). Although opinion was clearly different from attitude as Worcester (1997) stated that the defining features of the two as "…opinions: the ripples on the surface of the public's consciousness, shallow and easily changed; attitudes: the currents below the surface, deeper and stronger…" (p.160). The literature study also came across other researchers who pinpointed such other scholar as Roth who proposed "environmental literacy" as a prototype of environmental awareness (Li et al., 2013).

Likewise, also appeared in the literature were definitions of these terms used, but were of nuances among them. Take an instance, environmental awareness was defined in a narrow sense as 'knowing of the impact of human behaviour on the environment' (p. 253); it had both a cognitive, knowledge-based component and an affective, perception-based component (Kollmuss & Agyeman, 2002). Meanwhile, other study had also referred to environmental awareness as in a broad sense, in which environmental values were included as one of the constituting aspects of environmental awareness (Li et al., 2013). Herein, environmental awareness was defined as "the cognition about nature and value of environment-related human behaviour; it is recognized as a new independent ideology, a progressive value, and a sum of social idea, theory, emotion, willingness, consciousness and other concepts which reflects relationship between human and environment" (p.769).

In the like manner, attitudes had been defined as "… sets of beliefs in particular outcomes connected with pursuing a given line of behaviour and the relative rewards and costs connected with those outcomes" (Bord et al., 2000, p. 207). In particular, environmental attitudes were defined as "people's orientations toward environmentally-related objects, including environmental problems themselves and problem-solving actions" (Yin, 1999, p.63).

Similarly, nuances were also noticeable in the definition of environmental concern. This term had been defined as a broad concept which referred to a wide array of phenomena, spanning from the awareness of environmental problems to the support for environmental protection, all of which captured the attitudes, related cognitions, and behavioural intentions towards the environment (Dunlap & Jones, 2002).

On the other hand, environmental consciousness was referred to psychological factors and related processes associated with individuals' tendency to

act in pro-environmentally way (Sánchez & Lafuente, 2010). And still, at the another end of the spectrum, environmental knowledge was defined as one ability to identify a number of symbols, concepts and behaviour patterns related to environmental protection (Laroche, Bergeron, & Barbaro-Forleo, 2001). It was also defined as "general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems" (Fryxell & Lo, 2003, p.84).

Given the above array of terms, the current study followed the recommendation of Schaffrin (2011) that a possible way to come clear amongst these terms was to identify the essence of the desired terms by observing the constituting dimensions within a particular term. According to Schaffrin, there were four main established dimensions which were most commonly used in research related to environmental issues. They were namely the cognitive, affective, conative, and behavioural dimensions as briefed below:

i) **The cognitive dimension** included environmental 'knowledge', 'the knowledge aspect of beliefs' and the cognitive element of attitudes (Schaffrin, 2011). Cognitive dimension was also classified as a long continuum that ranged from accurate knowledge to inter-subjective personal environmental beliefs, and environmental norms (Dunlap & Jones, 2002). In particular, belief was deemed important in the setting of the current study, because belief included positive and negative emotional aspects of an evaluation (Schaffrin, 2011).

ii) **The affective dimension** was taken as including attitudinal indicators that tapped personal feelings or evaluations of either specific environmental issues or broad environmental issues (Dunlap & Jones, 2002). Affective dimension reflected the essence of environmental consciousness, the emotional element of attitudes, concern, and emotional judgment aspect of beliefs (Schaffrin, 2011).

iii) **The conative dimension** was defined as a readiness to perform, or a commitment to support, a variety of actions that could potentially impact environmental quality. These included willingness to perform specific individual actions (recycling) or a set of individual actions (e.g., green consumerism, green marketing), as well as stating support for a specific or a general public policy proposal. Simply, conative dimension captured both personal and public commitment towards protecting environmental quality (Dunlap & Jones, 2002).

iv) **The behavioural dimension** of awareness represented the actual or reported actions taken by individual (personal environmental behaviours) and their behavioural expression of support for government policies, programs and organizations (public environmental behaviour) (Dunlap & Jones, 2002).

To sum up all the above discussion, two important points were reached. First, the current study preferred to use the term environmental awareness (as opposed to the rest). The reason behind the use of this particular term was that awareness was the most commonly used term in media studies generally, and the field of environmental journalism specifically (Arlt et al., 2011; Chokriensukchai & Tamang, 2010; Hansen, 2007; Hesselink et al., 2007; Mikami et al., 1995; Sampei & Aoyagi-Usui, 2009). The current study was of the stance that, while the term environmental concern may seem rather general, other terms such as environmental consciousness, environmental attitude, and environmental knowledge tend to invite ambiguous interpretation, as literature revealed different subsuming structure among these terms.

Secondly, the current study concluded that the core of the different terms mentioned above were indeed concurred on the essence of four broad dimensions, which were the cognitive, affective, conative, and behaviour. However, this current

research found that all four dimensions were suitable for the context of this study, as they were inter-related, one led to another. Using all four dimensions was deemed necessary to sufficiently capture a full string of elements for environmental awareness, given their interconnectedness.

The rationale of such inter-connectedness could be understood from Schaffrin's (2011) work. According to Schaffrin, the cognitive dimension was the personal knowledge and believes about causes, responsibilities, and solutions for environmental problems. Then, on the basis of these knowledge and believes (cognitive dimension), the affective dimension added an emotional or evaluative part where individuals decided whether the postulated consequences from environmental problems were good or bad (more or less seriousness). Further, this evaluation (in affective dimension) continued to activate the conative dimension of behaviour intention, which was reflected in the support for either environmental policies or personal action to prevent personal harm. This final point was then worked to transpose the intention into real action, which was the behavioural dimension.

Finally, tailoring to the need to capture the four intended dimensions, the definition of environmental awareness in study adhered to the definition of Li et al. (2013, p.769), that is, "the the cognition about nature and value of environment-related human behaviour; it is recognized as a new independent ideology, a progressive value, and a sum of social idea, theory, emotion, willingness, consciousness and other concepts which reflects relationship between human and environment".

2.2.2 Conceptualization of Media Coverage

The most important concern for the conceptualization of media coverage was related to the need to define it in a way which is perceivable from the user's (public)

perspective. To the knowledge of the researcher, such attempt was not noticeable during the period of the study. Immediately after this introductory paragraph, several relevant definitions of media coverage were discussed to clarify the nuances among them, which in turn help define media coverage for the specific need of the current study. Later, a different sub-section follows to present the theoretical viewpoints which support the feasibility to conceptualize media coverage from the user's perspective.

2.2.2.1 Perceived Media Coverage: Defining among the Clouds of Definitions

Generally, media effects refer to "the influence of different media content, frequency, and forms of communication on audiences' attitudes, perceptions, and behaviors" (Cox, 2013, p.162). Specific to media coverage, some scholars understood media coverage as equivalent to exposure and attention to media content (Stamm et al., 2000). For some other scholars, media attention or visibility was defined as synonym to media coverage. While media visibility was referred to the amount of visibility that gatekeepers allocated to a message to increase its potential to be diffused in the public sphere (Koopmans, 2004), media attention was conceptualized as a matter of whether or not coverage was gained (Amenta et al., 2009; Barakso & Schaffner, 2006; Ramos, Ron, & Thoms, 2007 as cited in Andrews & Caren, 2010).

Also important to note, though some communication scholars similarly referred to media attention as media coverage, they conceptualized media attention in a more nuanced way by focusing on the prominence of media coverage (Clayman & Reisner, 1998). This was the very same manner visibility was defined by others, in that visibility was referred to the amount and prominence of coverage afforded by the media to any actor, event, or object (Manheim, 2012). Though, there was also other

argument that, for environmental issues, the quantity and saliency of coverage mattered more than the content because audiences are more influenced by media signals than by the content (Mazur, 2009).

However, the current study adopted the corroborative viewpoint in which media coverage was defined interchangeably with media attention and visibility, all of which concurred towards the amount and the prominence of media coverage that an actor, event, or issue receive (Amenta et al., 2009; Barakso & Schaffner, 2006; Clayman & Reisner, 1998; Gamson & Wolfsfeld,1993; Koopmans, 2004; Manheim, 2012). Therefore, to state succinctly the definition for the specific context of this study as also perceived from the user's perspective, media coverage was conceptualized as equivalent to the amount and the prominence of media content on environmental issues presented (to users or public).

2.2.2.2 Media Coverage from the Audience's Perspective

Though most environment media researchers had used traditional content analysis to assess the importance of environmental issues in mass media, such as counting articles, measuring columns, counting the frequency of specific issues or words, and measuring trends in coverage of environmental issues (Anderson & Marhadour, 2007; Antilla, 2005; Brulle et al., 2012; Das et al., 2009; Dudo, Dahlstrom, & Brossard, 2007; McManus, 2002; Hasan, 2007; Rogala, 2011; Sampei & Aoyagi-Usui, 2009), however a perception-oriented subjective measure was more appropriate for the current study. This contention was based on the understanding that the amount of coverage, no matter how sufficiently it is planned to be, does not reflect the quality and significance of the coverage. Such situation was also conceivable in what Shanahan et al. (1997) argued, that the "abundant amount of coverage" often

does not transform automatically into changes in public attitudes (awareness) or knowledge, even when the information is successfully disseminated.

Particular to the current study in which the focal variables of interests (media coverage, environmental awareness) were closely related to the users, media users (audience) who had direct experience of being a paying consumer was believed to be accountable to provide appropriate answers pertaining to the influence and the extent (intensity) to which media had on them.

In essence, media users corresponded to the focal element of "receiver" which comprised within the basic communication process as depicted in Figure 2.1 (McQuail & Windahil, 1993).

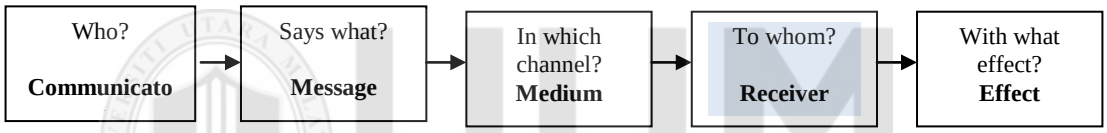

Figure 2.1. Elements within communication process

In fact, every element in the communication model reflects distinct type of communication research which corresponds to their particular type of analysis. The use of direct users as appropriate respondents to provide response on issues related to environment was also found agreeable in such recent work as Wang et al. (2013) which examined environmental issues. Respondents in the research of Wang et al. (2013) had reportedly expressed their outcry of having given limited chance to communicate their perceptions regarding the environmental issues surrounding them.

2.2.3 Conceptualization of Green Values

More extended empirical works specifying on the meaning of green values in the realm of environment are still at the preliminary level, and that a firm conceptual

definition of ‘green values’ is yet to be established in that not much direct understanding for green values exist (Li et al., 2013; Shabani, Ashoori, Taghinejad, Beyrami, & Noor Fekri, 2013; Taufique, Siwar, Talib, & Chamhuri, 2014). There was still a lack of depth in diversity and content (Li et al., 2013).

Particularly, the researcher faced the challenge of yet-to-be precisely defined boundary of ‘green values’ concept. In fact, the essence of green values cannot be easily captured in a narrow definition because it encompasses a range of environmental experiences and concerns which spans across different aspects such as environmental preservation, organic products, sustainable development, holistic health, renewable energy, clean technology, and etcetera.

Given the void, several definitions relevant to environmental care was reviewed to provide foundation for shaping understanding and conceptualizing green values for the current study. Among these were terms such as green consumer (Shabani et al., 2013; Taufique et al., 2014), green value (Qualitel Association Report, 2012), and ‘green perceived value’ (Li et al., 2013, p.767).

‘Green consumers’ was defined as “those who have a tendency to consider the environmental impact of their purchase and consumption behaviors” (Taufique et al., 2014, p. 32). Other researchers referred to green consumers as those “concern about the environment in their purchase behavior, activities associated with the marketplace and consumption habits, and consider the effect of their behavior on the nature environment around them” (Shabani et al., 2013, p.1880).

Several definitions which comprised the importance of being green are also reportedly found in such human activities as construction which directly prompts huge effect on the natural environment (Qualitel Association Report, 2012). The important essence of being green in this field was observable in literature where environmental

health and being green was made a threshold of quality in the construction industry (Qualitel Association Report, 2012). For instance, Chazel (2009, as cited in Qualitel Association Report, 2012) defined green values as "the additional valuation provided via an asset through the simple relationship that binds it to factors of sustainable development" (p.9). 'Green values' was also defined as "the market value of a building labeled as being of good energy, environmental and health quality, trending higher than that of a comparable non-labeled building" (Green Value In Use Group, p.7). The definition of Fauchard (2012, as cited in Qualitel Association Report, 2012) viewed green value as to include energy theme and other environmental concerns such as acoustics, comfort, safety, air quality and accessibility. These definitions covered comparatively broader aspects which did not restrict the meaning to certain states or situations. Inversely, green value was reduced to largely the issue of energy particularly when viewed from the perspective of government.

Some other useful concepts which provided insights for the essence of 'green value' are such term as 'green construction' and 'green restaurant'. For instance, Farahat and Emad Bakry (2012) defined 'green construction' as one that employs ecologically-safe materials and energy-efficient tools which reduce resource consumption and minimize the negative effect on the environment. Likewise, the concept of 'green restaurant' is referred a restaurant which provides green food on their menu and integrates green practices into their service processes in favor of environmental protection and ecological maintenance (Chen, Cheng, & Hsu, 2015).

One noteworthy example which examined green values at a comparatively more comprehensive extent was the work of Li et al. (2013), which was examined in the context of green purchase. The study was one pioneering work which explored the specific content of 'green perceived value' (p. 767) which comprised elements of

self-interest value and altruistic value, of which the former was reflected by 'healthy value', emotional value, image value, and the latter captured environmental value. Li et al's 'healthy value' was defined as the health and safely-perceived benefits that consumers get upon purchasing green products. Emotional value was referred to customers' psychological feeling of being very pleased and proud of themselves as not only their demands are met, but that it also contributes to the environmental quality or protection. Image value was referred to the consumers' need to establish a social image that is positive and to be portrayed as responsible in order to get praised and recognized by others, when they buy or use green products. Environmental value denoted consumers' wish to contribute directly and effectively to the society and environmental quality via purchasing green products.

The definitions above concurred on several elemental insights reflecting the suggestive essence for green values, which are: i) values attached by human to natural environment as well as the importance perceived for its need of protection and sustainability (Farahat &Emad Bakry, 2012; Li et al. ,2013; Qualitel Association Report, 2012), ii) values which reflect the mindfulness and consciousness of environmental impact of one's behavior (Chen et al., 2015; Shabani et al., 2013; Taufique et al., 2014), and iii) values that seek way for a mutual benefit between the natural environment and human, by the virtue of a good, safe, comfortable and quality living for both (Li et al. ,2013; Qualitel Association Report, 2012).

Based on the literature review above, 'green values' was defined as the values that human attached to natural environment which promote mindfulness of the environmental impact of one's behavior, and the very need of natural environment to be preserved, protected, and sustained in a manner that delivers mutual benefits to both environment and human, by the virtue of a good, safe, comfortable and quality

life (Chen et al., 2015;Farahat & Emad Bakry, 2012; Li et al. ,2013; Qualitel Association Report, 2012; Shabani et al., 2013; Taufique et al., 2014).

2.2.4 Conceptualization of Government Role

Examinations of both government role per se and government role from the perspective of user related to environmental issues were still new. Notably, the literature study found no obvious empirical efforts among the previous studies which had been done to define the concept of government role when operationalizing and measuring the construct.

These previous studies took the concept of government role as something that was already understood (Chen & Chai, 2010; Sinnappan & Rahman, 2011; Wang et al., 2013). Other studies defined only certain element or aspect of government role (Qader & Zainuddin, 2010). For instance, Qader and Zainuddin (2010) defined perceived government legislations in the context of green purchasing as consumers' perception that governments should impose strict laws and regulations on environmental pollution. Notably, Qader and Zainudden's definition referred to perceived government legislations which constituted only one aspect of government role.

Considering government role within the realm of environmentalism, the current study was of the stance that, a more encompassing definition of government role that could capture sufficiently wide aspects of government role in environmentalism was more suitable. Therefore, the conceptualization of "government role" related to environmentalism was dealt with care.

At the very core, government is a body of highest authority in a country. Government was deemed the regulator and national policy maker who held authorities to exercise new rules and regulations upon the public when it comes to the benefits for the public (Stoddart et al., 2012). The term 'role' as meant for in 'government role' in

the current study was meant to carry the gist of " functions or position" government has or "is expected to have", as well as the degree of its involvement in a situation or an activity and the effects it produced, according to Oxford Advance Learner Dictionary (Wehmeier, McIntosh, Turnbull, & Ashby, 2005). It also agreed with such synonymous essence of capacity, function, job, purpose, pursuit, responsibility, and involvement (Merriam-Webster Online Dictionary). Therefore, government role for environmentalism in the current study was meant to reflect the authoritative boundary of what a government had, and what it could do and would do in its involvement in matters related to upholding environment well-being such as environmental protection, conservation, preservation, management, sustainability, enrichment, monitoring, and etcetera.

In the dealings with issues related to natural environment within a country, government is the very locus of responsibility; it holds the legislative power to set regulations and lead the country toward pro-environmental behaviour (Stoddart et al., 2012). Particularly, government is directly involved in environmental decision-making. It is empowered to enforce, restrict or ban practices and activities that are destructive to the environment as well as the health of people (Sinnappan & Rahman, 2011). Government also could initiate various policies that give rise to boosting the environmental sustainability, encouraging environmental-friendly behaviors among people, as well as promoting environmentally-friendly production of products in firms through incentives (Chen & Chai, 2010).

In addition, government has the capacity to promote environmental education and effective information dissemination at a greater extent through its legitimate control over information distribution channels like media. For instance, government is able to feed information into a wide range of media outlets and anticipate public

response to the way their policy is formed. In fact, government could influence the amount and the type of environmental information accessible to media institution and consequently influence the public response to certain issues (Happer & Philo, 2013).

Beside the above, it was also crucial to note that government role should capture beyond the legislative elements. Just as Aguilera-Caracuel and Ortiz-de-Mandojana (2013) argued, "governmental policies are not simply legally binding mandates imposed on firms and other polluters, they may also include policies and programs such as voluntary government/industry agreements, joint research and development efforts, government information dissemination programs, grants, subsidies, transfers, taxes, and other program initiatives" (p.16).

Based on the above literature, this study defined government role as enacting environmental related measures by government to prevent, control, protect, and sustain the natural environment. In this definition, government role constitutes the aspects of government-based initiatives and programs or activities related to environment (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Ali & Ahmad, 2012; Ali et al., 2011; Wahid et al., 2011), stringency and enforcement of environmental rules and policies (Sinnappan & Rahman, 2011; Stoddart et al., 2012), environmental education and information dissemination, as well as facilitation of joint research and development efforts (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013) with relevant parties and public at large in promoting sustainable practices and environmental-friendly minds and life styles.

2.3 Hypotheses Development

In this section, theoretical and empirical evidences are pulled together to develop hypotheses. Five hypotheses were put forth. Particularly, the current study hypothesized the direct association between media coverage and environmental

awareness. Further, hypotheses were also developed on the basis of the moderating effects of green values and government role on the direct relationship between media coverage and environmental awareness.

2.3.1 Media Coverage and Environmental Awareness

As far as establishing hypothesis for the potential direct influence of media coverage on environmental awareness was concerned, the literature study had suggested three main strains of relevant supports. They are namely the prominent qualitative role of media, the theoretical insights, and the consistency with past studies that revealed positive association between media coverage and eenvironmental awareness. Each of these strains of support was discussed in sub-sections below.

2.3.1.1 The Prominent Qualitative Role of Media

Past literature had demonstrated that one of the ways to deepen and heighten environmental awareness among public, specifically to tackle environmental issues, was through the use of media. Media is assumed to potentially carry such task because media is an encouraging platform to educate public. In general, media contributes "to more fundamental, deeply-held beliefs about the health of the environment, the ability of the environment to heal itself, the importance of environmentalism, the efficacy of individuals to confront environmental problems, and so on" (Shanahan et al., 1997, p. 306).

Specifically, mass media has been claimed as a main source of public information concerning environmental issues (Aoyagi-Usui, 2008; Haron et al., 2005; Wakefield & Elliott, 2003), and it "serves as a fundamental means of disseminating information, sending messages to 'massive audiences' about many issues, including the environment" (Hancock & MacCallum, 1971, p.2, as cited

Compas, Clarke, Cutler, & Daish, 2007). Media is also able to mobilize discourse about the environmental issues (Hessing, 2003). Such media discourses, in turn, "help to shape and set the parameters of discussion and understanding of environmental issues" (Hansen, 2007, p.50).

Essentially, public to a great extent relies on media to understand the world they have little direct experience with, such as the natural world at stake (McCombs, 2013; Nelkin, 1995; Shanahan et al., 1997). Notably, while some environmental issues are visible and tangible and thus public easily become aware of them, many others are neither tangible nor visible without media casting lights on them (Beck, 1992). In fact, environmental reporting has been coined as "one of the media's most important watchdog duties" (Moore, 2001, p.325). Likewise, media holds the 'gate keeping' function with which they control how much and what type of information is made accessible to the public (Hessing, 2003). Therefore, media assumes the ability to influence the public's understanding about certain issues, such as environmental issues.

Particular for the Malaysian setting, the heightened roles of mass media discussed above are also well reflected in the fast-growing mass media development in Malaysia (Daud, 2008; Salman, Ibrahim, Abdullah, Mustaffa, & Mahbob, 2011). For instance, the impact of mass media on public has also been magnified with the emergence of online news media resultant from the transformation of media system in Malaysia. While the colorful features and borderless property offered by online media has extended convenience and made news content appears more attractive to the mind and psychology of Malaysian readers (Daud, 2008), the online mass media has become the main source of information for young active audiences of Malaysia (Ahmad et al., 2011).

Likewise, both the reachability of mass media and the apprehensivity of content in Malaysia are encouraging. In 2008, more than 94% of adults are reached by TV, 83% by radio, and 73% by newspapers (Idid & Kee, 2012). Further, they are also available in various languages like namely in Malay, Chinese, Indian, and English (Idid & Kee, 2012). In fact, a majority group of Malaysians would not face difficulties in understanding the content reported in the mass media, as Malaysians recorded a considerably high literacy level. Its adult literacy was reported as rising to 95.64 % in 2015 (UNESCO Institute for Statistics, 2015).

In fact, it is worth-mentioning that such encouraging development of mass media in Malaysia is also attributable to the active socioeconomic change within the country which requires the use of mass media for developmental communication. Further, the constructive impact of mass media in Malaysia can also be traced back to merits related to the Malaysian mass media having been cultured to comprise both educational and informative intention in their role as mass media (Friedman & Friedman, 1989).

While the potentials of informational and educational roles of media has long been heightened (Harring et al., 2011; Sampei & Aoyagi-Usui, 2009), it is recognized that the role of mass media in Malaysia is not only seen as informing public but also educating public on the issues of public interest as well (Friedman & Friedman, 1989). This is resultant from the reason that, it is the indigenous philosophies, cultures and traditions which play a significant role in defining media role in Asian. Therefore, one primary functions of the press in Asia is supporting the efforts at nation-building and to be a partner in national development (Friedman & Friedman, 1989).

With the above discussion highlighting the merits mass media has on informing and educating, it is of certain promising extent that media coverage on environmental issues could promote environmental awareness among the public, and that issues of environment would not go unnoticed or is dealt with little concern.

2.3.1.2 Relationship between Media Coverage and Environmental Awareness

While the above discussion of the prominent role of mass media is suggestive of the constructive effect media coverage could cast on the awareness of environmental issues, both empirical and theoretical evidence also exists. However, as literature study informed, the researchable void for the association between media coverage was that, the strictly exact association between media coverage and environmental awareness had not received much empirical research attention (Brulle et al., 2012; Chokriensukchai & Tamang, 2010; Sampei & Aoyagi-Usui, 2009). Therefore, the empirical supports for the proposed relationship between media coverage and environmental awareness were instead inferred from findings of past studies which examined the association between media coverage studied as various media types and public awareness across other issues such as health and politic (Agbatogun, 2009; Gollust et al., 2013; Lee et al., 2013). In addition, such empirical nascence was also supported by theories.

Among some of the very few exactly environmental scented media coverage-and-awareness studies, the studies of Brulle et al. (2012), and Sampei and Aoyagi-Usui (2009) had revealed newspapers and broadcast coverage as correlated significantly with public concern and awareness in issues of climate change and global warming in the United States and Japan. Specifically, Sampei and Aoyagi-Usui (2009) investigated the influence of the media coverage on public awareness of global warming issue in Japan. Using a sample of 2000 Japanese people at 140

sampling points, the researchers provided statistical evidence of the positive correlation between mass media coverage and public awareness. Specifically, a remarkable increase of newspaper coverage was found to give rise to public concern. Similarly, Brulle et al.'s (2012) study examined the factors that influenced the American public concern about climate change. The study collected data from 74 separate surveys from January 2002 to December 2010. In the study, the climate change was captured on the basis of extreme weather events such as extreme temperature and severe drought. The results showed that media coverage of climate change was among the most important factors affecting public concern about climate change.

In another instance, Chokriensukchai and Tamang (2010) examined the influence of media exposure on the youth's awareness of global warming phenomenon. Interpreted on the basis of agenda setting and statistical evidence from questionnaires administered to 2,500 middle school students, the study unearthed a positive association between the exposure to media and awareness on global warming issue amongst youths in Thailand.

Likewise, Shanahan et al. (1997) based their study on analyses of the 1993 and 1994 General Social Survey and worked from the theory of cultivation to examine the association between exposure to television messages and various aspects of belief and knowledge related to environment. The results of their study showed that television viewing has a positive relationship with the general concern about the state of environment.

Take some specific instances for empirical inference of past studies. Agbatogun (2009) examined the extent to which the perceived coverage of print media and broadcast could predict the level of teacher's awareness and participation

in the political activities in Nigeria. The study which employed multistage sampling procedure found out that the use of print media and broadcast coverage in raising teacher's awareness had a positive combined effect on teacher's participation in political party activities and electoral process.

A similar trend of inference was also observable in Gollust et al.'s (2013) study. The researchers examined the association between media coverage, as measured in volume of news media, and awareness towards Human papillomavirus (HPV) vaccine among adults in United States. Gollust et al. used nationally representative sample of adults' respondents and data on state-specific news coverage. The finding revealed evidence of significant and positive relationship between media coverage and adults' awareness of HPV vaccine.

Likewise, Kim, Scheufele, and Shanahan (2002) examined media coverage on the issue of development of Southwest Park in the city Ithaca, New York. It was concluded that media coverage of certain aspects of the issue exerted significant influence on the salience of these aspects in public cognition. This implied that the salience of an issue in media coverage could have its salience in the minds of public related to the issue of interest. This view is also in part supported by some recent studies which contended the likewise results of public opinion as a reflection of the prominence of media coverage (McCombs, 2013).

Beside all the above highlighted potential positive impact of media coverage on environmental awareness, several noteworthy research gaps which called for more empirical evidence for the relationship between media coverage and environmental awareness are also creditable. Among others, the literature study found many among the more recent studies on media coverage and environmental awareness are still largely descriptive in nature, and that the issue was examined at the preliminary level

(Do et al., 2015 ; Enobakhare et al., 2013; Keinonen et al., 2016; Kushwaha, 2015; Rahim et al., 2012). In fact, a number amongst these descriptive studies had also called for more empirical examination for the relationship between media coverage and environmental awareness (Enobakhare et al., 2013; Keinonen et al., 2016).

For instance, such recent researcher as Manuti (2013) indeed had pin-pointed highlighted that few studies had examined the "actual relationship" between mass media coverage and public's awareness of climate change (p. 66). Still, other recent researcher such as Keinonen et al (2016) had recommended that the role of media should be included in models concerning the complex relationship between perceptions, attitudes, concerns, and behavior and participation. Likewise, Enobakhare et al. (2013) who examined public awareness and knowledge of media campaign on environmental issues in south-south states Nigeria, had highlighted that media should not down play issues of environmental hazards; they should indeed play the agenda function by emphasizing on the effects on environmental degradation.

Furthermore, while there were a considerable number of discussions on media coverage as being examined in relation to public awareness across various other areas such as politics (Agbatogun, 2009) and health (Gollust et al., 2013; Lee et al., 2013), the literature study did not notice comparatively as much works which exactly relate media coverage to awareness in the field of environmental issues. This very point has indeed been highlighted by very recent researchers such one as Khan (2016). Likewise, it was also noticed that the correlation-type of studies examining the specific relationship between media coverage and environmental awareness, while not many, were mostly conducted in the setting of developed countries like Japan and those of the western (Arlt et al., 2011; Brulle et al., 2012; Laurian, 2003; Mikami et al., 1995; Sampei & Aoyagi-Usui, 2009). In fact, not much studies of

mass media and public awareness in the specific context of Malaysia is noticeable (Rahim et al., 2012); so was it for the Asia region generally (Mikami et al., 1995; Sampe & Aoyagi-Usui, 2009; Zhao, 2012).

Above all, the positive association between media coverage and environmental awareness is also consistent with Theory of Agenda Setting and Theory of Framing. On the one hand, Theory of Agenda Setting explains the process through which media devotes relevant attention to a certain issue in news coverage by influencing the rank order of public awareness of the issues and their attribution of significance to it (McQuail, 1994). As such, media can make certain environmental issues (selected agenda) appeared more significant compared to other issues reported.

On the other hand, Theory of Framing provides an explanation as to how media is able to urge users to think in a certain way about the content of information they disseminate (McQuail, 1994). This implies that media can affect users' inclination on a certain issue and hence their disposition toward environmental awareness. In fact, the current study contended that greater effect can be expected when both theories are applied in progression (versus each one alone), one after another, having the effect of the former made incremental by the latter. In this view, both theories uphold the persuasive ability of media in exacting users' attention to a specific issue by first directing their focus to a selected agenda, and then influence them to think in a certain way.

Despite the supports presented for the positive impact of media coverage on environmental awareness, certainly, the literature study had also discovered some findings of the reverse, which were suggestive of inconsistent and mixed results for the relationship between media coverage and environmental awareness. Among

others, negative and weak relationships was found (Shay-Margalit & Rubin, 2016; Suhonen, 1993; Mikami et al., 1995). For instance, using questionnaire surveys responded by 589 students sampled from among Israeli schools, the study by Shay-Margalit and Rubin's (2016) found a negative relationship between engagement with electronic media and environmental attitudes among students. The study was carried out to investigate the effect of the reform made in environmental education program on environmental attitudes of students in Israel. The schools sampled included regular schools, "green schools" and persistent green schools".

Besides studies of negative relationship, studies with mixed results were also observable. Some among these studies even discovered mixed result within one sole particular work (Arlt et al., 2011; Shanahan et al., 1997). For instance, while Arlt et al. (2011) found television and informational online media cast positive impact on public awareness of climate problems in Germany, a negative association was also concurrently found between newspaper coverage and public awareness. A similar but distinct pattern of mixed results was also evident in Mikami et al. (1995). Mikami et al. examined the influence of television and newspaper's coverage on the awareness of global environmental issues among the Tokyo residents. While the study found gradual and cumulative effect of newspapers coverage on public awareness, the study however only managed to report a weak relationship between television viewing and public awareness.

While inconsistent and mixed results exist and not meant to be neglected for equal research attention, the current study took the stance to support the positive impact of media coverage on environmental awareness, as indicative in the majority empirical research and theoretical supports. The inconsistent findings in fact informed the researchability of possible moderating variable(s) which was (or were)

hopeful to add explanation to the direct relationship between media coverage and environmental awareness.

To this end, based on both empirical and theoretical evidence of the potential positive association between media coverage and environmental awareness as inferred from existing studies of such relationship in other areas, and the research gaps identified among some recent studies, the following hypothesis was proposed.

H1. Media coverage is positively and significantly related to environmental awareness.

2.3.2 The Potential Moderating Variable: Green Values

The potential of green values as a moderating variable in the specific context of pro-environmental behaviour (environmental awareness) in the current study could be supported empirically in three important views. Firstly, by underlining the positive association between green values and environmental awareness empirically and theoretically; secondly, by heightening the vigor of "value" as to its inherent characteristics and potentials in influencing people's attitudes and behavior, and hence green values in affecting attitudes and behavior towards environmental-friendly behaviour; thirdly, by highlighting the empirical evidence of green-oriented values as being examined as an intervening variable (moderator and mediator) in past studies. Literature of the mentioned above views are discussed in separate sub-section below.

2.3.2.1 Relationship between Green Values and Environmental Awareness

Given that the exact association between green values and environmental awareness are still nascent in the literature of media and environment communication, the empirical evidence of positive relationship between green values and environmental

awareness can be traced back to past research which demonstrated positive relationship between green-related value and environmentally-friendly behaviours.

For instance, Lasuin and Ching (2014) found the concern of self-image significantly influenced green purchasing intention among the university students in Kota Kinabalu, Malaysia. In their study, self-image was defined as a value of how an individual perceived himself or herself as acting in environmentally friendly manner, and thus denoting green values. Such examination of self-image as a type of values that cast potential bearing on environmental behaviors is also consistent with Li et al.'s (2013) work which subsumed self-image as one dimension of self-interest values for perceived green values. Similarly, Mirosa, Lawson, and Gnoth (2011) found that values which were related to the achievement value ranked the highest and most influential for efficient energy-saving behavior in domestic homes. The researchers further concluded that campaigns which capitalized on achievement values such as capability and intelligence in their appeals tend to be more effective than those that used other types of appeals.

Another noteworthy empirical support for the significant positive relationship between green values and environmental awareness includes the examination of the effect of values with people's willingness to reduce personal car use (Nordlund & Garvill, 2003). In Nordlund and Garvill's study, self-transcendence and ecocentrism were found significantly contributing to explain such pro-environmental behaviour as personal car use reduction. Likewise, anthropocentrism was found to influence the awareness of environmental consequences to humankind. In the study ecocentrism was conceptualized as the belief that environment must be protected for its intrinsic value; while anthropocentrism was defined as the belief that environment should be protected for its contribution to human welfare.

Likewise, past study also found biospherically-oriented people more willing to donate to environmental organization (De Groot & Steg, 2008). This result is consistent with the positive association found between ecocentrism and personal car use reduction in the study of Nordlund and Garvill above. In fact, ecocentric and biospheric values carry very close content in definitions. In the like interpretation, De Groot and Steg's study also revealed a positive relationship between altruistic value and people's willingness to donate to humanitarian organizations. This significant finding was also likened to that of the significant influence of anthropocentrism on the awareness of environmental consequences to humankind in Nordlund and Garvill's study above. The empirical supports put forth above all boil down to Poortinga, Spence, Whitmarsh, Capstick, and Pidgeon.'s (2011) view that, people's understandings and attitudes are truly strongly influenced by their enduring values and existing ideologies.

Besides the empirical support, the positive relationship between green values and environmental awareness could be supported the theory of Value Belief Norm. The theory postulates that values have an influence on the awareness of environmental consequences (Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Such theorization was also found in empirical works supporting the underlying relationship between people's values and environmental-related concern and awareness (Corbett, 2005; Gärling et al., 2003; Mirosa et al., 2011; Nordlund & Garvill, 2003; Poortinga, Steg, & Vlek, 2004; Schultz et al., 2005; Schultz & Zelezny, 2003).

In some studies within the specific context of Malaysia, green values was found to have some bearing on the recycling and green purchasing behavior of Malaysians directly (Latif, Omar, Bidin, & Awang, 2012; Shahnaei, 2012) and indirectly (Tan, Hong, & Lam, 2015). Take an instance. Researchers such as

Shahnaei (2012) investigated the impact of the individual differences on such environmentally-friendly behavior as green purchasing amongst the Malaysian consumers. The study revealed positive association between green-related values which impart within the individual differences and green purchasing behavior of the Malaysian consumers.

In another likewise instance, the study of Latif et al. (2012) had revealed environmental value as a significant predictor of recycling behavior of people living in the urban areas of Kuala Lumpur and Kinabalu. As environmental value is one of the elements of green values and behavior is also one of the environmental awareness dimensions, it implies that green values could have potential impact on other environment-related behaviors and thus environmental awareness issue at large.

In one particular work of Tan et al. (2015), green values was found to have an indirect effect on green purchase behavior. Tan et al.'s study based on 600 respondents in Klang Valley Malaysia discovered that the influence of environmental "green" values on green purchasing behavior is mediated through environmental attitude as well as through a combination of both environmental attitude and green purchase attitude. The findings while in part corroborated the above past findings regarding the potential positive effect of green values on environmental behavior, the intervening through the environmental attitude also partly demonstrate how environmentally-related concern could be pivotal mechanism in encouraging environmental-friendly behavior like green purchasing. Further, it is important to note that environmental awareness indeed, in a broad sense, also encompassed environmental attitudes.

All the above discussion on the impact of green value was truly consistent with the view that values serve as an organizing structure of behavior (Schultz &

Zelezy, 2003). While good-willed values tend to lead to enhance environmental-friendly behaviors, the reverse demonstrates negative impact. For instance, the study of Schultz and Zelezny (2003) found the values of self-transcendence being positively associated with environmental behaviour, while values of self-enhancement were negatively correlated.. Self-transcendence is the setting of life goals that transcend beyond the mere individual interest; instead, it promotes the interest of other people, plants, animals and the natural world (Schwartz, 1994). On the other hand, self-enhancement is of the reverse interest, as its life goals is to promote own interests regardless of others' interests (Schwartz, 1994).

Findings of such above view were also observed in Schultz et al. (2005) cross-cultural study. The study revealed that self-transcendence, particularly universalism dimension, remained the strongest predictor of environmental concern, with or without environment items included in the measurement. Conversely, the study found negative relationship between self-enhancement and environmental concern.

Towards this end, the literature above has presented ample evidence of the positive relationship between green-related values (such as egoistic, altruistic, biospheric, self-transcendent, self-enhancement and achievement values) and environmental related concern (such as environmental concern, awareness of environmental consequences, participation in energy-saving, personal car use reduction, etc). These evidences of the positive relationships shed lights on the potential of green value to give rise to strengthen the impact media coverage has on environmental awareness.

2.3.2.2 Potentials of Green Values: The Embodiment of Value

In addition to the literature above, the current study also believed that the very essential foundation on which "green values" could affect people's attitude and

behavior towards concerns for environmental is also reasonably explained by the intrinsic appreciation inherent in the meaningfulness of 'value' itself in people's life.

Before further discussion, it is noteworthy that the fundamentals of value in the realm of environment had indeed been long recognized (Schultz et al., 2005; Stern, 2000). In Stern's (2000) work, value was viewed as the basis for environmentalism, whereby environmentalism was seen as the propensity to take action with pro-environmental intent. Likewise, according to Schultz et al. (2005), values provide the lens through which public understand environmental problems, evaluate the aspects of environmental problems that they are more concern about, and perceive the actions as reasonable solutions to tackle these problems.

Values are essential in people's life. Values have effects on what people attend to, the knowledge that turns to be more accessible in people mind, the importance that people attribute to implication of their choices and actions, the evaluation of various aspects of a given situation, and the alternatives that are available to them (Steg et al., 2014). People prioritize various values differently, and that different people build their behavioural choices in specific situation based on the values that they consider to be the most important (de Groot & Steg, 2009; Steg et al., 2014). However, such researchers as Schultz and Zelezy (2003) contend that although inconsistence are often found in people life goals, values serve as an organizing structure of behavior.

Of more importance, values affect how attitudes and behaviour about a specific object take shape. Because values are more stable and thus occupy more important position than attitudes in one's cognitive system, values therefore leads to a more stable and inner-oriented comprehension of behaviour (Kamakura & Novak, 1992). Indeed, this view is also conform to the Behaviour Decision Theory, which

claims human behaviour, to a large extent, governed by values (Becker & McClintock, 1967). The theory also asserts that values influence people's beliefs about a given situation, which in turn affects personal norms which ultimately lead to intention or behaviour.

In other life-related perspective, 'values' has been maintained as an important guiding principle in life. For instance, such researchers as Rokeach (1973) conceptualized values as important life goals or standards that serve as guiding principles in life. Likewise, Schwartz (1992) defined values as "desirable trans-situational goals varying in importance, which serve as a guiding principle in the life of a person or other social entity" (p.21).

The above discussions imply that values prevalent in a given society have important implication on the sensitivity of people towards what happens around them or in a given situation. As much as the ability of value in driving positive implication on people, thus does the values of green concern for people's behavior towards environment. It was in the lights of such constructive building block of values that the current study sees the relevance and practicality of green values to add explanations that give rise to the issue of environment.

2.3.2.3 Green Values Previously Studied as an Intervening Variable

As far as the knowledge of the researcher is concerned, there was no empirical evidence that green values had been studied as a moderating variable. However, it has been examined as a mediating variable (Li et al., 2013), though rare. According to Hayes (2013), a mediating variable can also be a potential moderating variable, and vice-versa. Hence, lending support to the hypothesized moderating potential of green values in this study.

Take an instance in which ‘green values’ was examined as a mediator. The study of Li et al. (2013) examined the mediating effect of ‘green perceived values’ as a mediator on relationship between environmental awareness and green purchasing behaviour. Using 349 questionnaires collected through convenient sampling in an online survey, a significant mediation was found. In the study, ‘green perceived values’ were reflected by exemplary item gist such as the initiatives of improving ecological environment, reducing pollution to environment, encouraging others to act green, building pro-environment self-image, and etcetera.

Supplemental empirical buttress for the moderating potentials of green values was also traceable in works where green-oriented value was examined and found as a significant moderating variable in studies of environmental awareness. Take an instance. Using data collected from a random sample of 524 car owners in a metropolitan area of Sweden, Gärling et al. (2003) found ‘social value orientation’ significantly moderated the relationship between pro-environmental behaviour intention and awareness of environmental consequences. In Gärling et al.'s (2003) study, ‘social value orientation’ comprised green-oriented values of pro-self and pro-social. The definitions of pro-self and pro-social values are parallel to those of the egoistic (Stern & Dietz, 1994) and altruistic values (Schultz, 2000) examined in other environmentally related studies, respectively. While pro-self values referred to the emphasis that people placed on their own outcome (e.g., laws to protect the infringement on the personal freedom and the awareness of environmental consequences for themselves), pro-socials values referred to the emphasis that people placed on the joint outcome (e.g., harm to other people and nature).

Furthermore, existing evidence suggests that in order to make a subject of concern more meaningful and relevant, communication requires to take into

consideration the people's values and worldviews (Martyniak, 2014). Martyniak contended that, appealing to different set of values had the potentials to engaging public of a wider range more effectively. In the more specific concern of environment, Poortinga, et al. (2011) found that people's values and exiting ideologies influenced their understanding and behavior related to climate change issue. This view was also agreeable with Schultz and Zelezny (2003) that an appeal should be framed in a way that resonates with self-enhancing values of people to generate an effective environmental message.

Given the forgoing discussion, the study forwarded the following two hypotheses.

H2: 'Green values' is positively and significantly related to environmental awareness.

H3: 'Green values' positively and significantly moderates the relationship between perceived media coverage and environmental awareness.

2.3.3 Potential Moderating Variable: Government Role

To support empirically the potential of government role as a moderating variable in the specific context of the pro-environmental behaviour, past literature was discussed in the line of reviews demonstrating: (i) the relationship between government role and environmental-friendly behaviours (to proxy environmental awareness), (ii) Government role and its contextual importance in giving rise to pro-environmental behavior.

2.3.3.1 Relationship between Government Role and Environmental Awareness

Although the literature of the exact direct association between government role and environmental awareness was scarce, the possible positive association proposed between government role and environmental awareness can be traced back to past

studies which demonstrated significant positive association between government role and environmentally-friendly behaviors or attitudes such as green behavior intention or green purchasing behavior (Sinnappan & Rahman, 2011), green products purchase (Chen & Chai, 2010), and green purchase intention (Mei et al., 2012).

Take observations of some specific examples. The study by Sinnappan and Rahman (2011) had revealed government role as one important predictor of green purchasing behaviour, and that consumers believed that government also played an important role in building green purchasing behaviour among the people. This finding was also similar to Chen and Chai's (2010) study, which found consumers' attitude of government's role and their personal norms significantly related to green products purchase. Also, Mei et al. (2012) found significant influences of governmental initiative, environmental knowledge, environmental attitude, and peer pressures on green purchase intention among the Malaysian consumers. Given that the consumer's behavior (behavioral environmental awareness) and intention (conative environmental awareness) are dimensions embedded within the environmental awareness construct, it was therefore commendable that customer's attitude toward government role in environmental issues is a main determinant of people awareness on issues of environment.

Besides the above, several evidence in the specific context of Malaysia worth-highlighting. In one of the instances, Rahim et al.'s (2012) work had reported youths as having positive perception towards green advertising campaigns propagated by the government, which led to their resultant awareness on green living. The researchers suggested that improved message delivery, creativity and information in governmental green advertising campaigns would encourage the Malaysian youths to respond to green living in practice. While green advertising

denoted to “advertisements that promote products, services, ideas or organizations’ ability to help or reduce environmental harm”, green living was “an attempt to carry out life in an eco-friendly, environmentally responsible manner, and, an attempt to minimize the size of our ecological footprint” (Rahim et al., 2012, p.47).

In another instance of the Malaysian context, the study of Hosseinpou, Mohamed, Rezai, Shamsudin, and Abd Latif (2015) investigted the impact of go-green campaign organized by the Malaysian government to expose public to environmental issues, and to inculcate the awareness of green behaviors among Malaysian public. The result revealed strong willingness to change behaviors in accord to environmental among public of higher income and education. This finding also further led researchers to conclude that government should apply comprehensive rules and popularize campaigns in both urban and suburban areas for both lower and higher educated people.

There were also some qualitative and descriptive studies which provided evidence to proxy the relationship between government role and environmental awareness. While the findings of this line of study were suggestive, it was note-worthy that much research involving government role in environmental issues evolved around green products. The role of government as associated to environmental awareness in other environmental issues is less investigated.

To date, the current study found only one study which examined government role with public concern about watershed development in China. The study revealed that, though there was no clear consensus among the public on the efficient way of managing the watershed, the public while calling for better mechanisms for public participation, also viewed the cooperation between public and the governmental agencies as crucial (Wang et al., 2013). Though a qualitative account, government

role was seen as having important impact on public concern and awareness of watershed protection.

In another similar instance, the American public survey by SC-Johnson and GfK (2011) was carried out to rank who among the seven groups should be held responsible to take lead in addressing environmental issues. The federal government was ranked first. The study also reported increased recycling rates among the Americans as resultant from the development of curbside recycling programs and financial incentives such as deposits for bottles and cans launched by the government.

Therefore, by probing the proxies of government role and environmental awareness, some insights were gained to support the hypothesized direct relationship between government role and environmental awareness.

2.3.3.2 Government Role and Its Contextual Importance

Besides the empirical associations discussed in the section above, the potentials of government role as a potential moderator in inducing pro-environmental attitudes and behaviors could also be supported by literature highlighting the role of government from the contextual (qualitative) perspective.

Though varied views exist about the driving forces that deal with environment, it was evident in past studies that people perceive preservation of the environment as a main responsibility of government (Curtin & Rhodenbaugh, 2001; Polonsky, 1994; Stoddart et al., 2012; Tsen, Phang, Hasan, & Buncha, 2006). The role that government could play in environmental conservation and sustainability is essential. The government is the locus of responsibility for addressing environmentally-related issues within a country, because government has the power to set regulations and lead companies and citizens toward pro-environmental

behaviour (Stoddart et al., 2012). As similarly as Hepburn (2010) noted, no environmental conservation can be successful without government intervention.

According to Sinnappan and Rahman (2011), government can enforce, restrict or ban practices and activities that are harmful to the environment, as well as the health of people. The researchers further contended that enforcing environmental-prioritized rules and regulations would compel individual consumptions and companies' production within reasonable environmental considerations. At the same time, the researchers were of the view that campaigns and environmental education that could be given to the public by government would also enhance or increase people awareness and attitudes, which in turn change their behaviours and practices.

Similarly, Ali et al. (2011) argued that the shaping of environmental attitudes among people may require that government take initiatives to attract or encourage people to care for the environment. Such notion of government role could be observed in government incentives such as tax exemptions, subsidies and provision of better investment opportunities to environmental-friendly businesses which promote green products and practices among people.

Among the green-related steps, policies and campaigns could be formulated by government in ways that support the raising of public awareness and concern towards environment (Ali & Ahmad, 2012). For instance, in promoting green consumption practices among the Malaysian public, Wahid et al. (2011) suggested that government could launch campaigns to promote public awareness of eco-labels, as it is proven by the study that awareness and trustfulness of eco-labels influence significantly green purchase behaviour among the public.

Further, in particular to the Malaysian context, the Malaysian government has publicized a variety of strategies to implement sustainable consumption and

development. In this view, the Malaysian government has initiated various policies to boost the environmental sustainability by encouraging people to buy green goods and commodities, as well as providing incentives to firms which produce environmentally-friendly products (Chen & Chai, 2010). In addition, the Malaysian government also adopted social advertising as a tool to educate and raise environmental awareness among the public (Haron et al., 2005).

Apart from the intensive programs that were also undertaken by the Malaysian government to achieve a green country status, the government has also been seriously involved in many green projects, such as those promoting green technology, green business, and green consumerism among Malaysians (GreenTech Malaysia, 2010, as cited in Aman, Haru, & Hussein, 2012).

Likewise, the Malaysian Green Technology Policy is an instance of the nation's commitment to the vision of a 'Green Malaysia' reality. The Green Technology Policy outlined five strategies to implement the 'Green Malaysia' framework, namely, "strengthening institutional frameworks, providing a conducive environment for green technology development, intensifying human capital development in green technology, intensifying green technology research and innovations, as well as ongoing promotion and public awareness" (Desan, 2009).

Further, relevant to the promoting and encouraging actions discussed above, cooperation government established with media institutions could indeed bring environmental preservation to a greater level. For instance, the case study from Bulgaria demonstrated government's ability to work closely with media to build its capacity through regular press conferences and large public awareness campaigns (UNEP, 2009).

The above view was conceivable because government could influence the amount and the type of environmental information accessible to the media and consequently influence the public response to certain issues. As policy makers, government is able to feed information into a wide range of media outlets and anticipate public response to the way their policy is formed (Happer & Philo, 2013).

In fact, government provision of environmental information is very powerful and effective tool to set the environmental agendas or priorities in a country (Stephan, 2002). For instance, government disclosure of pollution information was found to be correlated with media coverage, which in turn determined the importance attached to these issues by the public, and thus facilitate the collective action (Hamilton, 1995; Lynn & Kartez, 1994). Therefore, the impact of government authority in setting environmental agendas goes beyond influencing media alone, but it indeed transcends the possible impact media (coverage) could have on the public awareness.

In sum, the discussions above also in part support Happer and Philo's (2013) view of government role in matter related to media and audience, in that it was contended that, the correlation between media content and audiences is not singular or one way. Based on the joint empirical supports as to the relationship between government role and environmental awareness as well as the contextual importance of government (in general and specific context of Malaysia) in issues of environmental well-being, the following two hypotheses were advanced.

Particularly, a standalone hypothesis was meant to be set for the direct relationship between government role and environmental awareness (hypothesis H4), given the newness of moderating effect proposed for government role.

H4: Perceived government role is positively and significantly related to environmental awareness.

H5: Perceived government role positively and significantly moderates the relationship between perceived media coverage and environmental awareness.

2.4 Research Framework and Relevant Theories

Based on the literature review and the hypotheses put forth in the discussion above, presented in Figure 2.2 is the proposed research framework illustrating the hypothesized relationships. As demonstrated in Figure 2.2, perceived media coverage (MC) is the independent variable and environmental awareness (EA) the dependent variable. Perceived government role (GR) and green values (GV) are the two moderating variables on the main relationship of perceived media coverage and environmental awareness.

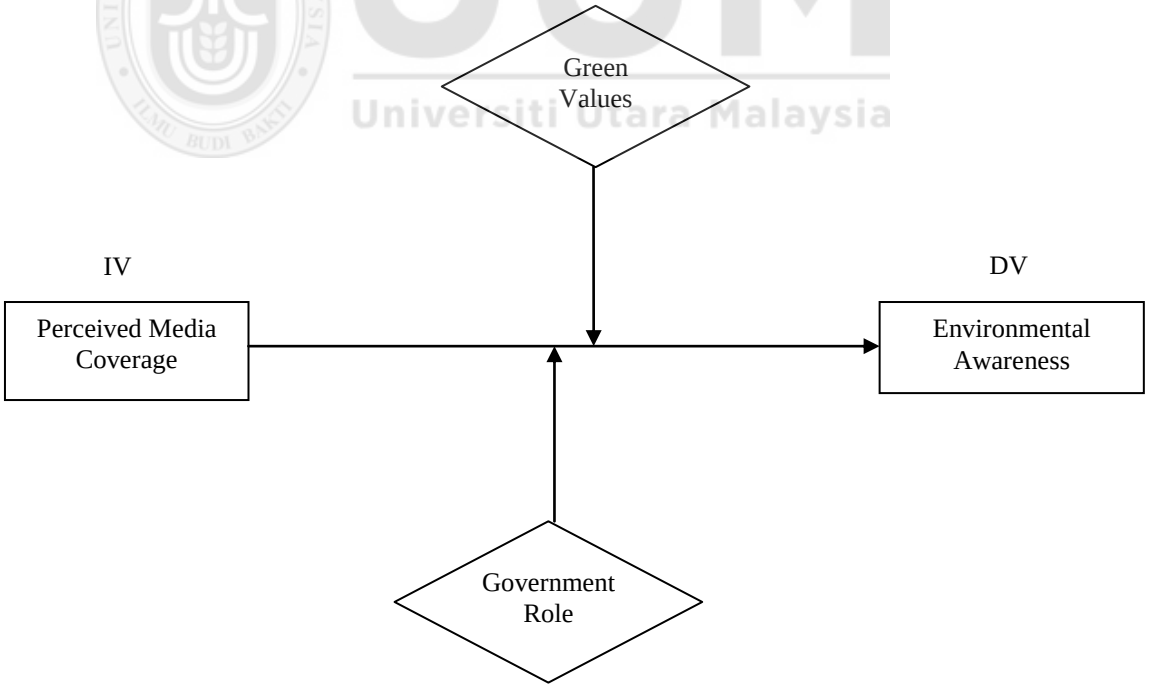

Figure 2.2. Research framework

Four main theories were used to provide theoretical foundation for the relationships hypothesized, namely agenda setting theory, framing theory, institutional theory, and limited effects theory.

Agenda setting theory and framing theory together explain the theoretical possibility of the main direct relationship between media coverage and environmental awareness. Agenda setting theory explains the process through which media devotes relevant attention to a certain issue in news coverage by influencing the rank order of public awareness of the issues and their attribution of significance to it (McQuail, 1994). In the like but more meticulous manner, framing theory provides an explanation as to how media is able to urge users to think in a certain way about the content of information they disseminate (McQuail, 1994). The above theoretical view implies that, media can make certain environmental issues (selected agenda) appeared more significant compared to others through agenda setting; media can also, through framing process, plays a critical role in influencing users' perception of the environmental issue and their disposition toward environmental awareness.

Both theories uphold the persuasive ability of media in exacting users' attention to a specific issue by directing their focus to a selected agenda, and influence them to think in a certain way. Therefore, as far as media's impact on users is concerned, the embodying essence of both theories lays a constructive ground to support the positive impact of media coverage on environmental awareness.

Next, the inclusion of green values and government role as moderating variables onto the main direct MC-EA relationship of research framework could be understood from the perspective of institutional theory. According to the institutional theory, the regulatory and normative dimensions are two important national-level concerns (dimensions) that determine how different nations respond to

environmental issues (Kostova et al., 2008; Kostova & Roth, 2002). Specifically, the regulatory component refers to the rules and regulations in a particular nation or setting that promote certain practices or behaviours, and restrict or ban others (Kostova, 1999). The normative component represents the cultural values, goals of the society, and beliefs that determine the legitimacy of the displayed behaviour (Kostova & Roth, 2002). This view suggests the substantial importance of government and citizens (public) as significant observers of what happen in a country regarding environmental issues, and hence are possibly asserting a pivotal bearing on the environmental awareness issue. In fact, federal government was ranked first followed by individuals, and then business and industry in a survey which investigated who should take the lead in addressing environmental issues (SC-Johnson & GfK, 2011).

Finally, limited effects theory provides explanation for the possible positive outcome of the moderating effects of both green values and government role on the relationship between media coverage and environmental awareness. According to limited effects theory, individual's differences pertaining to their cultural givens, cultural resonances, and attitudes towards objects would influence the extent to which media can influence public (DeFluer & Ball-Rokeach, 1989). The theory implies that the potential bearing of green values of people on environmental awareness is dependent upon the individual differences in the mentioned above aspects, which in turn influences the extent to which the effect of media coverage contingent upon them. Therefore, predicting the moderating potentials of green values of people on the impact media coverage could assert on environmental awareness.

Likewise, the workability of government role as a moderator in strengthening media's impact on environmental awareness also conforms to limited effects theory,

as it could imply that any possible effect of government role in environmental issues is dependent on the differences in their preference in lights of their cultural givens, cultural resonances and attitudes towards the objects, which in turn influences the extent to which government's interaction with media could influence the public. Therefore, a government with a more pronounced concern for environmental issues would deal more earnestly should chances exist for them to preserve the environment through interaction with media, which in turn affect people's awareness. Hence, the potentials of government role in asserting a moderating effect on the relationship between perceived media coverage and environmental awareness.

2.5 Summary

This chapter presents the literature relevant to the variables examined in the study. In particular, the chapter discusses the empirical and theoretical evidence pertinent to the relationship between media coverage and environmental awareness, as well as the moderating effects of green values and perceived government role on this relationship. Following this, research hypotheses are developed. Then, research framework is presented along with explanations of theories which support the hypothesized relationships. The chapter ends with a brief chapter summary.

CHAPTER THREE

RESEARCH METHODS

3.1 Introduction

The current chapter comprises the discussion and justifications pertinent to research methodology. It explains the methodological processes and procedures undertaken in carrying out this study. It starts with discussion on the appropriate research design, and goes on to discussions on the population of interest, determination of sample size, sampling list, and sampling technique. Discussed next are data collection tool and approach**,** measurement, pilot study, analysis tools and techniques collection, and justification for the use of Partial Least Square (PLS-SEM) for analyses of measurement model and structural.

3.2 Research Design

Employing a proper philosophical foundation of a study is of major importance in social sciences. Amongst philosophical worldviews, positivism and constructivism are the most widely discussed paradigms in social science. While the positivist worldview is represented by quantitative research, the constructivist is the typical approach for qualitative research (Creswell, 2009).

Positivist researchers seek to study variables objectively through quantitatively based empirical observations for the purposes of nomothetic prediction and explanation (Baxter & Babbie, 2004). Quantitative research approach "conceptualizes reality in terms of variables; it measures these variables; and it studies the relationships between these variables" (Punch, 2014, p. 206). It was in line with this view that this study employed the quantitative research approach under the positivism worldview.

In particular, the current study used survey questionnaire for data collection, of which were all closed-ended questions. Data collected from participants was used to see how it fitted the theories, which was in turn used to test hypotheses in order to reject or support the proposed relationships (Creswell & Clark, 2007). Appropriate sampling techniques were used to ensure generalizability of findings to the intended population of the study.

Further, the current study was also a correlation study. It aimed at examining the associations among the variables understudied, Herein, the study examined the relationship between perceived media coverage and environmental awareness, as well as the moderating effects of perceived government role and green values on this relationship.

Above all, this study adopted the cross-sectional (versus longitudinal) design, in which data was collected at one point in time (Creswell, 2012).

3.3 The Intended Population of the Study

Population is a group of individuals who have the same characteristics (Creswell, 2012). Having well defined population and representative sample is essential in establishing the generalizability of results (Keyton, 2015).

The population of this study was supposedly the citizen or the public of Malaysia. This was because the main issue of this study was concerning the environmental awareness of the Malaysian public, who are exposed to the various news reported by media in Malaysia. However, as it was impossible to collect data from the whole public, a best-representative group of respondents was used.

For this purpose, the local Malaysian students attending tertiary education at the Malaysian public universities (Higher learning institutions) were chosen as the

representative of the population for the current study. This hoped-to-be representative group of public was opted based on two main reasons.

Firstly, the daily learning activities of university students require their highly frequent involvement in extracting needed information from all sorts of information sources. For example, college students have been known to be very receptive to different forms of media in their reading and writing practices (Karim & Hasan, 2007).

Secondly, the students attending tertiary education in Malaysian universities are made up a diverse group of peoples, spanning across a considerably wide range of age group. This is so-natured given that the Malaysian universities offer a range of tertiary educational programms from Diploma Degree to Postgraduate Degrees of Master and Ph.D (Ministry of Education Malaysia, 2014), which understandably comprises students of different levels of age groups.

To this point, the current study defined the targeted population as to comprise the newspapers and online news media readers. In particular, agenda setting studies have shown evidence of newspapers demonstrating greater agenda effect than other mediums (Ader, 1995; Atwater, Salwen, & Anderson, 1985; Mikami et al., 1995). Newspapers are also one of the most conventional approach through which news and information are channeled to the public (Salman et al., 2011). Its high readership (International Federation of Audit Bureau of Circulations, 2014; World Research Company, 2013), and its affordable price make it a convenient choice by the public at large (Daud, 2008; Salman et al., 2011).

In fact, the prominent role of this conventional media channel does not demote despite the growth of other more advanced methods of media used for information dissemination to the public (Daud, 2008; Makaruddin, 2006; Salman et al., 2011). This

phenomenon is evident in the increase of number of newspaper mills and organizations in Malaysia over the years (Alsagoff & Hamzah, 2007; Salman et al., 2011).

In addition, despite of the importance of newspapers in disseminating information about environmental issues as discussed above, the use of online news media is not deniable in this 21st century. The global media and technology have revolutionalized the way people get access to information and news. Communications has experienced a great deal of technological expansion during the last century, which in turn has had an immense impact on society (Ahmad et al., 2011). For example, it has been found that the age group from 18 to 24 prefers to go online for information (Jarvis, Stroud, & Gilliland, 2009; Karim & Hasan, 2007).

According to Salman et al. (2011), newspapers do better job in covering local interest stories, which are often neglected by the political and national online publication. On the reverse, the news report which cannot be printed or news which would not be popularized on the conventional printed newspapers would be channeled through online media (Daud, 2008). Thus, newspapers and online news media in Malaysia are complementing each other.

Moreover, a number of Malaysian newspapers have electronic copy of their print newspapers, and most of the news content that are published in the print copy would be uploaded online. The Star Online and The Sun Online are two marked examples. Both versions of online newspapers are free and thus increasing their penetration (Salman et al., 2011).

Further, many Malaysians, particularly the young generation, turned to online news media for new sources of information, a fresher look, and different perspectives (Salman et al., 2011). Its expansion, popularity and its acceptance among the Malaysian people, as well as its interactive and dynamic features make it

a preferred channel for many public (Ahmad et al., 2011; Salman et al., 2011). Based on the viewpoint above, the current study confined the type of media meant for this research to comprise newspapers (printed) and online news media.

3.4 Sampling Frame, Determination of Sample Size and Sampling Techniques

For the purpose of sampling, information regarding the population of interest and its accessibility is essential beforehand, so that an appropriate sampling list can be drawn. A sampling list or sampling frame is a list of the elements composing the study's targeted population (Babbie, 2014). The lack of a clearly defined frame may result in doubts for the survey planner (Jessen, 1978).

3.4.1 Sampling Frame

As had been discussed in the earlier section (Section 3.3), the local Malaysian students attending tertiary education at the Malaysian public universities were chosen as the representative of the population for the current study. As far as the sampling frame was concerned, there were two important matters for consideration: (i) which universities were included to form the sampling frame, (ii) the reason why public universities (versus private universities) were used.

As to the former, three universities in the northern region of Malaysia, namely Universiti Sains Malaysia Penang (USM), Universiti Utara Malaysia Kedah (UUM), and Universiti Malaysia Perlis (UnIMAP) comprised the sampling frame. These three universities in the northern region were chosen on the basis of cluster sampling, as further detailed in the next section (Section 3.4.2). To note, Universiti Teknologi MARA (UiTM) Perlis was not included into the sampling list because the statistics of each UiTM branch was not available in Ministry of Education Malaysia report (2014) at the time of the data collection. Most importantly, each university

receives students from the whole country. Therefore, the diversity of the university students is close to represent the population of the study.

As to the latter, the current study chose the public universities (versus private universities) for data collection because students studying in the public universities are assigned and managed by the UPU, which stands for 'Unit Pusat Universiti'. UPU is the government official unit specifically established to manage student admission to public universities in Malaysia. For this reason, a public university may well receive students from all over the states in Malaysia, and hence forming a more representative group for the intended population (the Malaysian).

However, this may not be the case for the private universities, where students make their choice as to which university to attend. Therefore, bias in representation might occur. Firstly, it is possible that a private university may have a comparatively large composition of local students from a particular state in which the university is located. Secondly, demographic characteristics of students such as the ethnicity may be biased. For example, a Chinese-based university like Universiti Tunku Abdul Rahman (UTAR) may receive more Chinese students compared to other races. Likewise, an Indian-based university like AIMST University may receive more Indian students (Palanisamy, August 7, 2016, FMT News).

3.4.2 Determination of Sample Size

This estimation of sample size for data distribution followed two main techniques, namely, the cluster sampling which was used to determine the sampling frame, and proportionate random sampling which was further used to compute the number of respondents proportionate to each university (UUM, USM, and UnIMAP).

For cluster sampling, the Northern regional cluster (including USM UUM, and UnIMAP) was chosen on a random basis from among the six main regions

segregated under the national development project which covers 13 states and three federal territories. These regions are namely: Northern, Central, Southern, Eastern Coast, Sabah and Sarawak (Economic Planning Unit, 2014). The use of such regional cluster was appropriate because public universities in Malaysia are scattered across all the states.

While sampling was important to counter the impracticality of collecting data from every individual student of the whole intended population (531,501 students) involving 20 public universities, cluster sampling was used to refine the sample for the current study. Cluster sampling was considered as appropriate because the intended population was considerably homogenous between groups and heterogenous within the group (Sekaran, 2003). Consistent with the principle of cluster sampling, the university students between the different (six) regions are considered inter-group homogenous. Such homogeneity is observable in that each region is characterized by the similar composition of students in terms of demographic background such as age, ethnic, religion, gender, language, education level, and living area (Poston & Bouvier, 2010). In addition, all the public universities in Malaysia receive students from the whole country. At the same time, each individual student within each region is different (heterogenous) from each other because they are of diverse demographic characteristics.

Further from the cluster sampling, proportionate random sampling was used to compute the number of respondents proportionate to each university (UUM, USM, and UniMAP).This was crucial because the chosen universities differ in the number of students.

According to the educational statistics reported by Ministry of Education Malaysia (2014), the total population of students enrolled in the public universities in Malaysia (local and international) is 560, 359 as shown in Table 3.1.

Table 3.1

Public Universities of Malaysia and Enrollment

	List of Universities	No. of students
1.	Universiti Malaya (UM)	27,091
2	Universiti Sains Malaysia (USM)	29,065
3	Universiti Kebangsaan Malaysia (UKM)	30,041
4	Universiti Putra Malaysia (UPM)	32,092
5	Universiti Teknologi Malaysia (UTM)	33,361
6	Universiti Utara Malaysia (UUM)	30,837
7	Universiti Islam Antarabangsa Malaysia (UIAM)	32,086
8	Universiti Malaysia Sarawak (UNIMAS)	17,198
9	Universiti Malaysia Sabah (UMS)	25,207
10	Universiti Pendidikan Sultan Idris (UPSI)	27,659
11	Universiti Teknologi MARA (UiTM)	189,551
12	Universiti Sultan Zainal Abidin (UniSZA)	7,977
13	Universiti Malaysia Terengganu (UMT)	8,715
14	Universiti Sains Islam Malaysia (USIM)	13,022
15	Universiti Tun Hussein Onn Malaysia (UTHM)	15,319
16	Universiti Teknikal Malaysia Melaka (UTeM)	12,593
17	Universiti Malaysia Pahang (UMP)	8,904
18	Universiti Malaysia Perlis (UnIMAP)	10,415
19	Universiti Malaysia Kelantan (UMK)	6,443
20	Universiti Pertahanan Nasional Malaysia (UPNM)	2,783
	Total	560,359

Source: Ministry of Education Malaysia (2014)

However, considering that this study intended to examine the environmental awareness of the locals only, the number of international students was deducted from the total population (560 359). This manual deduction was necessary because there was not available a direct statistics for locals only.

Based on the educational statistics report by Ministry of Education Malaysia (2014), the percentages of international and local students in the Malaysian universities are 5.15 % and 94.85% respectively. Therefore, the local students amounted to 531, 501 (94.85 % x 560 359). With 531,501 as the intended population of the study, the Krejcie and Morgan (as cited in Keyton, 2015, p. 111) sampling table indicated that this population size fell within the category of "100 000 and over"; hence requiring a minimal sample size of 384 to claim representative. However, to encourage sufficient response rate, the current study doubled the minimum sample size required (Salkind, 1997; as cited in Bartlett II, Kotrlik, &

Higgins, 2001) . Therefore, a number of 768 surveys were distributed (384 x 2) among USM, UUM, and UniMAP.

The proportion of each university was calculated, which was in turn used to calculate the corresponding sample size for each university. By means of proportionate sampling technique, about 338, 315, and 115 surveys were collected from the students of UUM, USM, and UniMAP respectively. Table 3.2 summarizes the proportion of students in each of these three universities and the number of surveys that were collected from each university following the proportion.

Table 3.2

The Number of Surveys to be Collected

Universities	Student 100%	Local only * (94.85 %)	Percentage *	Sample size *
Universiti Utara Malaysia (UUM)	30,837	29, 249	44%	338
Universiti Sains Malaysia (USM)	29,065	27, 568	41%	315
Universiti Malaysia Perlis (UnIMAP)	10,415	9879	15%	115
Total	**70 317**	**66 696**	**100%**	768

Source: Ministry of Education Malaysia (2014)

** Note: calculated by the researcher*

Next, in order to ensure that the number of minimal sample size calculated above was enough to generate sufficient statistical power for the analysis, G*Power Analysis was performed for cross-checking (Faul, Erdfelder, Buchner, & Lang, 2009). In particular, since the current study suggested the multi-dimensional structure for media coverage, which the dimensionality of the construct had yet to be statistically decided, four dimensions for media coverage construct were preliminarily assumed as input for the number of predictors in the G*Power program. These four predictors along with the two moderators formed six predictors.

Presented in Figure 3.1 is the result of power analysis generated by the G*Power 3.1.9.2 software. The power analysis indicates that a minimal sample size of 103 was required to afford sufficient statistical power.

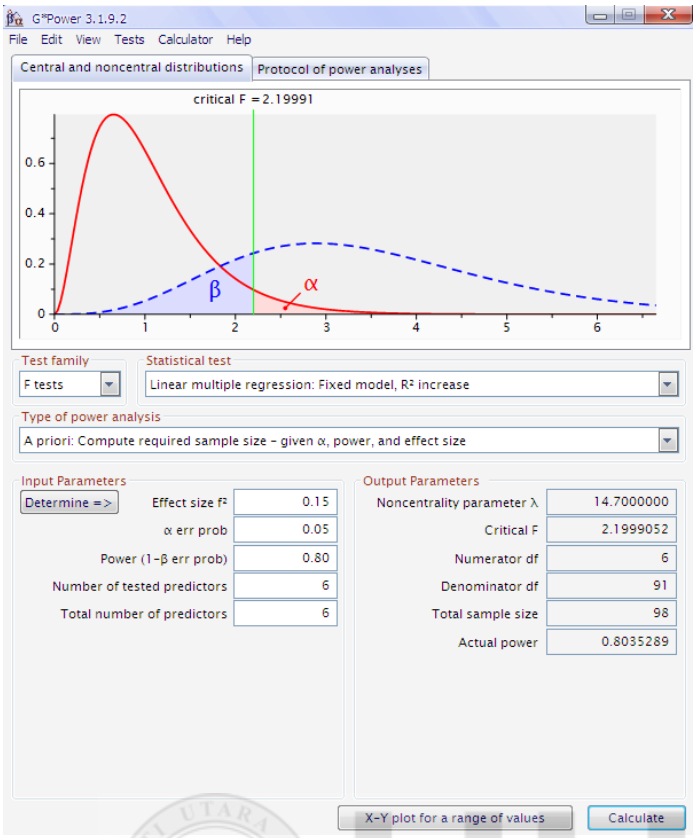

Figure 3.1. Results of power analysis for minimum sample size estimation

3.5 Data Collection Tool and Approach

While survey questionnaire was used to collect data, self-administration approach was used for survey distribution.

On the one hand, questionnaires are perhaps the most frequently used form of measurement throughout the social sciences, including communication (Baxter & Babbie, 2004). It is probably the most commonly used methodological tool for gathering information about almost any communication concept or topic (Keyton, 2015). According to Sekaran (2003), questionnaires are an efficient data collection mechanism when the researchers know exactly what is required and how to measure the variables of interest. Survey research design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell, 2009). The full version of the questionnaire is attached to Appendix 3.1.

On the other hand, self-administration approach was used in this study for its benefit of encouraging greater response rate. According to Baxter and Babbie (2004), when a researcher either delivers the questionnaire, picks it up, or both, the completion rate is likely to be higher than for straightforward mail surveys.

Above all, the principle of systematic sampling was applied to collect data at several common locations in the universities where students most visiting. This included the library area, cafeterias, study rooms (e.g., postgraduate), and areas of study halls. Using systematic sampling, the researcher drew every n-th element starting with a randomly chosen element (Sekaran, 2003). There was an important significance of using systematic sampling during collection in this study.

Notably, this study did not have the list of students which informed the exact respondents (name) to be sought out and sampled, however the study had information of the size of population, which was used to calculate the proportionate sample size needed for each university. Therefore, applying the principle of systematic sampling, at the best possible, allowed the study to maintain randomness and to avoid biases (Keyton, 2015).

Practically, applying the principle of systematic sampling to data collection, the current study chose every third (3rd) student coming to the view until the number of responses collected was sufficient according to the number of responses calculated in Table 3.2 earlier. Further, the systematic sampling procedure is a probability sampling design, and that it allowed research findings of this study to be generalized (Sekaran, 2003).

3.6 Measurement

As part of data collection, a proposed study also provides detailed information about the actual survey instrument to be used (Creswell, 2009). The measure instruments

used in this study were partly developed and partly adapted from the existing body of literature; some with light revision and some with heavy revision. In the process of measures adaption, it is most often that the content of a measure may go under change and some unintended factor may also be included as questions are dropped or added (Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). Therefore, it is the responsibility of the researcher to justify the change made to the scale (Schriesheim et al., 1993).

Perceived media coverage (independent variable) was developed to capture media coverage from the users' perspective. Essentially, the development of perceived media coverage measure was strictly based on the pre-determined definition of media coverage as discussed in the literature chapter. Further, the measure for environmental awareness (the dependent variable) was mainly adapted from several existing measures. Finally, both measures of green values and perceived government role (the two moderators) involved considerable revisions from the existing scales.

It was worth mentioned that all constructs understudied were operationalized as continuous measures. The construction of continuous measures is crucial as it provides richer information, and hence renders greater understanding as to the nature of the social science. Values in continuous measures can differ in degree, amount, or frequency and these differences can be ordered on a continuum (Keyton, 2015), and thus rendering the measures to be more flexible (Punch, 2014). Continuous measures also provide the most variation of responses and lend themselves to stronger statistical analysis (Creswell, 2012).

Correspondingly, all the predictors and criterion variables were measured using five-point Likert-type scale ranging from strongly disagree (1) to strongly

agree (5). Five-point Likert-type scale has been widely used to capture responses about attitudes, beliefs, and perceptions (Keyton, 2015, p.90). Such multiple-item scale gives a more comprehensive and accurate indication of complex concepts, particularly with regard to respondents attitudes and beliefs or orientations (Baxter & Babbie, 2004, p.177).

3.6.1 Environmental Awareness

In this study, environmental awareness was defined as " the cognition about nature and value of environment-related human behavior; it is recognized as a new independent ideology, a progressive value, and a sum of social idea, theory, emotion, willingness, consciousness and other concepts which reflects relationship between human and environment" (Li et al., 2013, p.769). EA was operationalized as a multi-dimensional construct consisting of four dimensions namely, the cognitive, affective, conative, and behaviour perspectives.

Specifically, the cognitive dimension of environmental awareness reflected people's knowledge, beliefs, and norms about environmental issues, while the affective dimension captured people's emotion (personal feelings) or their evaluation of environmental issues (Dunlap & Jones, 2002). The affective dimension was taken as including attitudinal indicators that tapped personal feelings or evaluations of either specific environmental issues or broad environmental issues (Dunlap & Jones, 2002). Affective dimension reflected the essence of environmental consciousness, the emotional element of attitudes, concern, and emotional judgment aspect of beliefs (Schaffrin, 2011). The conative expression was defined as a readiness to perform, or a commitment to support, a variety of actions that could potentially impact environmental quality. These included willingness to perform specific individual actions (recycling) or a set of individual actions (e.g., green consumerism, green

marketing), as well as stated support for specific or a general public policy proposal. Simply, conative dimension captured both personal and public commitment towards protecting environmental quality (Dunlap & Jones, 2002). The behavioural dimension of awareness represented the actual or reported actions taken by individual (personal environmental behaviours) and their behavioural expression of support for government policies, programs and organizations (public environmental behaviour) (Dunlap & Jones, 2002).

While a multi-dimensional scale it was, this study was also aware that environmental awareness had been measured using uni-dimensional scales (Dunlap & Jones, 2002; Dunlap, Liere, Mertig, & Jones, 2000; Guber, 1996), and multi-dimensional scales in past studies (Arlt et al., 2011; Bamberg, 2003; Kaiser, Wolfing, & Fuhere, 1996; Kollmuss & Agyeman, 2002; Leeming, Dwyer, & Bracken, 1995; Maloney, Ward, & Braucht, 1975; Schahan & Holzer, 1990).

A multi-dimensional scale was proposed to be more suitable for the current study based on two main considerations. Firstly, environmental awareness was a very subjective issue, in which different people would have different opinions and perceptions about the matter. Secondly, the concept of environmental awareness is complex matter; it is a field intertwined among several aspects (Dunlap & Jones, 2002). Therefore, a wide array of perceptions in different aspects and importance may form in people's mind. The complexity was also conceivable as different degrees of agreement on matters related to environmental awareness could be expected from different people. Further, this pro-environmental behaviour in people is hardly observed from the surface.

Particularly, while five-point Likert-type scale was used for three of its dimensions namely, the conative, affective, and behaviour dimensions of

environmental awareness, it was used for the part of measures for the belief aspect of cognitive dimension. A different scale descriptor was used for the knowledge aspect of the cognitive dimension.

Further, scales adapted to measure dimensions of public environmental awareness were contextualized into suiting the context of the present study. All the scales of environmental awareness were sent to an expert in the field of sociology for content validity assessment. Based on the feedback from Professor Dunlap (Dunlap, personal communication, December 3, 2015), the wording and the clarity of the scales were improved further.

Given the length of the scale, the original and the revised scales of the four dimensions are discussed and tabulated separately.

3.6.1.1 The Cognitive Dimension

The knowledge aspect of cognitive measure was partly adapted and developed into usable form to suit the purpose of a correlation study. The belief aspect of cognitive measure was mainly adapted from the measure of Dunlap et al. (2000). The measures of both aspects are presented in the separate section A and B in the following:

A) Knowledge aspect measure

This section reflects the knowledge aspect of cognitive dimension. Knowledge was categorized into two main types. The first referred to a type of knowledge that was pertinent to the status of only being aware of some environmental phenomena, while the second type focused on the breath of respondents' knowledge. This was because the individuals' status of being only aware of some environmental issues might not always reflect the amount of information that public is exposed to, or how much public actually know about the environment (Taufique et al., 2014).

Unlike the five-point scale used to capture the level of respondents' agreement for all other continuous measures in this study, the cognitive scale was meant to measure the breadth of knowledge (level) of the respondent regarding environment degradation. Responses upon the five-point cognitive (knowledge aspect) scales were generated from the counting of items (phenomena) checked by the respondents. Different number of counts would be attached accordingly to the five-point scale (anchoring know very little [1] to know very well [5] based on a predetermined interval category set by the researcher. By this way, not only this research could explore and describe the level of cognitive awareness (knowledge), the continuous scale also allowed further examination of cognitive awareness together with other constructs within a correlation study destined by the research issue.

Specifically, this measurement approach of knowledge aspect was adapted after the breadth of awareness measure of Stamm et al. (2000), Ogunbode and Arnold (2012), and Shanahan et al., (1997), in which the method was based in the notion of counting how many phenomenon (item) respondents had heard of.

Two questions in such measurement method were put forth. First question required respondents to check (√) from the list for the phenomena (items) that they had heard or known about. These phenomena and their sources of adaptation are listed in the Table 3.3. The calculated number for the first question corresponded to the five-point scale anchoring between "know very little" (1) and "know very well" (5), as elaborated in Figure 3.2.

The scale point for the status of being aware

Mark ≤ 4 events → Know very little (Have very little knowledge)
Mark 5-8 events → Know little (Have little knowledge)
Mark 9-12 events → Know quite well (Have favorable level of knowledge)
Mark 13-16 events → Know well (Have high level of knowledge)
Mark ≥ 17 events → Know very well (Have very high level of knowledge)

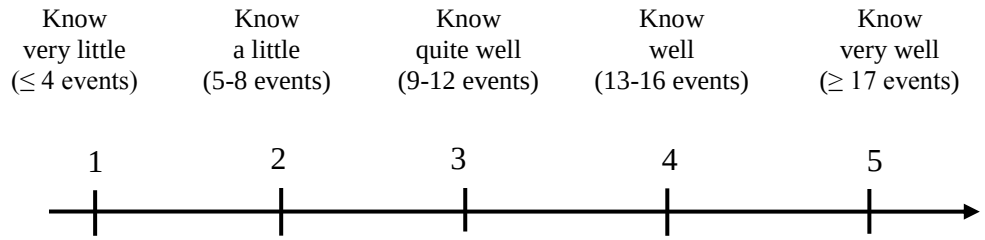

Figure 3.2. The five-point scale descriptor for the status of being aware

Table 3.3

Phenomena to Measure the Status of being Aware

No.	Phenomena (events)	Sources
1	Greenhouse effect	Stamm et al. (2000)
2	Global warming	Stamm et al. (2000); Mikami et al.(1995)
3	Acid rain	Leeming et al. (1995); Yin (1999); Mikami et al.(1995)
4	Overpopulation/ population explosion	Stamm et al. (2000); Mikami et al.(1995)
5	Extinction of plants and animals	Stamm et al.(2000)
6	Ozone layers depletion	Leeming et al. (1995); Mikami et al.(1995)
7	Fossil fuel use	Stamm et al. (2000)
8	The rise of sea level	Stamm et al. (2000)
9	Energy-efficient technology	Stamm et al. (2000)
10	Radiation leaking/ nuclear power plant	Leeming et al. (1995); Yin (1999); Mikami et al.(1995)
11	Green consumerism	Sinnappan & Abd Rahman (2011)
12	Deforestation /destruction of tropical forest	Mikami et al.(1995)
13	Wildlife preservation	Mikami et al.(1995); Atwater et al.(1985)
14	Export of hazardous materials to the developing countries	Mikami et al.(1995)
15	Land degradation	Dunlap& York (2008)
16	Sustainable development	Sharma & Starick (2002)
17	Nature conservation	Ogunbode& Arnold (2012)
18	Biodiversity management	Ogunbode& Arnold (2012); Dunlap & jones (2002)
19	Waste disposal problems	Mikami et al.(1995)
20	Green marketing	Sinnappan & Abd Rahman (2011)

The second question comprised 15 True-or-False (T/F) questions regarding causes and solutions of environmental degradation. In the like manner as with the first question, the total score obtained by each respondent was scaled upon a predetermined scale of breadth of knowledge, as elaborated in the following.

Get ≤ 3 correct→ Know very little (Have very little knowledge)

Get 4-6 correct → Know little (Have little knowledge)

Get 7-9 correct → Know quite well (Have favorable level of knowledge)

Get 10-12 correct → Know well (Have high level of knowledge)

Get 13-15 correct → Know very well (Have very high level of knowledge)

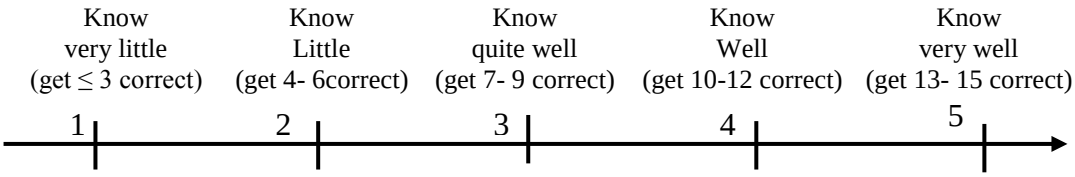

Figure 3.3. The five-point scale descriptor of breadth of knowledge for T/F questions

The questions asked were adapted mainly from existing works (Ahmed & Ali, 2012; Leeming et al., 1995).The statements used for this section are tabulated in Table 3.4.

Table 3.4

Statements for Knowledge Aspect of Cognitive Dimension and Sources (Breadth of Knowledge)

No	Statements	A	Adaptation sources
1	Ecology is the study of the relationship between organism and their environment.(general)	T	Leeming et al. (1995)
2	Environmental problems are a threat to all living things in the world. (general)	T	Leeming et al. (1995)
3	CFC used in the air-condition stands for CloroFluoroCarbon. (general)	T	Stamm et al. (2000)
4	Carbon monoxide is produced by vehicles. (pollution)	T	Leeming et al. (1995)
5	The most pollution of our water resources is caused by animal and human waste. (pollution)	T	Leeming et al. (1995)
6	Arsenic and silver nitrates are the most common poisons in water. (pollution)	T	Leeming et al. (1995)
7	Most of the lead in our air is caused by burning refuse. (pollution)	F	Leeming et al. (1995)
8	Recycling means that people buy things that can be used again. (recycle)	T	Leeming et al. (1995)
9	Disposable diaper is one example of recyclable items. (recycle)	F	Leeming et al. (1995)
10	Orange recycling bin for can and plastic. (recycle)	T	Ahmad & Ali (2012)
11	Blue recycling bin for paper products. (recycle)	T	Ahmad & Ali (2012)
12	Dry iron is more energy saving than steam iron. (energy)	T	Ahmad & Ali (2012)
13	Notebook is more energy saving than PC.(energy)	T	Ahmad & Ali (2012)
14	Coal and petroleum are examples of fossil fuels. (energy)	T	Leeming et al. (1995)
15	Burning coal for energy decreases needed acid rain .(energy)	F	Leeming et al. (1995)

Note: 'A' denotes the correct answer

B) Belief measure

Presented in Table 3.4 are the original and revised scales of belief.

Table 3.5

The Original and Revised Scale of Belief

No.	Revised Item	Original Item	Adaptation sources
1	Human populations are approaching the limit the earth can support.	We are approaching the limit of the number of people the earth can support.	Dunlap et al. (2000)
2	Humans do not have the right to modify the natural environment to suit their needs.	Humans have the right to modify the natural environment to suit their needs.	Dunlap et al. (2000)
3	When humans interfere with nature it often produces disastrous consequences.	When humans interfere with nature it often produces disastrous consequences.	Dunlap et al. (2000)
4	Humans are severely abusing the environment.	Humans are severely abusing the environment.	Dunlap et al. (2000)
5	Plants and animals have equal right (to exist) as humans.	Plants and animals have as much right as humans to exist.	Dunlap et al. (2000)
6	The balance of nature is strong enough to cope with the impact of modern development.	The balance of nature is strong enough to cope with the impacts of modern industrial nations (reverse).	Dunlap et al. (2000)
7	It is good that human are still subject to the laws of nature.	Despite our special abilities humans are still subject to the laws of nature.	Dunlap et al. (2000)
8	Environmental degradation is serious.	The so-called "ecological crisis"facing humankind has been greatly exaggerated. (reverse)	Dunlap et al. (2000)
9	Resources from natural environment are not as abundant as we have thought.	The earth is like a spaceship with very limited room and resources.	Dunlap et al. (2000)
10	The balance of natural environment is very delicate and easily upset.	The balance of nature is very delicate and easily upset.	Dunlap et al. (2000)
11	If human continue to deal harshly with the natural environment, we will soon experience a big environment disaster.	If things continue on their present course, we will soon experience a major ecological catastrophe.	Dunlap et al. (2000)

3.6.1.2 Affective Dimension

For the affective dimension, this study mainly adapted the scale of Leeming et al. (1995). This scale was originally adapted from the established and broadly used scale of Maloney et al. (1975). The measure of Maloney et al. had been used in

environmental research in the past, and continued to be used in the past five years (e.g., Fraj-Andrés & Martínez-Salinas, 2007; Polonsky, Vocino, Grau, Garma, & Ferdous, 2012). The scale was considered as the best example of a scale to measure multiple attitudinal components (Gray, Borden, & Weigel, 1985; as cited in Leeming et al., 1995).

However, this study chose Leeming et al.'s scale over Maloney's for the simplicity and clarity of the item wording. The items were of more direct statements appealing to people's feelings and evaluative minds. The items of Leeming et al.'s scale were claimed to be comparable with the affective dimension of awareness (Dunlap & Jones, 2002). Further, the items also covered sufficient topics of interests in varying specificity. Some instances of these topics were such as water, air, land, energy, recycling, animal, plants, natural resources, climate, pollution in general, other ecological problems, and etcetera. These topics were also consistent with those concerned by Malaysia (Department of Environmental Malaysia, 2007, 2008, 2009, 2010, & 2012). Presented in Table 3.6 are the original and revised scales of affective dimension.

Table 3.6

Original and Revised Scale of Affective Dimension

No	Revised Item	Topic	Original Item	Adaptation sources
1	I am frightened to think people don't care about the environment.	General	I am frightened to think people don't care about the environment.	Leeming et al. (1995)
2	I get angry about the damage pollution does to the environment.	Pollution	I get angry about the damage pollution does to the environment.	Leeming et al. (1995)
3	It makes me happy when people recycle used bottles, cans, and paper.	Recycling	It makes me happy when people recycle used bottles, cans, and paper.	Leeming et al. (1995)
4	I get angry when I think about companies testing products on animals.	Animal	I get angry when I think about companies testing products on animals.	Leeming et al. (1995)
5	It makes me happy to see people trying to save energy.	Energy	It makes me happy to see people trying to save energy.	Leeming et al. (1995)
6	I'm worried about environmental problems.	General	I do not worry about environmental problems. (reversed item)	Leeming et al. (1995)

Table 3.6 Continued

7	I am frightened about the effects of pollution on my family.	Pollution	I am not frightened about the effects of pollution on my family. (reversed item)	Leeming et al. (1995)
8	I feel upset when I see people throwing away things that could be recycled.	Recycling	I get upset when I think of the things people throw away that could be recycled.	Leeming et al (1995)
9	It makes me sad to see houses being built where animals used to live.	Animals	It makes me sad to see houses being built where animals used to live.	Leeming et al. (1995)
10	It frightens me to think how much energy is wasted.	Energy	It frightens me to think how much energy is wasted.	Leeming et al. (1995)
11	It upsets me when I see people using too much water unnecessarily.	Water	It upsets me when I see people use too much water.	Leeming et al. (1995)

3.6.1.3 Conative Dimension

The measure of conative dimension was adapted from existing scales of Maloney et al. (1975) and Leeming et al. (1995). Presented in Table 3.7 are the original and revised scales of conative dimension.

Table 3.7

Original and Revised Scale of Conative Dimension

No	Revised Item	Topic	Original Item	Adaptation sources
1	I'm willing to stop buying products from companies which pollute the environment, even though it might be inconvenient to me.	General	I would be willing to stop buying products from companies guilty of polluting the environment, even though it might be inconvenient.	Maloney et al. (1975)
2	I would probably never join a group which is mainly concerned with environmental issues.(reversed)	General	I would probably never join a group or club which is concerned solely with ecological issues. (reversed)	Maloney et al. (1975)
3	I'm willing to ride the bus to more places in order to reduce air pollution.	Pollution	I would be willing to ride the bus to more places in order to reduce air pollution.	Leeming et al. (1995)
4	I'm willing to use less air conditioning to help save energy.	Energy	I would not be willing to save energy by using less air conditioning. (reversed item)	Leeming et al. (1995)
5	I'm willing to use dimmer light bulbs to save energy.	Energy	To save energy, I would be willing to use dimmer light bulbs.	Leeming et al. (1995)
6	I'm willing to donate RM30 for raising fund to help the environment.	General	I would not give $15 of my own money to help the environment.	Leeming et al. (1995)

Table 3.7 Continued

7	I'm willing to go from house to house to pass out environmental information.	General	I would go from house to house to pass out environmental information.	Leeming et al. (1995)
8	I'm willing to write letters asking people to help reduce pollution.	Pollution	I would be willing to write letters asking people to help reduce pollution.	Leeming et al. (1995)
9	I'm willing to go from house to house asking people to recycle.	Recycling	I would be willing to go from houses to houses asking people to recycle.	Leeming et al. (1995)
10	I'm willing to separate my family's trash for recycling.	Recycling	I would not be willing to separate my family's trash for recycling. (reverse)	Leeming et al. (1995)
11	To save water, I'm willing to use less water when I bathe.	Water	To save water, I would be willing to use less water when I bathe.	Leeming et al. (1995)

3.6.1.4 Behaviour Dimension

The behaviour dimension of environmental awareness was also mainly adapted from the scales of Maloney et al. (1975) and Leeming et al. (1995). Presented in Table 3.8 are the original and revised scales of behaviour measure.

Table 3.8

Original and Revised Scale of Behaviour Dimension

No	Revised Item	Topic	Original Item	Adaptation sources
1	I always consider the polluting effect of a product before buying.	Pollution	I guess I've never actually bought a product because it had a lower polluting effect. (reverse)	Maloney et al. (1975)
2	I have asked my parents not to buy products made from animal fur.	Animal	I have asked my parents not to buy products made from animal fur.	Leeming et al. (1995)
3	I always make a special effort to buy products in recyclable containers.	Recycling	I don't make a special effort to buy products in recyclable containers.	Maloney et al. (1975)
4	I often switch products for environmental reasons.	General	I have switched products for ecological reasons.	Maloney et al. (1975)
5	I lodge complaint reports to the authorities about pollution problems.	Pollution	I have never written a congressman concerning the pollution problems. (reversed item)	Maloney et al. (1975)
6	To save water, I turn off water in the sink while brushing my teeth.	Water	I turn off the water in the sink while I brush my teeth to conserve water.	Leeming et al. (1995)
7	To save energy, I always turn off lights at home when they are not in use.	Energy	To save energy, I turn off lights at home when they are not in use.	Leeming et al. (1995)
8	I have asked others what I can do to help reduce pollution.	Pollution	I have asked others what I can do to help reduce pollution.	Leeming et al. (1995)
9	I often read stories about the environment.	General	I often read stories that are mostly about the environment.	Leeming et al. (1995)

Table 3.8 Continued

10	I don't like to leave the refrigerator door open while deciding what to get out.	Energy	I leave the refrigerator door open while I decide what to get out.	Leeming et al .(1995)
11	I have asked my family to recycle some of the things we use.	Recycling	I have asked my family to recycle some of the things we use.	Leeming et al. (1995)

3.6.2 Operationalizing Perceived Media Coverage

While many researchers have obtained media coverage measure by method of quantitative content analysis (Antilla, 2005; Brulle et al., 2012; McManus, 2002) or qualitative content analysis (Dudo et al., 2007; Mazur, 1998; McComas, Shanahan, & Butler, 2001), this study contributed to an alternative measure for mass media as it was gauged and perceived from the public's perspective, the end user of mass media. Therefore, due to the methodological concern, media coverage was operationalized as a continuous measure to allow it be captured from users' perceptions. The term "perceived" was added to it, and thus "perceived media coverage", as it was perceived by the users.

Important to note, the data and the measures of media as studied in the past had been one that was obtained by the researcher's computation which involved qualitative (exploratory) works of content analysis to identify and count the number of appearance of an intended subject (Dudo et al., 2007; Mazur, 1998), as in line with the Quantity Theory of Media Coverage (Mazur & Lee, 1993; Mazur, 2009). Instances of some of these measures included the number of articles reviewing on environmental issues (Antilla, 2005; Brulle et al., 2012; McManus, 2002), and the number of TV shows discussing environmental issues (McComas et al., 2001).

Having this noted, also equally important to note was the difference of unit of analysis used in previous studies and the current one. While the unit of analysis intended for the current study was at the individual level, those of the previous

studies were dependent on the level of the content intended, for example, at the article-level (Rogala, 2011; Sampei & Aoyagi-Usui, 2009), and subject matter-level (Anderson & Marhadour, 2007; Das et al., 2009).

As a result, media coverage in this study was gauged from the media readers' (audience) perspective by means of perception. Being the end user of the media, the direct experience of being a paying consumer was believed to posit media users at a good stance to provide appropriate answer pertaining to the extent to which media had made sufficient role on environmental issues.

The development of perceived media coverage measure was strictly based on the pre-determined definition. Perceived media coverage in this study was defined as the amount and the prominence of media content on environmental issues presented to users (Amenta et al., 2009; Barakso & Schaffner, 2006; Clayman & Reisner, 1998; Gamson & Wolfsfeld,1993; Koopmans, 2004; Manheim, 2012). Media coverage was operationalized as the extent to which the news was informative and educational (Harring et al., 2011; Sampei & Aoyagi-Usui, 2009). As the measurement of media coverage from the users (receivers) perspective was not readily available, therefore the current study extracted the essence of informative and educational aspects of mass media functions from the existing media-centered measures.

The two essences were reflected by relevant criteria such as the depth of news content (Agbatogun, 2009; Hasan, 2007; Lemert, Mitzman, Seither, Cook, & Hackett, 1977; Raouf, 2010), prominence of news (Ader, 1995; Atwater et al., 1985; N. N. Hasan, 2007), frequency and appearance (Brulle et al., 2012; Hill, Oliver, & Marion, 2012; Lee, 2011; Mikami et al., 1995), timeliness (Stryker, 2002), reliability or trustfulness of news, news varieties span (Agbatogun, 2009; Hasan, 2007), and attractiveness of news

presentations (Chokriensukchai & Tamang, 2010). Several items such as timeliness, and reliability or trustfulness of news were added based on literature study.

For example, items of timeliness were included considering that timeliness was one important criterion of good journalism (Stryker, 2002). Further, several items capturing people's general agreement of the role of mass media, were also put forth (Chokriensukchai & Tamang, 2010). Altogether, 27 items were proposed to measure perceived media coverage. Moreover, to check the validity of items that were generated to measure the criteria above, the items were also reviewed by academic expert in the field of environmental communication in Malaysia.

According to the feedback (N. N. Hassan, personal communication, November 14, 2015), all the 27 items were considered relevant. However, it was recommended that a few statements to capture news sources be added. Therefore, in addition to the earlier 27 items, two additional items were adapted to capture the number and variety of news sources, and thereby a total of 29 items were generated to measure media coverage from public perspective. Based on the literature study for the criteria discussed above, these criteria were redefined in line with the setting of media coverage for environmental issues as follow.

i) The depth of news content/ sufficiency

The depth of news content indicated the sufficiency of articles or stories on environmental issues in terms of the depth of discussion and analysis, the inclusion of back ground and factual information, constructive critics and suggestions (Agbatogun, 2009; Chokriensukchai & Tamang, 2010; Hasan, 2007; Laurian, 2003; Lemert et al., 1977).

ii) The prominence (placement)

Prominence reflected the importance that people attached to environment-related news. The importance was recognizable in the size or length of stories, the placement of news, and the use of photos for greater emphasis (e.g., newspapers, online media), and the appearance of environmental news in the headline (Ader, 1995; Atwater et al., 1985; Hasan, 2007).

iii) Frequency of appearance

Frequency of appearance tapped on how frequently environmental news appeared in the mass media. This reflected the regularity of such news which could be captured by how easily and conveniently news could be found from time to time (Brulle et al., 2012; Harring et al., 2011; Hill et al., 2012; Lee, 2011; Mikami et al., 1995).

iv) News sources

News sources denoted the number and the type or variety of news sources that were quoted in media reporting on environmental issues (Hasan, 2007).

v) Timeliness

Timeliness concerned about how timely news was reported in the real sense of keeping users up to date (Stryker, 2002).

vi) Reliability

Reliability of news reflected how accurate was the information provided by the news articles. Specifically, it captured the trust ability of news in users' eyes.

vii) News variety

News variety reflected how broadly the environmental news spanned in terms of the type and the range of issues addressed. Some among the varieties of environmental issues were such as air and water quality, landslide, volcanoes, flood, hurricane, fire, flood, deforestation, energy, industrial or development impact on environment, waste management and recycling etc. The news variety also denoted the reporting of news across both local and international levels. This criterion was closely related to topic selection in media studies (Agbatogun, 2009; Hasan, 2007).

viii) Attractiveness of news

Attractiveness of news referred to the extent to which the issues reported managed to grasp the interest and attention of users. This could be clearly known from the fact whether users looked up to or like the news (Chokriensukchai & Tamang, 2010).

ix) General agreement on the role of mass media

General agreement on the role of mass media expressed the general attitudes of people towards the role of mass media in informing public about environmental issues (Chokriensukchai & Tamang, 2010).

Presented in Table 3.9 are the original and revised scales of media coverage measure. The full references for original and revised scales is attached in Appendix 3.2

Table 3.9

Revised Scale of Media Coverage Measure

No	Revised Item	Adaptation sources
	i) The depth of news content/ sufficiency/ adequacy	
1	Mass media reports useful information about environmental issues.	Agbatogun (2009); Chokriensukchai & Tamang (2010); Hasan (2007); Lemert et al. (1977); Laurian (2003)
2	The environmental news is always reported in full-length story in the mass media.	
3	Malaysian mass media has taught me a lot about the environmental issues.	

Table 3.9 Continued

4	Environmental issues reported often provides background information .	Hasan (2007)
5	Environmental issues are often reported with constructive critics.	
6	Mass media provide adequate reporting on environmental News.	Lemert et al. (1977)
7	Through the mass media, I know about the NGOs and associations that concern about environment.	Agbatogun (2009)
8	* Environmental issues are often deeply discussed with analytical information.	Abdel Raouf (2010); Agbatogun (2009)
	ii) The prominence / placement	
9	The news related to environment is easily found in mass media in Malaysia.	Atwater et al. (1985); .Hasan (2007)
10	Environmental news often has its own full page.	
11	Environmental news often comes with sufficient photos.	
12	It is common to see environmental issues appear as big headline in mass media.	Ader (1995)
	iii) Frequency of appearance	
13	I can always see environmental issues (air pollution, water pollution, forest burning, etc.) being reported in the mass media from time to time.	Mikami et al. (1995)
14	I often see messages about environmental protection in mass media.	Lee (2011)
15	Whenever I need to look for information about the environmental preservation in Malaysia, I will try to locate it from the media.	Brulle et al. (2012)
16	I can easily find the reports on any misconduct of company which spoil the environment in mass media.	Harring et al. (2011)
17	It is easy for me to access and read about news on natural environment in mass media.	Hill et al. (2011)
	iv) News Sources	
18	Mass media use number of news sources to validate the reports.	Hasan (2007)
19	Mass media use a variety of news sources in their reporting on environment issues.	Hasan (2007)
	v) Timeliness/ up-to-date	
20	The information on environmental issues provided by mass media is well sufficient to keep me up to date	Stryker (2002)
	vi) Reliability / accuracy	
21	Environment information provided by the Malaysian media is often accurate.	-
	vii) Attractiveness of news	
22	Environmental news reported in the Malaysian mass media attracts my attention.	Chokriensukchai &Tamang (2010)
23	I like the way environmental issues is reported in the mass media.	
24	The environmental news often triggers interesting discussions among me and my friends.	
	viii) General agreement on the role of mass media	
25	Mass media plays important role to remind people on environmental consequences.	Chokriensukchai &Tamang (2010)
26	Environmental news in the mass media is effective to influence people.	
	ix) News variety	
27	There is a wide variety of environmental issues reported in mass media of Malaysia (such as air quality, water quality, and land slide, etc.)	Agbatogun (2009); N. N. Hassan (2007)
28	I can find environmental news happening all around the world in Malaysia mass media.	
29	The mass media covers a wide range of environmental issue happening within Malaysia.	

* added based on the literature

3.6.3 Operationalizing Green Values

The variable 'green values' was defined as the values that human attached to natural environment which promote mindfulness of the environmental impact of one's behavior, and the very need of natural environment to be preserved, protected, and sustained in a manner that delivers mutual benefits to both environment and human, by the virtue of a good, safe, comfortable and quality life (Chen et al., 2015;Farahat & Emad Bakry, 2012; Li et al. ,2013; Qualitel Association Report, 2012; Shabani et al., 2013; Taufique et al., 2014). Accordingly, 'green values' was operationalized as comprising value elements of environment, health, emotion, and image (personal norms).

The dimensionality of the green values construct had not been broadly confirmed, as researches on green values were still in its infant stage. For the purpose of this study, the preliminary measure of Li et al, (2013) was mainly adapted. This measure originally captured green values in two dimensions, namely self-interest and altruistic values. Li et al.'s had adapted the green values measure from Sheth's model.

Because the use of self-interest and altruistic values items in the Li et al.'s scale were specific for studying green purchasing behaviour, therefore these items could not be applied directly into the current study. Instead, the gist of the Li et al.'s scale items were carefully extracted, and later contextualized into the specific setting of this study. While Li et al.'s scale was mainly used, six scale items was also adapted from Taufique et al. (2014), where the original scale was referred to Haws, Winterich, and Naylor (2010) . Such combination of scales was due to the reason that the use of self-interest and altruistic values items in the Li et al.'s scale were not balanced. Practically the items of Taufique et al.'s scale, which reported high level of internal consistency, were taken to substantiate the intended scale of this study by

balancing those items that had altruistic dimension in Li et al's measure with those items that had self-interest dimensions.

Altogether, these items were hopeful to provide a sufficient representation of green values as defined in this study. Notably, the green values scale had also been corrected by Professor Dunlap (Dunlap, personal communication, December 3, 2015). This helped to improve the clarity of the scale items. Presented in Table 3.10 are the original and revised scales of green values proposed for this study.

Table 3.10

Original and Revised Scale of Green Values

No	Revised scale of green values	Topic and value aspect	Original scale	Adaptation sources
1	It is important to me that the products I use do not harm the environment.	Environmental value (Altruistic)	It is important to me that the products I use do not harm the environment.	Items 1-6 Taufique et al. (2014)
2	I consider the potential environmental impact of my actions when making many of my decisions.	Environmental value(Altruistic)	I consider the potential environmental impact of my actions when making many of my decisions.	
3	My routine and lifestyle are affected by my concern for environment.	Environmental value(Altruistic)	My purchase habits are affected by my concern for our environment.	
4	I am concerned about wasting the resources of our planet.	Environmental value(Altruistic)	I am concerned about wasting the resources of our planet.	
5	I would describe myself as environmentally responsible.	Environmental value(Altruistic)	I would describe myself as environmentally responsible.	
6	I am willing to be inconvenienced to take actions that are more environmentally friendly.	Environmental value(Altruistic)	I am willing to be inconvenienced in order to take actions that are more environmentally friendly.	
7	Using green products can help to improve ecological environment.	Environmental value(Altruistic)	Using green products can help to improve ecological environment.	Items 7-18Li et al. (2013)
8	I always prefer to use green products so as to set example to motivate others to do the same.	Environmental value(Altruistic)	Using green products can drive the others doing as me.	
9*	Using environmentally friendly products can reduce the pollution of the environment.	Environmental value(Altruistic)	Using green products can help to reduce the pollution to environment.	
10	Using green products makes me feel relaxed.	Emotional value (self-interest)	Using green products makes me relaxed.	

Table 3.10 Continued

11	Using green products gives me a feeling of harmony with nature.	Emotional value (self-interest)	Using green products gives me a feeling of harmony with nature.
12	Using green products makes me feel good.	Emotional value (self-interest)	Using green products makes me feel good.
13	I respect people who protects natural environment.	Image value (self-interest)	Using green products can help me earn lots of praise
14*	Acting environmentally friendly can help me to gain a pro- environment self-image.	Image value (self-interest)	Using green products can help me build a pro-environment self-image.
15*	Using green products can help me own a good image.	Image value(self-interest)	Using green products can help me own a good image
16	Green products contain less harmful ingredients to human.	Health value (self-interest)	Green products contain less ingredients harmful to human.
17	Taking care of the nature environment is important to secure our health and safety.	Health value (self-interest)	Using green products can secure our health and safety.
18	Using green products is a guarantee of the high quality of life.	Health value (self-interest)	Using green products is a guarantee of the high quality of life.

3.6.4. Operationalizing Perceived Government Role

Government role was conceptualized as enacting the required environment-related measures by government to prevent, control, and protect the natural environment. In this definition, government role constituted the aspects of government-based initiatives and programs or activities related to environment (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Ahmed & Ali, 2012; Ali et al., 2011; Wahid et al., 2011) , as well as the stringency and enforcement of environmental rules and policies (Sinnappan & Rahman, 2011; Stoddart et al., 2012).

Of related concern, not much empirical work was noticeable on the government role as a construct related to environment protection and preservation. This perhaps results in the limited number of items that had been used to measure government role in previous studies.

In this study, a total number of nine (9) items were proposed to be used to measure the construct. The measure of government role was formed by adapting

from several existing measures (Johnson, 2011; Nielson, 1999; Poortinga et al., 2004; Rahim et al., 2012; Wang et al., 2013; Weigel & Weigel, 1978). Further, two (2) relevant items were also drawn from "policy support" measure of Carman (1998). Altogether, 11 items were proposed to measure government role. In addition, the scale was also content-validated (Dunlap, personal communication, December 3, 2015). Similar to media coverage, the term "perceived" was added to "government role", and hence "perceived government role", as the scale was perceived by the respondents. Presented in Table 3.11 are the original and revised scales of government role.

Table 3.11

Original and Revised Scale of Perceived Government Role

No	Revised Item	Operational aspects	Original Item	Adaptation sources
1	In Malaysia, government enforces laws to make ordinary people protect environment.	Enforcement of environmental rules	Government should pass laws to make ordinary people protect the environment, even it interferences with people right to make their own decisions.	Nielson (1999)
			Government should enforce environmental rules and regulations.	Chen & Chai (2010, as cited in Tantawi et al., 2007)
2	Malaysia has clear strict rules to deal with companies which harm environment.	Pollution/ stringency	The federal government will have to introduce harsh measures to halt pollution since few people will regulate themselves	Weigel & Weigel (1978)
			"To solve environmental problems, the government should give clear rules about what is and what is not allowed."	Poortinga et al. (2004)
3	Malaysia government is doing a good job in promoting green living among public.	Government-base initiatives /government information dissemination	The government and NGOs are doing a good job in promoting the 'green living' concept in Malaysia .	Rahim et al. (2012)
4	Malaysia government encourages people to make report if they notice any misconduct that harms the environment.	Government-base initiatives programs or activities	Government officials encourage me to take action.	Johnson (2011)

Table 3.11 Continued

5	Government provides us the list of control agencies which we may report matters related to environment.	Control agencies	The government should provide each citizen with a list of agencies and organizations to which citizens could report grievances concerning pollution.	Weigel & Weigel (1978)
6	I can see sufficient green campaigns conducted by government in Malaysia.	government-base initiatives programs or activities	Green advertising/campaigns conducted by the government are interesting and effective.	Rahim et al. (2012)
7	I have heard that Malaysian government giving funds to research on technology for recycling waste product.	government-base initiatives programs or activities	The government should subsides research on technology for recycling waste products.	Chen& Chai (2010, as cited in Tantawi et al., 2007)
8	I am satisfied with the environmental policies and implementation in Malaysia.	enforcement of environmental rules	Satisfaction with watershed policies, and with decision making, planning, and enforcement.	Wang et al. (2013)
9	From time to time, Malaysia government launches campaign on reducing garbage.	Regulation concern factor	Reducing solid waste and garbage.	Carman (1998)
10	I often see government agencies cleaning up rivers and lake.	Regulation concern factor	Cleaning up lakes and parks for recreation such as hiking and boating; cleaning up toxic waste.	Carman (1998)
11	Others think that government should do more to solve problems related to environment. (reversed)	General	Others think that government should do more to solve our country‘s problems. (reversed)	Nielson (1999)

3.7 Pilot Study

A pilot study was conducted to check the preliminary reliability of the measure items, as well as examining the suitability of the measures for the specific context of the current study. For the purpose of this study, about 150 respondents were selected on convenient basis from among the university students of Universiti Utara Malaysia. This number of cases also fulfilled the minimal number of thirty (30) respondents needed for a pilot study (Sekaran, 2003).

For this purpose, the internal consistency reliability of Cronbach’s alpha was performed for all the main constructs. Internal consistency refers to the extent to which the items in a test measure the same construct. Items that measure the same

phenomenon should logically cling or hang together in some consistent manner. Specifically, examining the internal consistency of the test enables the researcher to determine which items are not consistent with the rest in measuring the phenomenon under the investigation (Ho, 2006).

As presented Table 3.12, all the constructs were found to achieve Cronbach's alpha coefficients of above .70 (ranging from .817 to .925.), which indicated sufficient internal consistency of reliability (Nunnally, 1978).

Table 3.12

Cronbach's Alpha Results of Main Constructs

No.	Constructs	No of items		Cronbach's Alpha
		Original	Deleted	
1	Perceived media coverage	29	-	.925
2	Green values	18	-	.893
3	Perceived government role	11	1	.879
4	Cognitive dimension of EA	13	1	.817
5	Affective dimension of EA	11	-	.888
6	Conative dimension of EA	11	1	.821
7	Behaviour dimension of EA	11	-	.838

*EA refers to environmental awareness

3.8 Analysis Tools and Techniques

SPSS software was used for performing all preliminary data cleaning and descriptive analysis. Particularly, SPSS was used for outlier detection, assessment the multivariate assumption (normality, linearity, homoscedasticity), multicollinearity, and common method variance. SPSS was also used to run exploratory factor analysis (EFA) for the purpose of determining the dimensionality of constructs.

Smart PLS 2.0 M3 developed by Ringle, Wende, and Will (2005) was used to perform structural equation modeling (SEM). In specific, Smart PLS was used for assessing measurement models and the structural model.

3.8.1 Justifying the Choice of Partial Least Square (PLS-SEM)

Two different approaches have been used in previous research to measure structural equation models: CB-SEM and PLS-SEM approach. Though both approaches tackle the same problem "measurement equations" but they approach parameter estimation differently (Reinartz, Haenlein, & Henseler, 2009). For example, the working principle of CB-SEM focus on having the covariance matrix of sample data close or similar to covariance matrix estimated by the model, while PLS-SEM estimates the model parameters from the sample data to maximize the explained variance for endogenous variables (Chin, 1998; Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014; Reinartz et al., 2009) .

Obviously, the working principles and the applicability of the two approaches have their own influence in different fields of study. This is driven by the fact that these two approaches differ in their objectives of analyses, the statistical assumptions that they based on, and the type of the fit statistics they produce (Gefen, Straub, & Boudreau, 2000).

Because CB-SEM has been the more predominant approach used in previous research, it is strongly advisable that any study using PLS-SEM should provide rationale as to its use (Chin, 1998). Important to note, the suitability of one approach over the other is dependent on the objective of a study, the properties of the data, and the nature of a model (Hair et al., 2014). In the current study, the PLS-SEM approach was chosen for three main reasons below.

Firstly, PLS-SEM was used because one of the measures used in the current study, that was perceived media coverage, was newly developed. This is in accordance with Hair et al. view's (2014) in which, PLS-SEM is of choice when the goal of the analysis is to gain substantial knowledge about the drives of interests. Consistent with

this view but from wider perfective, Chin (1998, p.295) argues that "Depending on the researcher's objectives and epistemic view of data to theory, properties of the data at hand, or level of theoretical knowledge and measurement development, the PLS approach can be argued to be more suitable" in other words, the choice of PLS is driven by the confidence in the structural model or the measures of study as well as the level of understanding the researcher brings to understudied phenomena.

Secondly, Pertinent to measurement development, in a situation where the primary objective of applying structural equation modeling is of prediction and the theory of interest is less developed, PLS is better suited to its counterpart. This is in part driven by characteristic of PLS, in which its regression base (OLS) makes it particularly beneficial for exploratory research purposes (Hair et al., 2014). According to scholars, PLS should be preferred when the emphasis on prediction and theory development (Chin, 1998;Hair et al., 2014; Reinartz et al., 2009).

For instance, though Agenda Setting Theory and Framing Theory are well established, the applicability of these theories related to the association between media coverage and environmental awareness as it was perceived from the public perspective was something new. This in turn made the choice of PLS more pertinent to the context of this study than the CB-SEM that is used to confirm theory rather than to predict the applicability of theory.

Thirdly, the complexity of study model was of concern too. This study went beyond a simple model, in which linear relationships between variables is often modeled using the first generation techniques such as multiple regression analysis using SPSS. This study had a considerably complex model that consisted of structural relations that include two moderating variables with a large number of indicators. PLS can handle much larger models with many latent variables and

indicators or more complex model which consists of moderators, mediators and hierarchical components model (Chin, 1998; Hair et al., 2014). In this respect, PLS-SEM has higher level of statistical power in estimating complex models, and the larger the number of indicators with less bias (Hair et al., 2014). In contrast, the estimation of complex models with many latent variable or indicators is often complicated and difficult with covariance based SEM (CB-SEM) (Hair et al., 2014).

3.9 Summary

This chapter discusses the design of this study, and details the need for quantitative survey methodology. The intended population of the study, the sampling procedures and technique used are identified. The instruments used to measure each of the constructs in the proposed framework and the methods used to collect data are described. The reliability and validity of variables of interest are addressed. The results of pilot study are reported. Finally, the statistical techniques needed to test the proposed hypotheses are discussed.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents data analyses and findings of the study. This chapter is started by reporting the response rate and non-response bias assessment results. This is followed by other important analyses needed for an empirical study. Generally, these analyses included data cleaning (missing data detection, outlier's detection), the assessment of the multivariate assumptions (normality, linearity, multicollinearity, homescedasticity), common method variance assessment, exploratory factor analysis (EFA), measurement model and structural model assessments. While SPSS version 21 was used for the analyses purpose of data cleaning, multivariate assumptions testing, common method variance assessment, descriptive reporting, and EFA, SmartPLS M2 software was used to assess the measurement and structural model. Most importantly, this chapter reports the structural model assessment which corresponds to hypotheses testing.

4.2 Response Rate and Non-Response Bias

To ensure that response rate of distributed sample is enough and valid for data analysis, a total of 768 questionnaires were distributed to respondents in three public universities in the northern region of Malaysia. These namely are Universiti Utara Malaysia (UUM), Universiti Malaysia Perlis (UniMap) and University Sains Malaysia (USM). However, to optimize the response rate, we sought the assistance of librarians of these universities. By doing so, we managed to get completion rate of 749 questionnaires out of 768 distributed. Thus, the 749 returned questionnaires comprised 97% response rate. As these questionnaires were further inspected for incomplete information, 19 questionnaires were identified for not having more than

half of required responses. In line with Hair, Hult, Ringle and Sarstedt (2014) recommendation that in a situation where missing data for a case exceeds 15%, it should be excluded from the data set. Therefore, after excluding unreturned subjects along with those who failed to complete the entire questionnaire, the response rate dropped to 730 questionnaires. The reduction of response rate to 730 questionnaires is believed not affect the required sample size of the study as a minimum of 383 samples were already considered enough for intended population. Thus, the final 730 questionnaires constitute 97 % valid response rate.

However, these 730 questionnaires were randomly split into two equal-halves subsets of 365 cases. The first subset was employed for exploratory factor analysis (EFA) and the second subset was used for confirmatory factor analysis (CFA). The splitting of original data set into two subsets was necessary in the current study as EFA and CFA should be carried out using two different data sets (DeVellis, 2012; Hair, William, Babin, & Anderson, 2014). This, in turn, allows the comparison of the two data sets results to provide an assessment of the robustness of the solution across the sample (Hair et al., 2014). The latter was used for assessing structural model, measurement model and hypotheses testing.

The basis of using split subsamples was driven by the virtue of having two sub-samples, which are most likely to be more similar than using two totally different samples, and that they are more likely to represent the same population than using entirely new sample that might represent slightly different population (DeVellis, 2012). In line with this view, the special conditions that might have been applied to data collection for one sub-sample would also apply equally to the other (DeVellis, 2012). Also, it is worth mentioning that replicating findings by splitting the sample provides valuable information about the scale stability (DeVellis, 2012). On contrary,

using the same data set may not entirely prove to be appropriate for the factorability of the data. In this regards, Kline (2011), indicates that specifying a CFA model based on the results of EFA by using the same data set would not confirms the results of the later. He further attributed this to the EFA results that are susceptible to capitalization on chance variation, and the use of same data set to specify a CFA model based on results of EFA may heighten this problem. For this reason, it is advised to cross checking a factor structure across a different sample and to use the same method, either EFA or CFA, in both samples (van Prooijen & van der Kloot, 2001).

Furthermore, the division of the original sample into two parts is widely used approach and acceptable procedure that has been used to develop measures and cross-checking (validation) findings (Hair et al., 2014; Hair, Black, Babin, Anderson, & Tatham, 2006). According to DeVellis (2012) and Hair et al. (2014), in a situation where a sufficiently large sample is available, the researcher is recommended to divide the sample by splitting it into two halves, and to assess the factor models for each half.

Table 4.1

Response Rate of the Questionnaires

Response	Frequency/Rate
No. of distributed questionnaires	768
Returned questionnaires	749
Returned and excluded questionnaires	19
Returned and usable questionnaires	730
Not returned questionnaires	17
Response rate	97%
Valid response rate	97%

On the other hand, protection against non response bias is crucial as drawing inferences about the population from a sample with none-response may produce biased results (Whitehead, Groothuis, & Blomquist, 1993). Non response biases exists when participants included in the sample fail to provide usable responses and

are different than those who do on the characteristics of interest in the study (Lindner, Murphy, & Briers, 2001).

As survey researchers seek high response rates from participants in a study in order to gain a confidence in generalizing the results to the population under the study (Creswell, 2012), the most widely advised way to guard against non response bias has been the reduction of none response itself (Armstrong & Overton, 1977). In this regards, the personal involvement of the researcher helped to encourage more respondents to fill in the questionnaires and hence increase the response rate.

For the case of this study, some respondents refused to fill in the questionnaire for the reasons of being busy with their assignments, having class at the time of questionnaire distribution, and plain reluctance. The personal involvement of the researcher helped to assuage their reluctance. Questionnaires were distributed and collected back on spot so that there was no big difference between early and late respondents. For this reason, there is no necessity to carry out a non-response bias test. In addition, the response rate of 97% obtained in this study was considered as high and adequate. According to Lindner et al. (2001), there is no difference between respondents and non respondents when a response rate of 85 % and above is achieved.

4.3 Detection and Treatment of Missing Data

Missing data is any systematic event that occurs as result of factors external to the respondent such as data entry errors or data collection problem or any action on the part of the respondent such as failure to answer a question that leads to missing data (Hair et al., 2014). Missing data can have major impacts on any analysis and particularly those of correlational nature. As “dirty” data will almost always produce misleading research findings (Baxter & Babbie, 2004), missing data are a fact of life

in multivariate analysis (Hair et al., 2014). The inspection for missing data revealed that, 30 cases had one missing value, and only 5 cases had two missing values. Altogether, 40 missing values were remedied by using mean substitution as one of the most extensively used methods (Hair et al., 2014). Further, the assessment found these missing data were equivalent to 0.053% (40/75920x100). Missing data rate is considered as acceptable on the basis of Tabachnick and Fidell's (2013) criteria of not exceeding 5 %.

In checking for out of range values, all individual items that make up the scales were inspected through frequency table. Two cases with out of range values were observed in item '7' for media coverage variable and item '5' for conative dimension of public awareness in which an out of range value '22' was keyed in instead of 5. Other 8 cases were also observed in knowledge test section in which values '19', '12', '4', '21', '6', '11', '9' and '4' were keyed in instead of either 1 or 2. These cases were then tracked down in data file, aligned according to the inputs in the code book and the questionnaires were checked for the correct value. After correcting the errors, the frequencies were performed again to double check if data is free from out of range errors. Moreover, early measures were taken also to minimize missing data as much as possible. At early stage, much efforts put into designing a good instrument that all respondents would be able to answer it while at data collection stage, the respondents were briefed on the objective and academic nature of the research.

4.4 Analyses and Findings of Exploratory Factor Analysis (EFA)

Exploratory factor analysis (EFA) was important to run in the context of this study. In particular, EFA was used to validate and determine the latent dimensions of newly developed measure of media coverage. In this regards, validating the constituent's measures of the instrument would work simultaneously to define the underlying

constructs of the measures. According to Hair et al. (2014) and DeVellis (2012), the search for the constructs that underlie a set of items amounts to summarize the information so that the variation could be explained by a smaller set of new or composite variables. However, it is important to note that this study was not intended to examine the links between the resultant factors or dimensions from EFA and the variables of interests. Furthermore, the EFA was also in need to validate the measures of green values and government role as measures on the former still in its preliminary stage while measures of later construct was adapted from different sources.

The EFA was also carried out to the widely used measure of environmental awareness. This is because of different sources of adoptions that made to environmental awareness measure could have possible effects on the underlying dimensionality of the variable (Schriesheim et al., 1993). Subsequent to the EFA implementation, internal consistency reliability test of Cronbach's Alpha (α) was performed on each factor obtained from EFA. This step was needed to preliminary verify if the proposed measures in this study was appropriate before proceeding to later stage of measurement model.

Before the EFA analyses, tests related to data cleaning, assessment of normality, linearity assumptions, and profiles of respondents were conducted. The mentioned above are reported in the following sub-sections.

4.4.1 Preparing and Screening Data (EFA Stage)

Prior to proceeding with EFA, it is of significant importance to ensure that data is in compliance with basic statistical assumptions of EFA. These assumptions need to be met as a pre-requisite to the application of EFA. The violation of these assumptions can cause errors in the EFA finding and hence impinge on the credibility of EFA.

These assumptions are normality test and linearity assessment. Before carrying out these tests, data was screened for outliers.

4.4.2 Outliers Detection and Treatment

Outliers are cases with extreme scores or values that are distinctly different from the remaining cases of the sample. Usually, outliers are unique observations with unusually high or low value on one variable or across variables (Hair al., 2014). Though outliers could be sensitive to any analysis, particularly those of multivariate nature, they could be of benefit for the analysis. For instance, they could be of help in identifying the characteristics of observations that may go unnoticed in the normal course of the analysis (Hair et al., 2014). For this reason, Hair et al. (2014) believe that outliers should not be deleted unless strong evidence indicates that they are barren and not representative of any population in the study. Consequently, it is of significant importance to examine their existence in the data and evaluate the type of influence they could have on the analysis.

As Hair et al. (2014) recommend the inspection and treatment of outliers should be conducted at different levels, Mahanalnobis distance was used in conjunction with standardized Z scores technique to inspect for outliers at both univariate and multivariate levels respectively. The two techniques were used in complement to each other so that a fuller perspective of outliers could be achieved (Hair et al., 2014). In a practical sense, if an outlier was found recurring at both levels, the outlier was considered for deletion. However, in a situation where the outlier was found at one level but was not found at other level, the outlier was kept.

At multivariate level, the Mahalanobis distance was calculated using linear regression in IBM SPSS statistics version 21. A new variable labeled; Mah_1 was created at the end of data view. Next, chi-square was computed using the chi-square

calculator available free online. Given the use of the alpha level of $p < 0.001$ as recommended by Tabachnick and Fidell (2013) and the number of variables of 104, the chi-square value of 154.314 was obtained. Therefore, any case with Mahalanobis distance that is greater than the chi-square value of 154.314 was considered as outlier.

In line with this threshold, the inspection identified 21 cases with Mahalanobis distance greater than chi-square value of 154.314. The results of outlier inspection at Multivariate level are attached in Appendix 4.3, Table A.

The identified 21 cases were further examined using Standardized Z score technique for cross checking their existence at univaraite level. The Z score was calculated for each variable by using descriptive, as an example for government role variable is shown in Appendix 4.3, Table B. Using the criterion of greater ± 4 given the number of variables is considered as large (104) as suggested by Hair et al. (2014), the output revealed that neither the above mentioned 21 cases were recurring nor any other outliers were found at univaraite level. However, all these 21 cases that found at multivariate level were deleted from EFA sample, considering that 365 sample was considerably sufficient for performing EFA. Therefore, the remaining 344 were subjected to EFA.

4.4.3 Normality Assessment

Normality rests upon the assumption that the distribution of the categories or scores on the dependent variable is normal. Basically, the term 'normal' refers to a symmetrical bell-shaped distribution in which the utmost frequencies of scores in the middle and the lowest frequencies towards the extremes (Blaikie, 2003). Normality is one of the most critical assumptions of multivariate analysis. It is the essence of the theory that is used to examine population parameters from data sample (Blaikie, 2003). Though non-

normality can lead to distortion of the analysis results, this problem is less sever with big sample size as the one that is used is this study (Hair et al., 2014).

Even though the use of PLS-SEM does not require the distribution of data to be normal, the normality for all metric variables should be assessed (Hair et al., 2014), as data that deviates considerably from the normal distribution is a problematic in estimating the parameters' significances (Hair et al., 2014).

Normality can be obtained by calculating skewness and kurtosis values to judge the extent to which the data is departing from the normal distribution. Further, a visual inspection of normality shape was used as Tabachnick and Fidell (2013) recommend the inspection of shape distribution, and Hair et al.(2014) suggested the use of both the graphical plots and any statistical tests to assess normality. Nonetheless, normality tests of Kolmogorov-Smirnoc/Shapiro-Wilk was not used due to its shortcoming that is pertinent to sample size, in which unimportant deviation might turn to be technically significant (Garson, 2012; Hair et al., 2006).

Through using the explore option of descriptive statistics in SPSS, the Skewness and Kurtosis were performed. Though perfect distribution of normality with skewsness and kurtosis value of 0 or near to zero is rarely to encounter in social science (Hair et al., 2014; Pallant, 2011), Table 4.2 revealed that all variables of interests achieved normal distribution with skewness and kurtosis values of not greater than ± 2. This is in accordance with Garson's (2012) guideline that skewness or kurtosis that exceed more than +2 or lower than -2 are considered non-normal. In addition, the inspection of normality by histograms and plots by using frequencies and explore methods in IBM SPSS found that all variables of interests showed bell-shaped curve and straight line respectively. This is in compliance with Blaikie's (2003) guideline that bell-shaped curve indicates to normally distributed data, and Pallant (2011), in which a reasonably straight

line denotes to a normal distribution of data. Graphical inspection of normality histograms and plots were exhibited in Appendix 4.4, Figure A and B.

Table 4.2

Values of Skewness and Kurtosis for Constructs under Studied (n = 344)

Constructs	**Skewness**		**Kurtosis**	
	Statistic	Std. Error	Statistic	Std. Error
Perceived Media Coverage	-.271	.131	1.376	.262
Green Values	-.104	.131	.038	.262
Perceived Government Role	-.215	.131	-.103	.262
Environmental Awareness	.138	.131	-.074	.262

4.4.4 Linearity Assessment

Linearity is an important assumption as all multivariate techniques are based on correlation measures of associations (Hair et al., 2014). The essence of this assumption is to indicate to the presence of a straight line relationship between two variables (Pallant, 2011; Tabachnick & Fidell, 2013). In statistical sense, this means that the mean values of the dependent variable for each increment of the independent variable (s) lies along a straight line. Since multiple regression models are based on linear relationship between variables, non-linear effects would not be represented in the equation, and thus resulting in underestimation of the strength of the actual relationships (Hair et al., 2014). Therefore, it is always advised to examine all the relationships to identify any non-linear patterns that my affect the correlation (Hair et al., 2014).

Linearity could be assessed through the inspection of scatter plots (Hair et al., 2014; Tabachnick & Fidell, 2013). The scatter plots were obtained from graph-legacy diagrams-scatter/dot-simple scatter procedures in IBM SPSS statistics 21. The output revealed that all variables of interests exhibited a rough straight line as shown in Appendix 4.5. This indicates that the residuals of independent variables had a

straight-line relationship with the predicted values of outcome variable (environmental awareness). Thus, there was a linear relationship between the independent variables of media coverage, government role and green values at one hand and the dependent variable of environmental awareness at other hand. The data thereby satisfied the linearity assumption of multivariate analysis.

4.4.5 Profile of Respondents (EFA)

Among the 344 respondents for data used for EFA, 24.4% (n=84) were males and 75.6 (n=260) were females. The majority of them (58.4%, n = 201) fell within the age group of 18 - 22 years old. This was followed by respondents of the age groups 23 - 27 (32.6%, n=112), 28 - 32 (4.71%, n =16), 33 -37 (2.3%, n =8), and 38 - 52 (0.21%, n = 7). About 68% of respondents were Malay (n=234); the Chinese, Indian, and Bumiputra respondents constituted about 24.1%, 4.7%, and 2.32% respectively. A percentage of 0.9% was respondents identified as others.

Among the respondent, 45.3% (n=156) were students of UUM, followed by 40.7% (n=140) USM students, and 14% (n=48) UniMAP students. Majority of the respondents (97.4%) were full-time students and only 2.6% were part-timers. The respondents constituted students undertaking courses at different levels, namely Ph.D (6.1%), Masters Degree (12.2%), Bachelor Degree (81.4%), and Diploma (0.3%).

Further, a larger number of respondents (36.3%) were in the second semester, followed by those who were in fourth (20.9%), sixth (18.6%), and first semester (8.4%) respectively. While those in third and eighth semester amounted to 5.2% each, the remaining respondents were those in the fifth (2.6%), seventh (2.3%), and tenth semester (0.1%).

The most respondents were from Kedah (19.8%), followed by Perak (16.6%), Penang (13.4%), Kelantan (11.9%), Selangor (7.8%), Johor (7.6%), Pahang (6.1%),

Terengganu (4.4%), Negeri Sembilan (4.4%), Sarawak (2.3%), Sabah (2.0%), Federal Territory of Putrajaya (1.7%), Perlis (1.2%), and Melacca (0.9%). With regards to respondents' exposure to media, most of them (84 %, n=289) read both newspapers and online news media. About 12.8% (n=44) and 3.2% (11) read only newspapers and only online news media respectively. A summary of respondents' profile is presented in Table 4.3.

Table 4.3

Demographic Characteristics of the Respondents

Variables	Category	Frequency	Percentage (%)
Gender	Male	84	24.4
	Female	260	75.6
	Total	**344**	**100.0**
Age	Below 18 years old	1	0.3
	18 - 22 years old	201	58.4
	23 - 27 years old	112	32.6
	28 - 32 years old	16	4.7
	33 - 37 years old	8	2.3
	38 - 42 years old	3	0.9
	43 - 47 years old	2	0.6
	48 - 52 years old	1	0.3
	Total	**344**	**100.0**
Race	Malay	234	68
	Chinese	83	24.1
	Indian	16	4.7
	Bumiputra of Sabah & Sarawak	8	2.3
	Others	3	0.9
	Total	**344**	**100.0**
University	UUM	156	54.3
	UniMAP	48	14
	USM	140	40.7
	Total	**344**	**100.0**
Program of Study	Ph.D	21	6.1
	Master	42	12.2
	Bachelor	280	81.4
	Diploma	1	0.3
	Total	**344**	**100.0**
Mode of Study	Full time	335	97.4
	Part time	9	2.6
	Total	**344**	**100.0**

Table 4.3 Continued

Semester Of study	Semester 1	29	8.4
	Semester 2	125	363
	Semester3	18	5.2
	Semester 4	72	20.9
	Semester 5	9	2.6
	Semester6	64	18.6
	Semester7	8	2.3
	Semester8	18	5.2
	Semester10	1	0.3
	Total	**344**	**100.0**
State	Penang	46	13.4
	Kedah	68	19.8
	Perlis	4	1.2
	Perak	57	16.6
	Pahang	21	6.1
	Terengganu	15	4.4
	Kelantan	41	11.9
	Selangor	27	7.8
	Melaka	3	0.9
	Johor	26	7.6
	Sabah	7	2
	Sarawak	8	2.3
	Negeri Sembilan	15	4.4
	Wilayah persekutuan putrajaya	6	1.7
	Total	**344**	**100.0**
Media Exposure	Read newspapers only	44	12.8
	Read online news media only	11	3.2
	Read newspapers and online news media	289	84
	Total	**344**	**100.0**

4.4.6 EFA Analysis Procedures

After all preliminary data cleaning and assumptions testing related to EFA were conducted, 344 cases were subject to EFA analysis using SPSS version 21.

In this study, principal component analysis and Promax method were used for extraction and rotation respectively. Promax rotation was opted for its oblique nature which tailored to the study's intention to have correlated factors (Ho, 2006).This rotation also served to discover the theoretically meaningful underlying constructs (Hair et al., 2014; Ho, 2006). Starting with an oblique rotation to check the degree of

correlation between factors is recommendable (Pallant, 2011), because even "if factors are virtually to be orthogonal in a given sample, the oblique rotations will return solutions with essentially orthogonal factors" (Floyd & Widaman, 1995).

Further, the current study followed several rules and threshold for EFA result interpretation. The outcomes of correlation matrix, the Bartlett test of sphericity, and measure of sampling adequacy Kaiser-Meyer-Olkin (KMO) were observed to determine the factorability of the measure. For this purpose, correlation greater than .30 (Tabachnick & Fidell, 2013), Bartlett test of sphericity at a statistical significance of at least p-value less than .05, and minimal KMO of .60 (Pallant, 2011; Tabachnick & Fidell, 2013) were used.

The number of factors (dimensions) to be retained were determined on the basis of Eigenvalue of greater than 1, the total variance explained, and scree-plot test (Pallant, 2011). Particularly, variance extracted of 60% was considered as satisfactory (Hair et al., 2006). Further, the communalities of items were inspected. Commonality is an indication of how much variance each item could predict from the factors underlying it (Tabachnick & Fidell, 2013). While some researchers considered item communality lower than .50 as not having sufficient explanation (Hair et al., 2014), some others view communalities as low as less than .30 as not fitting well with other items in its factor or component (Pallant, 2011). The current study followed the item communality cut-off of .50 and above (Hair et al., 2006), and therefore any item with communality value lower than this threshold was considered for removal.

The use of Promax rotation which is an oblique method, had necessitated interpretation of factors loading in the pattern matrix. Factor loading of .50 was used as the threshold for retaining items (Hair et al., 2006). However, items lower than .50 was also given case-to-case consideration, considering the content validity of the

construct. Further, cross loadings were inspected. The approach of Ferguson and Cox (1993) was followed, in which elimination was considered for an item when a magnitude difference between cross-loadings was less than 0.2. In situation where the difference between the cross-loadings was more than 0.2, the item was retained under the factor in which it had the highest loading.

After having identified the factor structure of the constructs in the EFA stage, internal consistency reliability test of Cronbach's Alpha (α) was performed on each factor extracted to verify if the proposed reflective measurement was appropriate before proceeding to the assessment of confirmatory measurement model. Finally, separate EFA was run for each variables of interest. Such EFA procedure was followed because this study intended for evaluating the dimensionality within each latent constructs themselves (Kumar & Dillon, 1987), and that subjecting all items of all constructs into one EFA run was not appropriate.

4.4.7 EFA Results of Perceived Media Coverage

The results of EFA for media coverage were tabulated in Table 4.4. The inspection for items suitability for EFA revealed many inter-items correlations of .30 and above (Tabachnick & Fidell, 2013), KMO value of .900, and a significant Bartlett test of sphericity (χ^2 = 308.387, df = 300, p <.001). The KMO met the threshold of .60 (Pallant, 2011).

The scale was validated to be a multidimensional construct of six factors with 25 items, reduced from the initially proposed 29 items. The six factors with eigenvalues greater than 1 explained a total variance extracted of nearly 58%. The factor solutions produced from EFA were similar to the initially proposed dimensions. Six components were revealed having eigenvalues greater than 1, respectively predicting 31.7%, 7.5%, 5.5%, 4.7%, 4.4% and 4.1% of the variance explained. The

scree plot showed a clear break after the sixth component before straightening out, thus confirming the presence of six components. Further, all item communalities were all explaining sufficient variance of above .50 (Hair et al., 2006).

Though four items (mc8, mc13, mc 20, mc29) were deleted due to cross loadings, the remaining 25 items still represented the essence of six dimensions of media coverage construct proposed earlier. Of the 25 items, six were items reflecting news sufficiency (mc1, mc2, mc3, mc4, mc 5, mc6), four were items reflecting news prominence (mc9, mc10, mc11, mc12), four were items representing news frequency (mc14, mc15, mc16, mc17), three were items encapsulating news sources (mc7, mc18, mc19), five were items reflecting news attractiveness (mc21, mc22, mc23,mc24, mc25), and three were items for variety of media role (mc25, mc26, mc27). Further, the 25 items were loading significantly on one of the six resultant factors, with all exhibited loading ranged from maximum value of .937 to the minimum value of. 420. The Cronbach's Alpha (α) values for all dimensions were found high, ranging from α = .787 to α = .704. The high loadings demonstrated that the retained 25 items were interchangeable and sufficiently correlated to each other, even after the elimination of items. These results provided some preliminary confirmation as to the reflective measurement of the media coverage construct.

Table 4.4

Exploratory Factor Analysis Results of Media Coverage (n=344)

Items code	Items (25 items; α = .908)	Components					
	News Sufficiency (α = .784)	1	2	3	4	5	6
Mc1	Mass media reports useful information about environmental issues.	.762					
Mc2	The environmental news is always reported in full-length story in the mass media.	.688					
Mc3	Malaysian mass media has taught me a lot about the environmental issues.	.666					
Mc 4	Environmental issues reported often provide background information.	.649					

Table 4.4 Continued

Mc5	Environmental issues are often reported with constructive critics.	.575					
Mc6	Mass media provides adequate reporting on environmental news.	.495					
	News Prominence (α =.736)						
Mc9	The news related to environment is easily found in mass media in Malaysia.		.495				
Mc10	Environmental news often has its own full page.		.632				
Mc11	Environmental news often comes with sufficient photos.		.910				
Mc12	It is common to see environmental issues appear as big headline in mass media.		.585				
	News Frequency (α =.704)						
Mc14	I often see messages about environmental protection in mass media.			.420			
Mc15	Whenever I need to look for information about the environmental preservation in Malaysia, I will try to locate it from the Malaysian mass media.			.746			
Mc16	I can easily find reports of companies' misconducts which spoil the environment in mass media.			.815			
Mc17	It is easy for me to access and read about news on natural environment in mass media.			.495			
	News Sources (α = .721)						
Mc7	Through the mass media, I know about the NGOs and associations that concern about environment.				503		
Mc18	Mass media use number of news sources to validate the reports.				.905		
Mc19	Mass media use a variety of news sources in their reporting on environment issues.				.853		
	News Attractiveness (α =.787)						
Mc21	Environment information provided by the Malaysian media is often accurate.					.589	
Mc22	Environmental news reported in the Malaysian mass media attracts my attention.					.834	
Mc23	I like the way environmental issues is reported in the mass media.					.708	
Mc24	The environmental news often triggers interesting discussions among me and my friends.					.803	
Mc28	I can find environmental news happening all around the world in the Malaysian mass media.					.441	
	Variety of Media Role (α =.717)						
Mc25	Mass media plays important role to remind people on environmental consequences.						.937
Mc26	Environmental news in the mass media is effective to influence people.						.854
Mc27	There is a wide variety of environmental issues reported in mass media of Malaysia (such as air quality, water quality, and land slide, etc.)						.439
	Eigenvalue	7.939	1.042	1.187	1.397	1.879	1.117
	Percentage of Variance Explained (58.244%)	31.75	4.170	4.747	5.586	7.518	4.469

Table 4.4 Continued

Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO)	.900
Bartlett test of sphericity Approx. Chi-Square	3089.387
Df	300
Sig	.000

4.4.8 EFA Results of Government Role

The construct of government role validated to be multidimensional with 10 items. The search for items factorability found most of inter-items correlation were at .30 and above, with Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) greater than .916, and Bartletts Test of Sphericity was significant (χ^2 = 135.423, df=45, P<.001). The communality values of all items were exceeding the required threshold of greater than .50 (Hair et al., 2006), in which all items communalities ranged from .549 to .662.

The EFA resulted in three components with 49.07% and 10.21% of variance per each component respectively, thus explaining approximately 59% of total variance. The Eigenvalue indicated also the existence of two components with eigenvalue exceeding 1. To further confirm the presence of the two components, the Scree plot was inspected. The Scree plot test revealed an obvious break right after the second component before turned to be horizontal, thus assuring the need to extract two components.

As promax rotation was performed, 5 were items capturing the sense of enforcement dimension (Gov1, Gov2, Gov3, Gov4, Gov5), and 5 were items reflecting the legislative prevention and control dimension of government role construct (Gov6, Gov7, Gov8, Gov9, Gov10). Both components showed high loadings, with all items loading significantly on only one component. Besides, the Cronbach's alpha (α) for first component was .819 and .824 for the second component, indicating that both components had high Cronbach' alpha.

Given that government role was adapted heavily from different sources and though the dimensionality of government role was still in its preliminary stage, the high Cronbach's alpha and the high loadings of both components all indicated that it was rational to accept the multidimensionality of government role construct. The results of EFA for government role were shown in Table 4.5.

Table 4.5

Exploratory Factor Analysis Results of Government Role (n=344)

Items code	Items (10 items; α = 883)	Components	
	Enforcement (α = .819)	1	2
Gov1	In Malaysia, government enforces laws to make ordinary people protect environment.	.848	
Gov2	Malaysia has clear strict rules to deal with companies which harm environment.	.869	
Gov3	Malaysia government is doing a good job in promoting green living among public.	.612	
Gov4	Malaysia government encourages people to make report if they notice any misconduct that harms the environment.	.674	
Gov5	Government provides us the list of control agencies which we may report matters related to environment.	.650	
	legislative Prevention and Control (α =.8246)		
Gov6	I can see sufficient green campaigns conducted by government in Malaysia.		.575
Gov7	I have heard that Malaysian government giving funds to research on technology for recycling waste product.		.823
Gov8	I'm satisfied with the environmental policies and implementation in Malaysia.		.683
Gov9	From time to time, Malaysia government launches campaigns on reducing garbage.		.779
Gov10	I often see government agencies cleaning up rivers and lakes.		.861
	Eigenvalue	1.022	4.907
	Percentage of Variance Explained (59.289%)	10.218	49.070
	Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO)	.916	
	Bartlett test of sphericity Approx. Chi-Square	1350.423	
	Df	45	
	Sig	.000	

4.4.9 EFA Results of Green Values

The results of EFA for green values coverage were exhibited in Table 4.6. EFA carried out for green values construct with 18 items validated to be multidimensional. The analysis output showed a good number of items with inter-item correlation greater than .30. The Kaiser- Meyer- Olkin (KMO) Measure of Sampling Adequacy was a commendable (.886), and Bartletts Test of Sphericity was significant (χ^2 = 217.266, df=120, P<.001). These results, along with meritorious items communalities of greater than .50 (Hair et al., 2006) demonstrated that items were appropriate to be factorable.

The analysis identified four components with eigenvalue of more than 1, explaining nearly 62% of total variance, and contributing to 37.48 %, 9.94%, 8.63% and 6.75 % of variance per each component respectively. Further, the inspection of Scree plot confirmed the extraction of four components, in which a clear break in the plot found right after the fourth component before it begun to flattening.

Given that Promax rotation was rerun to obtain a simple structure of components, two items (Green7, Green8) were deleted for having cross-loadings. The remaining 16 items exhibited high loading that ranged from .558 to .796, with all items loading substantially on only one component. Thus out of 16 items, 6 were items denoting to environmental value (Green1, Green2, Green,3, Green4, Green5, Green6), 3 were items representing emotional value (Green10, Green 11, Green12), 3 were items capturing health and image values (Green14, Green15, Green 18) and 4 were items referring to experiential devotion (Green 9, Green 13, Green 16, Green 17). Further inspection for the reliability of resultant components revealed that all components achieved cronbach's alpha (α) of more than .07. In particular, cronbach's alpha for environmental value dimension was .788, .849 for emotional value, .751 for health and image values, and .801 for experiential devotion value.

The interpretation of four dimensions was slightly different from those found in Li et al. scale (2013). As Li and his associates found environmental, health, emotional, and image values as distinct dimensions, this study demonstrated a mix up of these dimensions.

Table 4.6

Exploratory Factor Analysis Results of Green values (n=344)

Items code	Items (10 items; α = .886)	Components			
	Environmental Value (a =788)	**1**	**2**	**3**	**4**
Green1	It is important to me that the products I use do not harm the environment.	.661			
Green2	I always consider the potential environmental impact of my actions.	.766			
Green3	My routine and lifestyle are affected by my concern for environment.	.727			
Green4	I am concerned about wasting the resources of our planet.	.690			
Green5	I would describe myself as environmentally responsible.	.558			
Green6	I am willing to be inconvenienced to take actions that are more environmentally friendly.	.633			
	Emotional Value (α = 849)				
Green10	Using green products makes me feel relaxed.		.735		
Green 11	Using green products gives me a feeling of harmony with nature.		.707		
Green12	Using green products makes me feel good.		.778		
	Health and Image Value (α =.751)				
Green14	Acting environmentally friendly can help me to gain a pro- environment self- image.			.757	
Green15	Using green products can help me own a good image.			.771	
Green 18	Using green products is a guarantee of the high quality of life.			.705	
	Experiential Devotion Value (α =.801)				
Green 9	Using environmentally friendly products can reduce the pollution of the environment.				.717
Green 13	I respect people who protects natural environment.				.796
Green 16	Green products contain less harmful ingredients to human.				.575
Green 17	Taking care of the nature environment is important to secure our health and safety.				.927
	Eigenvalue	5.998	1.080	1.381	1.592
	Percentage of Variance Explained (62.882%)	37.488	6.752	8.634	9.948
	Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO)	.886			
	Bartlett test of sphericity Approx. Chi-Square	2170.266			
	Df	120			
	Sig	.000			

4.4.10 EFA Results of Environmental Awareness

46 items capturing cognitive, affective, cognitive and behavioral dimensions of environmental awareness scale were validated to be multidimensional using EFA. The inspection for appropriateness of data to be factorized revealed the presence of a good number of items with coefficients of .3 and above. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .911, and Bartletts Test of Sphericity was significant (χ^2 = 486.007, df=630, P<.001). The communalities of all items were all above the minimal cut-off of .50 suggested by (Hair et al., 2006).

EFA identified four components with eigenvalue grater than 1. The four components explained nearly 47.30 % of total variance, with each component contributed 26.70%, 7.98%, 7.366 and 5.243 of variance respectively. Prior to extracting four components, the scree plot inspected visually to assure the existence of four components. The scree plot test revealed an obvious break right after the fourth component before the axis of the plot started to flatten. Thus, four components were confirmed to retain.

Given that Promax rotation was used, the search for simple structure of components required the rotation to be done recurrently. As results, two items were deleted from cognitive dimension (Cog6, Cog13), 5 items were eliminated from conative dimension (Cona1, Cona2, Cona3, Cona5, Cona10), and 3 items were eliminated from behaviour dimension (Beha5, Beha7, Behav9). All together, 10 out of 46 items were deleted. The deletion of these items was indispensable as they had cross-loading and some items had no loading at any one of the four components. The remaining 36 items showed significant loading of more than .33 as shown in Table 4.7.

Also, further inspection for the reliability of resultant components found that all the dimensions of interest scored above the threshold of .70 as suggested by (Pallant, 2011). The Conbach's alpha for all components ranged from .893 to .785 as indicated in

table 4.7. The interpretation of cognitive, affective, conative and behaviour dimensions in this study was consistent with Leeming et al. (1995) as well as Maloney et al. (1975).

Table 4.7

Exploratory Factor Analysis Results of Environmental Awareness (n=344)

Items code	Items (10 items; α = .912)	Components			
	Cognitive Component (α = 8.32)	**1**	**2**	**3**	**4**
Cog1	Human populations are approaching the limit the earth can support.	.495			
Cog2	Humans do not have the right to modify the natural environment to suit their needs.	.635			
Cog3	When humans interfere with nature it often produces disastrous consequences.	.698			
Cog4	Humans have severely abused the environment.	.738			
Cog5	Plants and animals have equal right (to exist) as humans.	.530			
Cog7	It is good that human are still subject to the laws of nature.	.501			
Cog8	Environmental degradation is serious.	.650			
Cog9	Resources from natural environment are not as abundant as we have thought.	.721			
Cog10	The balance of natural environment is very delicate and easily upset.	.703			
Cog11	If human continue to deal harshly with the natural environment, we will soon experience a big environment disaster.	.661			
Cog12	Knowledge (Breadth of knowledge)	.461			
	Affective Component (α = 8.93)				
Affect1	I am frightened to think people don't care about the environment.		.652		
Affect2	I get angry about the damage pollution does to the environment.		.681		
Affect3	It makes me happy when people recycle used bottles, cans, and paper.		.726		
Affect4	I get angry when I think about companies testing products on animals.		.517		
Affect5	It makes me happy to see people trying to save energy.		.802		
Affect6	I'm worried about environmental problems.		.748		
Affect7	I am frightened about the effects of pollution on my family.		.756		
Affect8	I feel upset when I see people throwing away things that could be recycled.		.739		
Affect9	It makes me sad to see houses being built where animals used to live.		.669		
Affect10	It frightens me to think how much energy is wasted.		.570		
Affect11	It upsets me when I see people using too much water unnecessarily.		.704		
	Conative Component (α =7.85)				
Cona6	I'm willing to donate RM30 for raising fund to help the environment.			.608	

Table 4.7 Continued

Cona7	I'm willing to go from house to house to pass out environmental information.			.805	
Cona8	I'm willing to write letters asking people to help reduce pollution.			.828	
Cona9	I'm willing to go from house to house asking people to recycle.			.829	
Cona11	To save water, I think I'm willing to use less water when I bathe.			.449	
	Behavioral Component (α =.811)				
Behav1	I always consider the polluting effect of a product before buying.				.699
Behav2	I have asked my parents not to buy products made from animal fur.				.763
Behav3	I always make a special effort to buy products in recyclable containers.				.724
Behav4	I often switch products for environmental reasons.				.712
Behav6	To save water, I turn off water in the sink while brushing my teeth.				.486
Behav8	I have asked others what I can do to help reduce pollution.				.551
Behav10	I don't like to leave the refrigerator door open while deciding what to get out.				.558
Behav11	I have asked my family to recycle some of the things we use.				.604
Cona4	I'm willing to use less air conditioning to help save energy.				.506
	Eigenvalue	2.875	9.614	1.888	2.652
	Percentage of Variance Explained (47.301%)	7.985	26.707	5.243	7.366
	Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO)	.911			
	Bartlett test of sphericity Approx. Chi-Square	4862.007			
	Df	.630			
	Sig	.000			

4.5 Analysis and Findings for Measurement Model

In this study, the measurement models and structural models are assessed using Partial Least Square structural Equation Modeling (PLS-SEM). SEM is associated with two distinct classes of statistical techniques: Covariance based analysis that is used, among others, in LISREL, EQS and AMOS – and partial least squares which is variance-based analysis and employed in PLS (Gefen et al., 2000). Of these two methods, the study used the variance based- analysis technique (PLS). This is driven by the virtue of PLS to test unidimensionality through using confirmatory factor

analysis (Gefen et al., 2000). It is thus confirming the unidimentionality or factorial validity of the constructs that were identified in the EFA stage.

Put simply, the measurement models (outer models) express the relationship between constructs (latent variables) and their pertinent indicators, that is, referred as Mode "A" Measurement in PLS. While the structural models (inner models) describe the relationship among the latent variables, that is referred as Mode "B" Measurement in PLS (Gefen et al., 2000; Hair et al., 2014). The working principle of SEM depends on demonstrating psychometric properties of measurement models. As measurement models must prove adequate levels of validity and reliability before proceeding to testing the relationship in structural models (Fornell & Larcker, 1981), the structural relationships among variables will only be as reliable and valid as the measurement models (Hair, Hult, et al., 2014; Hair, William, et al., et al., 2014).

Moreover, specifying the modeling approach is of important repercussion in determining path models (Hair et al., 2014). In this regards, two approaches are used to measure latent or unobservable variables: the reflective measurement and the formative measurement (Gefen et al., 2000; Hair et al., 2014).

An important characteristic of PLS-SEM is that it supports both types of measurements (Gefen et al., 2000; Gerbing & Anderson, 1988; Hair et al., 2014). Compared to formative measures, the base of reflective measures is the classical test theory, in which measures represent the effects or manifestations of an underlying construct, according to (Hair et al., 2014). Therefore, important characteristics of reflective measures as representation of the construct are that they should be correlated, unidimensional, causing the measures (indicators) and interchangeable, in which a change in one of the measures (items) would not change the meaning of the construct (Gefen et al., 2000; Hair et al., 2014).

For this study, the reflective perspective was adapted over the other. This adaptation is determined by the nature and conceptualization of constructs, in addition to the objective of the study to test theories with respect to variables of inertest (Gefen et al., 2000; Hair et al., 2014). Prior to proceeding to measurement models (SEM analyses), data was subject to all preliminary screenings and assessment of multivariate assumptions. These assessments included data cleaning, detection and treatment of outliers, assessment of normality and linearity. Subsequent to these initial screenings were the assessments of multicollinearity, homoscadasticity and common method bias. In particular to missing values and out of range values, the whole dataset were inspected and treated before splitting it into two subsamples. The remaining assessments were conducted using the IBM SPSS software.

4.5.1 Preparing and Screening Data (Measurement Model Stage)

The use of data screening procedures in quantitative research is essential. In particular, the importance of data screening governed by the correlational nature of this study. Among the data screening approaches used in quantitative research are detection and treatment of missing values, checking out of range values, identification of outliers and test of normality. Working on these procedures is "investments in multivariate insurance" that confirm the results generated from the statistical analysis are certainly valid and accurate" (Hair et al., 2014, p.35). Of more importance, these procedures should be carried out before running any statistical analysis. Failure to do this may completely mess up the analysis or produce distorted results (Pallant, 2011). However, some of these assumptions were discussed briefly as they elaborated earlier in more details in EFA stage. Prior to performing these tests, data was screened for outliers.

4.5.2 Detection and Treatment of Outliers

Outliers' detection were conducted at two different levels: Mahalanobis distance used in conjunction with standardized Z scores to inspect for outliers at both multivariate and univaraite levels respectively

At multivariate level, Mahalanobis distance was calculated using linear regression in IBM SPSS Statistics version 21. At the end of SPSS output, a new column called; Mah-1 was created. Correspondingly, chi-square was computed using online free calculator. Given that alpha level is $p < 0.001$ as suggested by Tabachnick and Fidell (2013), and the number of items is 104; the threshold of 154.3140 was obtained. Going by the threshold of 154.3140, any case with the Mahalanobis distance greater than 154.3140 was considered as outlier. As results, the inspection identified 24 cases with Mahalanobis distance greater than 154.3140 as shown in appendix 4.6, Table A. However, the treatment of these cases was subject to outcome of standardized Z scores. This is because both Mahalanobis distance standardized Z scores Techniques were used to complement each other as to capture a fuller understanding of outliers at different levels (Hair et al., 2014). Therefore, the identified 24 cases were further examined at univariate level using standardized Z scores Technique.

From descriptive method in SPSS, Z score was calculated for each variable. Using the cut-off of greater ± 4 as recommended by Hair et al. (2014), case number 61, 77, 147, 172 and 288 were all greater than ±4. As these five cases were found recurring at both univariate and multivariate level, there were deleted from the analysis. Thus, given that five out of 365 cases were deleted, the subsequent analysis was conducted base on 360 cases only. An example for outliers at univaraite (For government role only given the space limitation) was shown in Appendix 4.6, Table B.

4.5.3. Normality Test

To assess normality of data, measures of skewness and kurtosis along with inspection of distribution shape were used as recommend by Tabachnick and Fidell (2013) .

From descriptive statistics option in SPSS, the Skewness and Kurtosis were performed. Using the guideline of Hair et al. (2014) , in which data with skewness and kurtosis of less than ± 1 are considered normal, Table 4.8 revealed that all variables of interest scored skewness and kurtosis of less than ± 1. Further inspection of normality by histograms and plots through using frequencies and explore methods in SPSS, found that all variables of study exhibited bell-shaped curve and straight line as indicated by Blaikie (2003) and Pallant (2011). Thus, data was satisfied normality assumption of multivariate analysis. Graphical inspection of normality histograms and plots were exhibited in Appendix 4.7, Figure A and B.

Table 4.8

Values of Skewness and Kurtosis for Main Constructs

Constructs	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Media Coverage	-0.211	0.129	0.651	0.256
Green Values	-0.21	0.129	0.056	0.256
Government Role	-0.289	0.129	0.221	0.256
Environmental Awareness	-0.096	0.129	0.249	0.256
Cognitive	-0.133	0.129	-0.345	0.256
Affective	-0.418	0.129	0.117	0.256
Conative	0.171	0.129	0.3	0.256
Behaviour	-0.197	0.129	0.247	0.256

4.5.4 Assumption of linearity

Linearity assumption indicates to the presence of a straight line relationship between two variables (Pallant, 2011; Tabachnick & Fidell, 2013). To fulfill the requirement of linearity assumption, researchers advised the inspection of scatter (Hair et al.,

2014; Tabachnick & Fidell, 2013). Linearity was examined using diagrams-scatter/dot-simple scatter procedures in IBM SPSS statistics 22. The scatter plots indicated that all variables of interest exhibited a nearly straight line as in shown in appendix 4.8 This is in line with the guidelines of Pallant (2011) and Tabachnick and Fidel (2013), in which a rough straight line denotes the presence of linearity between two variables. Thus, the data of the study met the assumption of linearity of multivariate analysis

4.5.5 Multicollinearity

The purpose of screening for multicollinearity is to identify the extent to which the independent variables vary in their power to explain the dependent variable. Multicollinearity points to the correlation among independent variables. According to Tabachnick and Fidell (2013), Mutlticollinearity exists when variables are strongly correlated or when variables are redundant, in which one of the variables is a combination of other variables. Supposedly, independent variables are believed to be highly correlated to the dependent variable, and not to each other. However, in situation where multiconllinearity occurs, it is difficult to ascertain the predictive power of any independent variable as each independent variable has similar variance in the outcome (Field, 2009; Hair et al., 2014). In particular, mulicollinarity could be a potential threat to multiple regression as simple regression requires only one predictor (Field, 2009) .

One way to identify multicollinearity is to inspect the correlation among all independent variables. By using cut-off threshold of .7 and above (Hair et al., 2014; Pallant, 2011), the correlation in Table 4.9 indicates the absence of multicollinearity among all independent variables. The correlation between media coverage and green

values is .417, while the correction between media coverage and government role is .633, in which all are less than 0 .7 criteria.

Table 4.9
Correlations for the Constructs under Studied

Constructs	Media Coverage	Green Values	Government Role	Environmental Awareness
Media Coverage	1			
Green Values	.417**	1		
Government Role	.633**	.233**	1	
Environmental Awareness	.388**	.703**	.233**	1

** Correlation is significant at the 0.01 level (1-tailed).

Another approach of assessing multicollinearity is through examining the Tolerance and Variance Inflation Factor (VIF). Tolerance represents the degree to which an independent variable is not predicted by other independent variables. On contrary, Variance Inflation Factor (VIF) denotes whether an independent variable is highly correlated with other independent variables (Field, 2009). Quantifiably put, the lower level of tolerance against higher level of VIF is an indication to multicollinearity presence. In this regards, many researchers defer on cut-off points of less than .10 for tolerance coupled with VIF above 10 (Field, 2009; Hair et al., 2014; Pallant, 2011). However, the current study interpreted multicollineartity using VIF cut-off of 10. Going by this, Table 4.10 reveals that the VIF values for all variables of interest are 1.915, 1.213, and 1.673 respectively, all of which are less 10. Thus, all the variables did not violate the multiconllinearity assumption.

Table 4.10

Variance Inflation Factor Values for the Constructs under Studied

Variables	Collinearity Statistics
	VIF
Media Coverage	1.915
Green Values	1.213
Government Role	1.673

a. Dependent Variable: Environmental Awareness

4.5.6 Assessing Assumption of Homoscedasticity

This assumption is essential for proper application of multivariate analysis. It is mainly related to dependence relationships between variables, in which the dependent variable (s) should have equal degrees of variance across the range of independent variables(s) (Hair et al., 2014). Put another way, when an IV -DV relationship manipulated, it is expected that the variance in dependent variable scores is explained by even distribution of scores across the independent variable (s). It thus means that every independent variable contributes equally to the variation in the dependent variable scores. In situation where the variability across the values of independent variables are uneven, the hypothesis testing become more stringent or more insensitive (Hair et al., 2014).

To test homoscedasticity assumption, a visual inspection of scatter plot was used. For data to be homoscedastic, the scatter plot should "show a fairly even cigar shape along its length" (Pallant, 2011, p.126). As the scatter plots in appendix 4.6 exhibited cigar shape, this indicates to an equal variance of scores across independent variables. The data thereby satisfied the Homoscedasticity assumption of multivariate analysis.

4.5.7 Common Method Variance

The goad of examining the common method variance issue is to determine the degree of bias that may exist in the study measures. Many researchers of the view that common method variance, in which variance is related to measurement approach rather than the effect of the constructs of interest, is a problematic in behavioral studies (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In particular, when similar methods are used to measure the correlation between variables, the measurement errors can arise, resulting in a bias correlation (Podsakoff et al., 2003; Sharma, Yetton, & Crawford, 2009). It is advised therefore to guards again measurement errors in research to avoid drawing wrong conclusions about the hypothesized relationships. According to Doty and Glick (1998, p.374), 'conclusions from research that lacks sufficient construct validity may be based on artifacts or inadequacies in the research rather than on theoretically specified relationships among constructs'.

To assess the common method variance in the data, Harman's Single Factor test as one of the most commonly used techniques (Podsakoff et al., 2003) was employed. Through the exploratory factor analysis, all the relevant items were loaded onto a single factor with no factor rotation to produce new factor that explain the variability of data. The output indicates that the maximum variance that explained by single factor is 20 %. According to Eichhorn (2014), for data to be considered free from common method bias, the variance explained by single factor should be less than 50% of variance. Borrowing from this submission, it is conclude that data set does not suffer from common method bias because the variance explained by single factor is less than 50%.

4.5.8 Profile of Respondents for Measurement Model

As shown in Table 4.1, the respondents were made up of 78.3% females (n = 282) and 21.7% (n=78) males. Among the respondents, more than half of them (58.9%; n = 212) aged between 18 to 22 years old. This is followed by those in the age group of 23 – 27 (31.1%; n =113), 28 to 32 (4.7%; n=17), 33 to 37 (2.8 %; n=10), 43- 47(.6%; n=2), and 38 to 42 years (1.4 %; n=5). There was only .3% (n=1) who was below 18 years.

About 65% were Malay (n=234), followed by Chinese (25%, n=90), Indian (6.4%, n=23), and Bumiputra of Sabah and Sarawak (2.2%; n=8). About 45.8% of the respondents were students from UUM (n=165); this is followed by 40% from USM (n=144), and 14.2% from UniMAP (n=51). Majority of them (81.9%) studied bachelor degree (n=295). Some 10.3% were in the master degree (n=37), followed by 7.5% in the doctorate programmes (n=27). Only one was at the diploma level.

In addition, 98.3% were full-timers, while 1.7% was part-timers. Further, about 33.1% (n=119) of them studied in the second semester. This followed by those in the fourth (23.9%), sixth (18.3%), first (10%), eighth (5.8%), third (4.4%), and tenth (.3%) semesters.

Additionally, an analysis of respondents by state revealed that respondents distributed across different states of Malaysia. The most respondents came from Kedah (17.2%), followed by those from Perak (16.4%), Penang (12.5%), Kelantan (10.8%), Selangor (10.3%), Johore (6.1%), Negeri Sembilan (5.8%), Pahang (5.6%), Perils (1.4%), Melaka (2.2%), and Sabah and Wilayah Persekutuan Putrajaya (2.5% each).

With regards to respondents' exposure to media, most of them (84%, n=304) read both newspapers and online news media, while 13.1% (n=47) and 2.5% (n=9)

read only either newspapers or only online news media respectively. A summary of respondents' profile is presented in Table 4.11.

Table 4.11

Demographic Characteristics of the Respondents (PLS Stage)

Variables	Category	Frequency	Percentage (%)
Gender	Male	78	21.7
	Female	282	78.3
	Total	360	100.0
Age	Below 18 years old	1	.3
	18 - 22 years old	212	58.9
	23 - 27 years old	113	31.4
	28 - 32 years old	17	4.7
	33 - 37 years old	10	2.8
	38 - 42 years old	5	1.4
	43 - 47 years old	2	.6
	Total	360	100.0
Race	Malay	234	65
	Chinese	90	25
	Indian	23	6.4
	Bumiputra of Sabah & Sarawak	8	2.2
	Others	5	1.4
	Total	360	100.0
University	UUM	165	45.8
	UniMAP	51	14.2
	USM	144	40
	Total	360	100.0
Program of Study	Ph.D	27	7.5
	Master	37	10.3
	Bachelor	295	81.9
	Diploma	1	.3
	Total	360	100.0
Mode of Study	Full time	354	98.3
	Part time	6	1.7
	Total	360	100.0
Semester of study	Semester 1	36	10
	Semester 2	119	33.1
	Semester3	16	4.4
	Semester 4	86	23.9
	Semester 5	8	2.2
	Semester6	66	18.3
	Semester7	7	1.9
	Semester8	21	5.8
	Semester10	1	.3
	Total	360	100.0

Table 4.11 Continued

State	Penang	45	12.5
	Kedah	62	17.2
	Perlis	5	1.4
	Perak	59	16.4
	Pahang	20	5.6
	Terengganu	13	3.6
	Kelantan	39	10.8
	Selangor	37	10.3
	Melaka	8	2.2
	Johor	22	6.1
	Sabah	9	2.5
	Sarawak	11	3.1
	Negeri Sembilan	21	5.8
	Wilayah persekutuan putrajaya	9	2.5
	Total	360	100.0
Media Exposure	Read newspapers only	47	13.1
	Read online news media only	9	2.5
	Read newspapers and online news media	304	84.
	Total	360	100.0

4.5.9 Assessment Criteria of Reflective Measurement Model

Having identified factor structure of constructs in EFA stage, CFA was conducted using PLS to assure the validity of discovered structures. In the process of model validation, several quality criteria concerning the reliability and validity of reflective measurement model are evaluated. These criteria are assessed at both indicator and construct level. Following the validation guidelines of Henseler, Ringle and Sinkovics (2009) in particular, this study was assessed the reflective measurement model for indicator reliability, internal consistency reliability, convergent validity, discriminant validity of construct and discriminant validity of indicator.

Indicator reliability represents the individual items reliability at indicator level. It indicates the extent to which an indicator or a set of indicators measure

consistently what it assumes to measure (Urbach & Ahlemann, 2010). Indicators reliability can be established by assessing the standardized outer loadings or the correlations between each indicator and its corresponding latent variable. Several criteria are used to accept an indicator as a constituent of latent variable (Hair et al., 2014). Amongst these are the thresholds of greater than 0.707 (Carmines & Zeller, 1979), greater than 0.7 (Henseler et al., 2009), greater than 0.708 (Hair et al., 2014), and greater than 0.5 or 0.6 (Chin, 1998). This study however followed the guideline of Hair et al. (2014), in which a cut-off of 0.708 or higher is taken to consider an item as reliable. However, indicators with outer loadings between 0.40 and 0.70 were considered for deletion if their deletion lead to an increase in the composite reliability or when the average variance extracted (AVE) above the recommended threshold value.

Nevertheless, this study took also into account other exceptional considerations as for newly developed scales (Hulland, 1999) and when scales were applied in different contexts (Barclay, Higgins & Thompson, 1995, as cited in Rolddn & Sinchez-Franco, 2012). For instance, (Chin, 1998) noted that loading of 0.5 or 0.6 may still be acceptable when additional indicators still exist in the block for comparison. The like exception is also found in the guideline of Hulland (1999), in which loading as low as .40 is also acceptable for a study of exploratory design. However, indicators with loadings of lower than .40 were eliminated (Hair, Ringle, & Sarstedt, 2011).

The Internal consistency reliability is the reliability at construct level. In this study, it was inspected using composite reliability. The use of this type of reliability was more suitable for the study over the traditional Cronbach alpha. Given that Cronbach alpha assumes that all observed variables have equal loadings on a

construct, it provides sever estimation of reliability (Hair et al., 2014). On contrast, PLS-SEM overcomes this shortcoming by prioritizing individual items according to their loadings on a construct, and hence resulting in more reliable composite (Henseler et al., 2009). However, composite reliability was interpreted the same way as Cronbach alpha. This study followed the recommendation of (Nunnally, 1978), in which internal reliability consistency should be above 0.70 in general. More specifically, the study followed also the reliability values of 60 to 70 and 70 to 80 in exploratory and advanced research stages respectively as appropriate. Important to note, as very high reliability values of 0.95 or above are not recommendable, as such level of reliability might indicate to items redundancy, composite reliability below 0.60 is considered as lacking internal consistency reliability (Hair et al., 2014).

Convergent validity measures the extent to which "a set of indicators represents one and the same underlying construct, which can be demonstrated through their unidimensionality" (Henseler et al., 2009, p.299). In this study, Fornell and Larcker's (1981) Average Variance Extracted (AVE) criterion was used to examine convergent validity. It indicates that a latent construct could explain more variance of its indicators relative to the amount due to measurement errors (Chin, 1998; Hair et al., 2014). Therefore, this study was used an AVE with value greater than 0.50 as a sufficient level of convergent validity, as it indicates that the latent construct explains more than half of its indicators' variance (Hair et al., 2011).

Having established convergent validity, the study proceeded with assessment of discriminant validity. Discriminant validity represents "the degree to which the measures of different constructs differ from one another" (Urbach & Ahlemann, 2010, p.19). In the current study, while cross loading was used to assess discriminant validity of indicators (Chin, 1998), Fornell and Larcker's (1981) criterion was

employed to inspect discriminant validity at construct level. By cross loading approach, discriminant validity is obtained when indicator's loading is higher for its designated construct than any of other constructs (Chin, 1998). On other hand, following Fornell and Larcker's (1981) criterion, discriminant validity is supported when the square root of AVE for one construct is greater than its correlation to all other constructs.

It is of significant importance to note that this study applied the same validity criteria used for first order factors to second order factors. By analogy, tests of validity for a higher order factor should follow the same process that is employed to assess the validity of lower order factor (Chin, 2010). This is as to ascertain that the validity of the reflective lower-order factors are actually taped into the same underlying higher-order factors (Chin, 2010). Chin rationalizes it further by asserting that "because a second order factor is modeled as being at a higher level of abstraction and reflected by first order factors, it needs to be related with other factors that are at a similar level of abstraction independent of whether these other factors are inferred from measured items or other first order factors" (p. 667).

It is also important to note that all the constructs in this study are of the second-order. Therefore, the repeated-indicator approach as recommended by Becker, Klein, and Wetzels (2012) was used to specify the measurement model. By employing this approach, all the items used to estimate the first-order constructs were repeatedly used for the estimation of second-order constructs.

Furthermore, for the reasons of discriminant validity, measurement model was run for each construct separately. This need is understood given that all the constructs in the current study are of second order. In particular, the very requirements for discriminant validity entail that constructs to be meaningfully distinct from each other,

yet they are sufficiently correlated (Hulland, 1999). Take media coverage construct as an instance. This construct consists of six dimensions (constructs) namely, news sufficiency, prominence, frequency, attractiveness, news sources and variety. Thereby, it is important that discriminant validity would confirm such that six dimensions are distinct from each other and yet correlated. Bedside, running and reporting all second order constructs simultaneously in a single table may case complication. Therefore, separate measurement models were run each for media coverage, green values, government role and environmental awareness construct.

4.5.10 Measurement Model Results of Media Coverage

The 25 items remaining from the previous EFA stage were all retained. Depicted in figure 4.1 is the measurement model of media coverage, a second-order construct with six first-order constructs. All evidence of reliability and validity of media coverage, at first-and second-order constructs, are tabulated in Table 4.12. In particular, the results showed that all the items of the first-order constructs were found reliable, carrying loadings of.593 to.864, with many loaded above .70 and some approached .70. Likewise, sufficient internal consistency reliability were also attained in all the first-order constructs namely, news sufficiency (Pc = .846; α =.846), prominence (ρ_c = .839; α = .744), frequency (ρ_c =.841; α = .748), news sources (ρ_c = .828; α = .681), attractiveness (ρ_c= .853; α = .783), and variety (ρ_c= .851; α = .739).

Correspondingly, at second-order, while reliability of the indicators was evident (standardized loadings between .725 and .826), media coverage was also found reliable at the construct level (composite reliability: .925) Thus, it was concluded that media coverage construct was sufficiently reliable. Further, all constructs of first- and second-order media coverage attained satisfactory convergent

validity (AVE values of .539 to .656), except news frequency construct (AVE = .478). This AVE value was slightly below the threshold of .50. However, it was still considered adequate given its composite reliability was higher than .60 (Fornell & Larcker, 1981).

Table 4.13 and 4.14, discriminant validity at the construct and indicator levels was evident. In the former, the square root of AVE for each construct was greater than its correlation with other constructs. Likewise, Table 4.13 shows that the loading for each indicator was the highest on its designated construct compared to its other cross loadings. In addition, all the loadings were significant at the level of P< .0001 as demonstrated in Table 4.14.

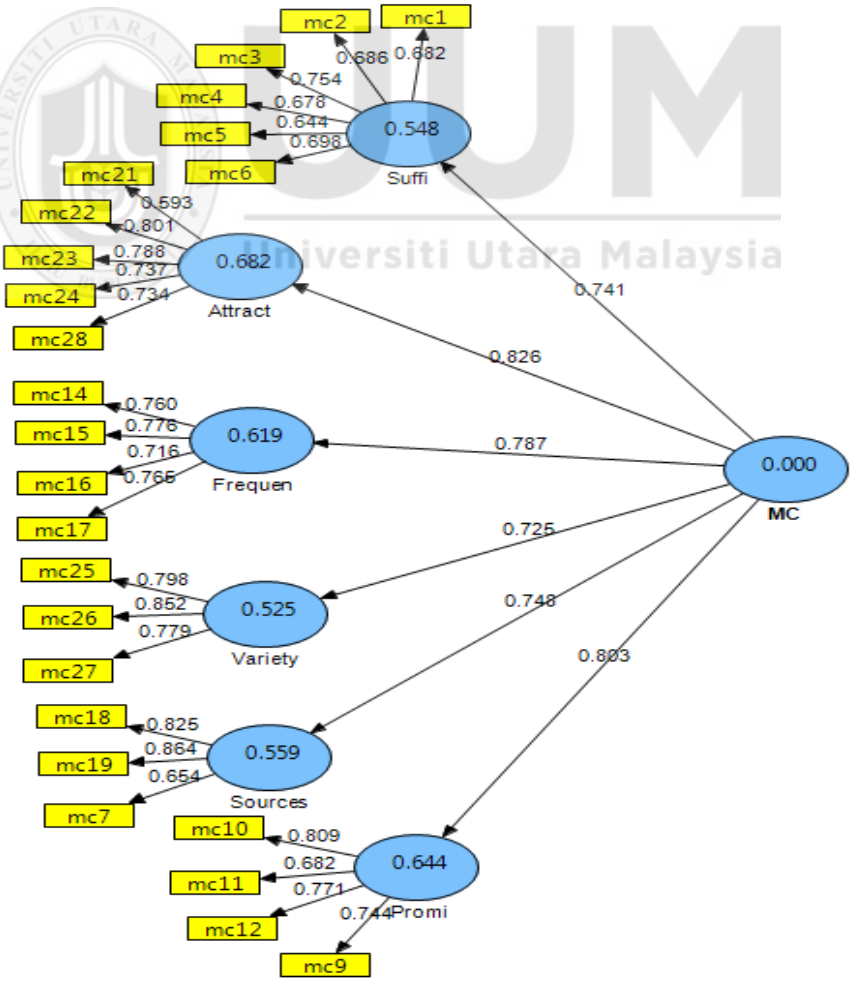

Figure 4.1. Measurement model of media coverage

Table 4.12

Media Coverage: Item Standardized Loadings, AVE, Composite Reliability, and Cronbach's Alpha

Constructs	Items	Standardized loading	AVE	Composite Reliability	Cronbach s Alpha
Sufficiency (Suffi)	mc1	0.682	0.478	0.846	0.781
	mc2	0.686			
	mc3	0.754			
	mc4	0.678			
	mc5	0.644			
	mc6	0.698			
Prominence (Promi)	mc9	0.744	0.567	0.839	0.744
	mc10	0.809			
	mc11	0.682			
	mc12	0.771			
Frequency (Frequen)	mc14	0.760	0.570	0.841	0.748
	mc15	0.776			
	mc16	0.716			
	mc17	0.765			
News sources (Sources)	mc18	0.825	0.619	0.828	0.681
	mc19	0.864			
	mc7	0.654			
Attractiveness (Attract)	mc21	0.593	0.539	0.853	0.783
	mc22	0.801			
	mc23	0.788			
	mc24	0.737			
	mc28	0.734			
Variety of media role (Variety)	mc25	0.798	0.656	0.851	0.739
	mc26	0.852			
	mc27	0.779			
Construct	**Items**	**Standardized loading**	**AVE**	**Composite Reliability**	**Cronbach s Alpha**

Table 4.12 Continued

Media Coverage	Suff	0.741	0.597	0.925	0.915
	Promi	0.803			
	Freq	0.787			
	Sources	0.748			
	Attract	0.826			
	Variety	0.725			

Table 4.13

Media Coverage: Correlations and Square Root of AVE

	Attract	**Frequen**	**Promi**	**Sources**	**Suffi**	**Variety**
Attract	(0.734)					
Frequen	0.588	(0.755)				
Promi	0.560	0.588	(0.753)			
Sources	0.529	0.543	0.531	(0.787)		
Suffi	0.463	0.424	0.590	0.475	(0.691)	
Variety	0.619	0.513	0.420	0.499	0.404	(0.810)

Note: values in parentheses along the diagonals are square root of AVE for each construct. Off-diagonal elements are correlations amongst the constructs.

Table 4.14

Media Coverage: Cross loadings and Loadings' Significance

Items	**Suffi**	**Promi**	**Frequen**	**Sources**	**Attract**	**Variety**	**T value**	**p value**	**Sig**
mc1	**0.682**	0.385	0.253	0.354	0.341	0.346	19.254	0.0000	p < 0.001
mc2	**0.686**	0.392	0.227	0.244	0.238	0.150	17.953	0.0000	p < 0.001
mc3	**0.754**	0.428	0.358	0.336	0.366	0.322	28.123	0.0000	p < 0.001
mc4	**0.678**	0.391	0.255	0.254	0.279	0.254	17.248	0.0000	p < 0.001
mc5	**0.644**	0.376	0.265	0.280	0.290	0.228	15.421	0.0000	p < 0.001
mc6	**0.698**	0.464	0.370	0.462	0.378	0.337	25.575	0.0000	p < 0.001
mc9	0.519	**0.744**	0.378	0.410	0.419	0.315	23.582	0.0000	p < 0.001
mc10	0.496	**0.809**	0.478	0.423	0.423	0.279	33.948	0.0000	p < 0.001
mc11	0.372	**0.682**	0.431	0.373	0.392	0.325	18.084	0.0000	p < 0.001
mc12	0.385	**0.771**	0.484	0.391	0.451	0.350	29.453	0.0000	p < 0.001
mc14	0.319	0.484	**0.760**	0.405	0.485	0.353	30.295	0.0000	p < 0.001
mc15	0.321	0.455	**0.776**	0.391	0.496	0.438	32.140	0.0000	p < 0.001
mc16	0.317	0.366	**0.716**	0.345	0.326	0.318	18.161	0.0000	p < 0.001
mc17	0.324	0.461	**0.765**	0.489	0.452	0.430	25.659	0.0000	p < 0.001
mc18	0.365	0.403	0.415	**0.825**	0.388	0.356	36.791	0.0000	p < 0.001
mc19	0.354	0.428	0.448	**0.864**	0.487	0.395	50.323	0.0000	p < 0.001

Table 4.14 Continued

mc7	0.402	0.417	0.412	**0.654**	0.361	0.423	16.290	0.0000	p < 0.001
mc21	0.293	0.325	0.340	0.312	**0.593**	0.336	10.742	0.0000	p < 0.001
mc22	0.323	0.407	0.464	0.406	**0.801**	0.512	35.222	0.0000	p < 0.001
mc23	0.388	0.431	0.468	0.453	**0.788**	0.447	28.881	0.0000	p < 0.001
mc24	0.295	0.396	0.380	0.340	**0.737**	0.446	21.016	0.0000	p < 0.001
mc28	0.390	0.481	0.488	0.414	**0.734**	0.511	26.649	0.0000	p < 0.001
mc25	0.250	0.248	0.328	0.341	0.436	**0.798**	24.966	0.0000	p < 0.001
mc26	0.305	0.336	0.445	0.406	0.518	**0.852**	46.752	0.0000	p < 0.001
mc27	0.406	0.415	0.455	0.450	0.536	**0.779**	32.863	0.0000	p < 0.001

4.5.11 Measurement Model Results of Government Role

All the assessment results related to the reliability and validity of government role construct are presented in Tables 4.15, 4.16, and 4.17 that follow strictly. 10 items retained from the EFA stage were also remained in this measurement model. The algorithm diagram of measurement model for government role is depicted in Figure 4.2. Table 4.15 reveals that the indicators for the first-order constructs were sufficiently reliable, with most of the standardized loadings exceeding the cut-off value of .708. A sufficient internal consistency reliability of greater than.70 was also achieved in all first-order constructs, namely enforcement ($\rho_{c=}$ .877; α = .824) and legislative prevention and control construct (ρ_c =.898; α =.858).

At the second-order, the construct reliability for government role was satisfactory, with composite reliability of .920. The standardized loadings of .931 and 0.942 also proved that the corresponding indicators reliability were also reliable. Further, supports for convergent validity were also found for both the first-and second-order constructs. The AVE of enforcement and legislative prevention and control were .588 and .638, which were above the minimal threshold of .50.An AVE of .877 was also achieved for the whole construct of government role.

Evidence of discriminant validity at indicator and construct levels was tabulated in Tables 4.16 and 4.17. As shown in Table 4.16, the square roots of AVEs along the diagonal were greater than their highest correlation with other constructs. Table 4.17 also shows that all the indicators load on their respective constructs higher than their cross loadings. All the loadings were significant at the level of $p < .001$. Given the above discussion, measurement model demonstrated sufficient evidence of reliability and validity.

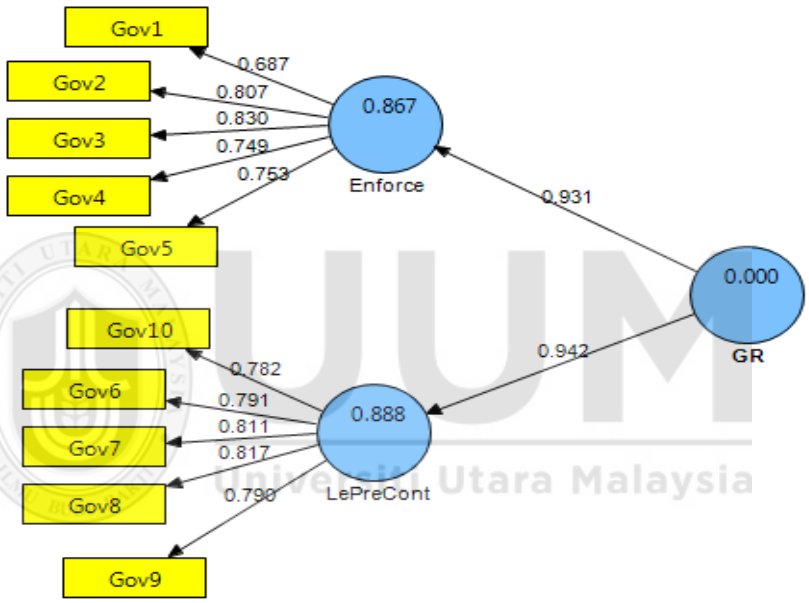

Figure 4.2. Measurement model of government role

Table 4.15

Government Role: Item Standardized Loadings, AVE, Composite Reliability, and Cronbach's Alpha

Contructs	Items	Standardized loading	AVE	Composite Reliability	Cronbachs Alpha
Enforcement (Enforce)	Gov1	0.687	0.588	0.877	0.824
	Gov2	0.807			
	Gov3	0.830			
	Gov4	0.749			
	Gov5	0.753			
Legislative prevention and control (LePreCont)	Gov6	0.791	0.638	0.898	0.858
	Gov7	0.811			
	Gov8	0.817			
	Gov9	0.790			
	Gov10	0.782			

Table 4.15 Continued

Construct	Items	Standardized loading	AVE	Composite Reliability	Cronbachs Alpha
Government Role	Enforce	0.931	0.877	0.920	0.903
	LePreCont	0.942			

Table 4.16

Government Role: Correlations and Square Root of AVE

	Enforce	LePreCont
Enforce	(0.767)	
LePreCont	0.755	(0.798)

Note: values in parentheses along the diagonals are square root of AVE for each construct. Off-diagonal elements are correlations amongst the constructs.

Table 4.17

Government Role: Cross Loadings and Loadings' Significance

Contructs	Items	Enforce	LePreCont	T value	p value	sig level
Enforcement (Enforce)	Gov1	**0.687**	0.471	16.413	0.0000	p < 0.001
	Gov2	**0.807**	0.580	35.947	0.0000	p < 0.001
	Gov3	**0.830**	0.718	47.195	0.0000	p < 0.001
	Gov4	**0.749**	0.536	25.172	0.0000	p < 0.001
	Gov5	**0.753**	0.564	26.721	0.0000	p < 0.001
Legislative prevention and control (LePreCont)	Gov6	0.636	**0.791**	34.817	0.0000	p < 0.001
	Gov7	0.573	**0.811**	39.977	0.0000	p < 0.001
	Gov8	0.655	**0.817**	42.748	0.0000	p < 0.001
	Gov9	0.608	**0.790**	33.017	0.0000	p < 0.001
	Gov10	0.538	**0.782**	31.149	0.0000	p < 0.001

4.5.12 Measurement Model Results of Green Values

Information concerning the reliability and validity of green values construct was tabulated in Tables 4.18, 4.19, and 4.20 respectively. All the 16 items resulted from EFA stage were also remained intact in the current confirmatory analysis. The algorithm diagram for measurement model of green values is shown in Figure 4.3. The standardized loadings showed that the reliability of both first-and second-order indicators were all well above the required cut-off value of .40 to .70 for exploratory

research. Likewise, the reliability of the first-order constructs namely, Environmental Value (ρ_c = .852; α = .790), Emotional Value (ρ_c = .912; α = .856) , Health and Image Value (ρ_c = .873; α = .781), and Experiential Devotion Value (ρ_c = .871; α = .803) were all greater than the acceptable threshold of .70. The like results were also evident in the second-order construct of green values (ρ_c = .909; α = .893. Thus, all indicators and constructs of first-and second-order were sufficiently reliable.

Convergent validity of first-order constructs (AVE values of .777, .696, and .629) were all above the minimal cut-off value of .50 except the AVE value of 491. Though the later value was slightly below .50, it was deemed acceptable due to its high composite reliability of .852 (Fornell & Larcker, 1981). Similar results were also found at second-order construct, in which the main construct of green values achieved AVE value of .631. Taken these results together, all the constructs achieved satisfactory level of convergent validity.

The discriminant validity of constructs and indicators were tabulated in Tables 4.19 and 4.20. While the square root of AVE was higher than its correlation with the remaining constructs, the indictors loading on its assigned constructs were higher than their cross loading. Thus, it was clear that the discriminant validity of both the indicators and constructs were assured. Additionally, all the loadings were significant at the level of $p < .001$.

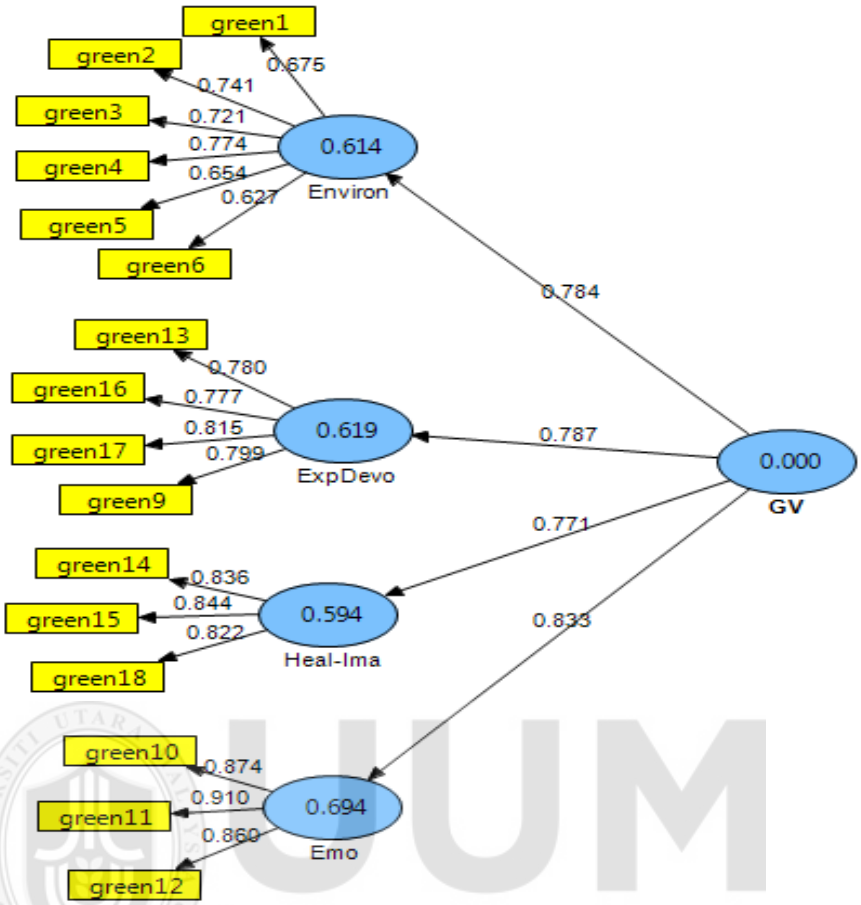

Figure 4.3. Measurement model results of green values

Table 4.18

Green Values: Item Standardized Loadings, AVE, Composite Reliability, and Cronbach's Alpha

Constructs	Items	Standardized loading	AVE	Composite Reliability	Cronbach s Alpha
Environmental value	green1	0.675	0.491	0.852	0.790
(Environ)	green2	0.741			
	green3	0.721			
	green4	0.774			
	green5	0.654			
	green6	0.627			
Emotional Value (Emo)	green10	0.874	0.777	0.912	0.856
	green11	0.910			
	green12	0.860			

Table 4.18 Continued

Health and Image Value (Heal-Ima)	green14	0.836	0.696	0.873	0.781
	green15	0.844			
	green18	0.822			
Experiential Devotion Value (ExpDevo)	green9	0.799	0.629	0.871	0.803
	green13	0.780			
	green16	0.777			
	green17	0.815			
Construct	**Items**	**Standardized loading**	**AVE**	**Composite Reliability**	**Cronbach 's Alpha**
Green Values (GV)	Environ	0.784	0.631	0.909	0.893
	Emo	0.833			
	Heal-Ima	0.771			
	ExpDevo	0.787			

Table 4.19

Green Values: Correlations and square Root of AVE

	Emo	**Environ**	**ExpDevo**	**Heal-Ima**
Emo	(0.881)			
Environ	0.509	(0.700)		
ExpDevo	0.548	0.461	(0.793)	
Heal-Ima	0.601	0.442	0.489	(0.834)

Table 4.20

Green Values: Cross loading and loadings' Significance

Constructs	**Items**	**Environ**	**Emo**	**Heal-Ima**	**ExpDevo**	**T Value**	**P Value**	**Sig Level**
Environmental value (Environ)	green1	**0.675**	0.329	0.301	0.341	16.2351	0.0000	P<0.001
	green2	**0.741**	0.364	0.279	0.330	24.248	0.0000	P<0.001
	green3	**0.721**	0.329	0.349	0.312	19.4927	0.0000	P<0.001
	green4	**0.774**	0.423	0.303	0.375	32.4039	0.0000	P<0.001
	green5	**0.654**	0.367	0.351	0.259	15.6487	0.0000	P<0.001
	green6	**0.627**	0.319	0.276	0.317	14.9692	0.0000	P<0.001
Emotional Value (Emo)	green10	0.435	**0.874**	0.521	0.519	55.4218	0.0000	P<0.001
	green11	0.488	**0.910**	0.550	0.508	86.5081	0.0000	P<0.001
	green12	0.420	**0.860**	0.519	0.419	47.4671	0.0000	P<0.001

Table 4.20 Continued

Health and Image Value (Heal-Ima)	green14	0.353	0.468	**0.836**	0.371	45.0789	0.0000	P<0.001
	green15	0.376	0.531	**0.844**	0.377	47.8913	0.0000	P<0.001
	green18	0.374	0.503	**0.822**	0.471	41.7967	0.0000	P<0.001
Experiential Devotion Value (ExpDevo)	green9	0.397	0.476	0.362	**0.799**	32.4348	0.0000	P<0.001
	green13	0.368	0.435	0.276	**0.780**	29.2508	0.0000	P<0.001
	green16	0.351	0.455	0.508	**0.777**	30.7089	0.0000	P<0.001
	green17	0.344	0.368	0.394	**0.815**	30.243	0.0000	P<0.001

4.5.13 Measurement Model Results of Environmental Awareness

The reliability and validity of environmental awareness construct were assessed. Out of 36 items forwarded from EFA stage, 29 items were retained in the current analysis. The algorithm diagram for measurement model of environmental awareness is depicted in Figure 4.4. Table 4.21 shows that all indicators of first-and second-order were sufficiently reliable. While the standardized loadings of former ranged from .586 to .806, the later carried loading between .635 and .894, all greater than the threshold of .40 to .70 for exploratory research.

Similarly, the reliability of first-order constructs of affective (ρ_c = 916; α = 898), Behaviour (ρ_c = .866; α = .815), Cognitive (ρ_c = .876; α = .835), and Conative (ρ_c = 859; α = .792) were all well above the minimal cut- off value of .70. These pattern of results were also held true for the whole construct of environmental awareness (ρ_c = .926; α = .917). Thus, satisfactory level of internal consistency reliability was attained for the first- and second-order constructs alike.

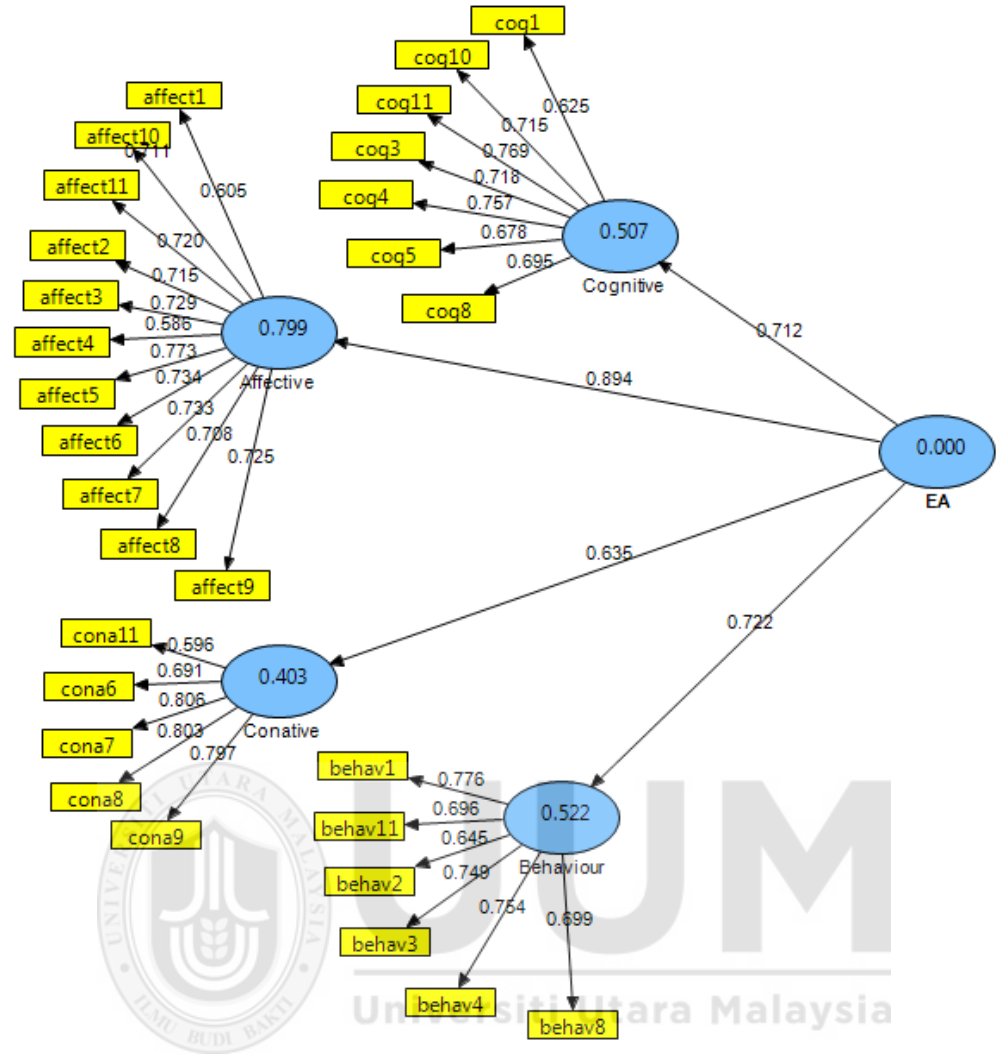

Figure 4.4. Measurement model results of environmental awareness

The convergent validity of first-order constructs (AVE values of 520, 504 and 553) were above the minimal recommended threshold of .50. Only the AVE value of .498 was very slightly lower than .50. However, this value was taken given the composite reliability of the same construct was high (ρ_c = .916). Similar results were also noted for the second-order construct of environmental awareness (AVE= .558). Thereby, the convergent validity of all constructs was acceptable.

As articulated in Table 4.22 and 4.23, evidence of dsicriminant validity was also proved. Given the square root of AVE was highest than its correlation with other constructs, and loading of indictors on their corresponding constructs were greater than

their cross loading, the discriminant validity were sufficiently acceptable at construct and indicator level respectively. In addition, all the loadings were significant at the level of $p < .001$.

Table 4.21

Environmental Awareness: Item Standardized Loadings, AVE, Composite Reliability, and Cronbach's Alpha

Constructs	**Items**	**Standardized loading**	**AVE**	**Composite Reliability**	**Cronbachs Alpha**
Affective	affect1	0.605	0.498	0.916	0.898
	affect2	0.715			
	affect3	0.729			
	affect4	0.586			
	affect5	0.773			
	affect6	0.734			
	affect7	0.733			
	affect8	0.708			
	affect9	0.725			
	affect10	0.711			
	affect11	0.720	0.520	0.866	0.815
Behaviour	behav1	0.776			
	behav2	0.645			
	behav3	0.749			
	behav4	0.754			
	behav8	0.699			
	behav11	0.696	0.504	0.876	0.835
Cognitive	cog1	0.625			
	cog3	0.718			
	cog4	0.757			
	cog5	0.678			
	cog8	0.695			
	cog10	0.715			
	cog11	0.769			
Conative	cona6	0.691	0.553	0.859	0.792
	cona7	0.806			
	cona8	0.803			
	cona9	0.797			
	cona11	0.596			
Constructs	**Items**	**Standardized loading**	**AVE**	**Composite Reliability**	**Cronbachs Alpha**
Environmental awareness	Affective	0.894	0.558	0.926	0.917
	Behaviour	0.722			
	Cognitive	0.712			
	Conative	0.635			

Table 4.22

Environmental Awareness: Correlations and Square Root of AVE

	Affective	**Behaviour**	**Cognitive**	**Conative**
Affective	(0.706)			
Behaviour	0.487	(0.721)		
Cognitive	0.542	0.322	(0.710)	
Conative	0.401	0.502	0.268	(0.743)

Table 4.23

Environmental Awareness: Cross loading and loading Significance

Constructs	**Items**	**Affective**	**Behaviour**	**Cognitive**	**Conative**	**T Value**	**P Value**	**Sig Level**
Affective	affect1	**0.605**	0.258	0.291	0.265	12.809	0.0000	p<0.001
	affect2	**0.715**	0.319	0.336	0.269	23.462	0.0000	p<0.001
	affect3	**0.729**	0.345	0.359	0.277	26.141	0.0000	p<0.001
	affect4	**0.586**	0.347	0.304	0.250	13.630	0.0000	p<0.001
	affect5	**0.773**	0.336	0.394	0.250	32.186	0.0000	p<0.001
	affect6	**0.734**	0.336	0.383	0.297	28.598	0.0000	p<0.001
	affect7	**0.733**	0.318	0.475	0.232	26.039	0.0000	p<0.001
	affect8	**0.708**	0.389	0.342	0.327	25.244	0.0000	p<0.001
	affect9	**0.725**	0.326	0.437	0.280	24.957	0.0000	p<0.001
	affect10	**0.711**	0.393	0.420	0.334	25.327	0.0000	p<0.001
	affect11	**0.720**	0.399	0.440	0.324	23.275	0.0000	p<0.001
Behaviour	behav1	0.425	**0.776**	0.265	0.345	31.172	0.0000	p<0.001
	behav2	0.281	**0.645**	0.204	0.274	14.364	0.0000	p<0.001
	behav3	0.263	**0.749**	0.177	0.317	23.128	0.0000	p<0.001
	behav4	0.347	**0.754**	0.182	0.384	27.377	0.0000	p<0.001
	behav8	0.386	**0.699**	0.208	0.459	19.963	0.0000	p<0.001
	behav11	0.374	**0.696**	0.336	0.375	23.991	0.0000	p<0.001
Cognitive	cog1	0.348	0.254	**0.625**	0.173	14.131	0.0000	p<0.001
	cog3	0.382	0.213	**0.718**	0.215	22.772	0.0000	p<0.001
	cog4	0.379	0.173	**0.757**	0.117	28.792	0.0000	p<0.001
	cog5	0.395	0.234	**0.678**	0.166	17.422	0.0000	p<0.001
	cog8	0.393	0.248	**0.695**	0.192	18.555	0.0000	p<0.001
	cog10	0.374	0.267	**0.715**	0.275	21.584	0.0000	p<0.001
	cog11	0.418	0.209	**0.769**	0.184	31.861	0.0000	p<0.001
Conative	cona6	0.295	0.274	0.279	**0.691**	21.231	0.0000	p<0.001
	cona7	0.270	0.428	0.130	**0.806**	31.111	0.0000	p<0.001
	cona8	0.292	0.359	0.154	**0.803**	28.673	0.0000	p<0.001
	cona9	0.276	0.411	0.117	**0.797**	27.543	0.0000	p<0.001
	cona11	0.341	0.377	0.302	**0.596**	15.187	0.0000	p<0.001

4.5.14 Descriptive Analysis of Main Constructs (Measurement Model; n=360)

Having the above achieved, the study is ready then to proceeded with running descriptive analysis for all constructs used in the ultimate measurement models. The results of descriptive analysis were presented in Table 4.24.

Table 4.24
Descriptive Analysis of Main Constructs Used in Measurement Models (n=360)

Constructs	Mean	SD	Min.	Max.
Media coverage (MC)	3.51	.492	2	5
Sufficiency(Suff)	3.45	.554	2	5
Attractiveness (Attract)	3.46	.625	1	5
Sources (Source)	3.50	.633	1	5
Frequency (Frequen)	3.40	.662	1	5
Variety (Variety)	3.90	.682	1	5
Prominence (Promi)	3.33	.677	1	5
Government role (GR)	3.31	.680	1	5
Enforcement (Enforce)	3.39	.691	1	5
Legislative Prevention and control (lePreCont)	3.23	.764	1	5
Green values (GV)	4.12	.484	2	5
Environment (Environ)	3.93	.516	2	5
Experiential devotion value (ExpDevo)	4.32	.579	3	5
Helath and image value (HealIma)	4.12	.653	2	5
Emotional value (Emo)	4.10	.680	2	5
(Environmental awareness (EA)	3.90	.418	3	5
Cognitive	4.09	.518	2	5
Affective	4.25	.499	2	5
Conative	3.55	.624	2	5
Behaviour	3.71	.591	2	5

Note. Min. refers to minimum value. Max. refers to maximum value.

As shown in Table 4.24, the constructs understudied were found to have small standard deviation (SD) values (ranging from .418 to.764), and the mean values were ranging from 3.23 to 4.09. By the working principle, the smaller the standard deviation, the closer the scores are to be clustered around the mean.

Therefore, the SD and mean values reported herein indicated that majority of the respondents held a rather positive attitudes towards the constructs examined.

4.6 Revision of the Research Model

Given that some changes had taken place during the assessment of measurement models, a revised framework (Figure 4.5) is presented herein to endorse the hypothesized relationships and the remaining constructs and items used in the estimation of the final structural model.

The revised model comprised one predictor (MC), two moderators (GR and GV), and a dependent variable (EA), all of which were second-order constructs. In particular, MC was retained as a six-factor model with 25 items. While GR was a two-factor construct reflected by 10 items, the GV was a four-factor construct reflected by 16 items. Finally, the dependent variable, EA, was a four-factor model (cognitive, affective, conative, and behaviour) reflected by 29 items. Altogether, the revised model consisted of 20 constructs and 80 items.

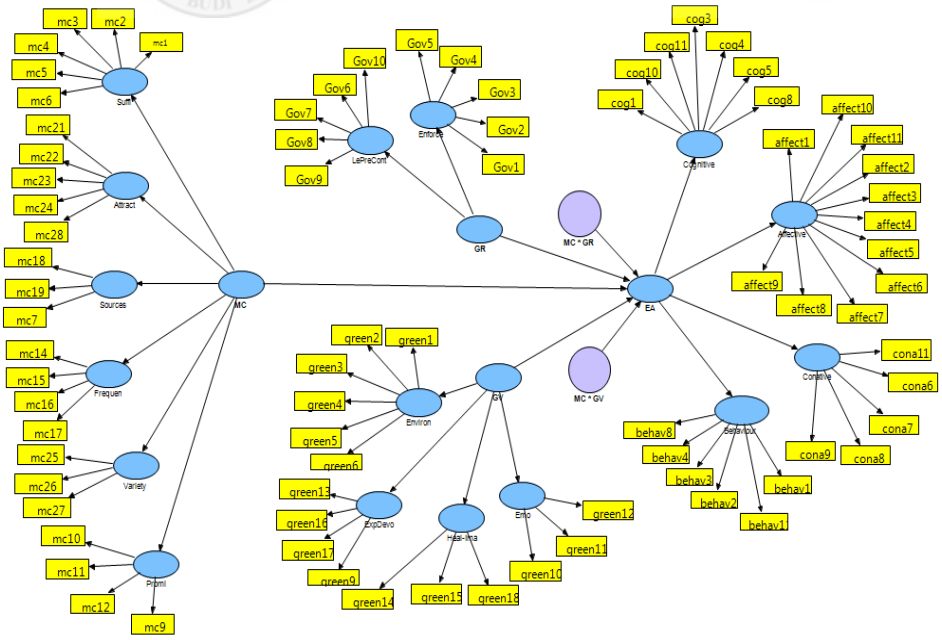

Figure 4.5. Revised theoretical framework (after measurement model assessment)

However, due to the considerably large number of constructs and items in the model, latent scores of constructs was estimated and used to estimate the final structural model (Hair et al., 2014). The final structural model used for hypotheses testing in this study is as presented in Figure 4.6

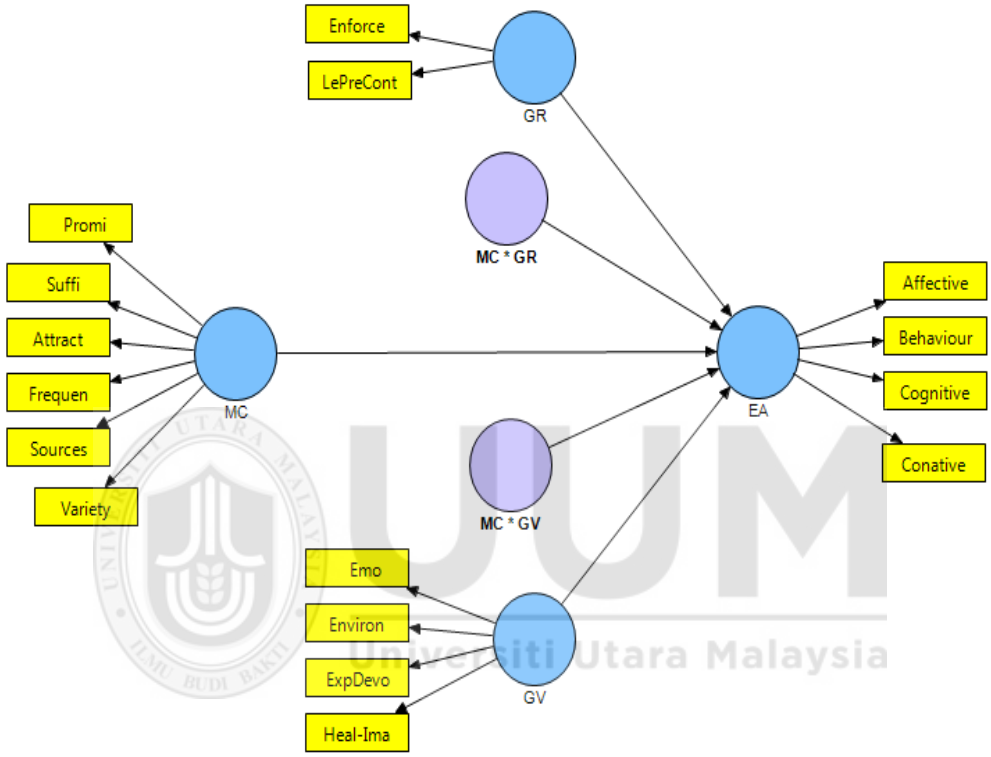

Figure 4.6. Revised model used for structural model assessment

Five hypotheses set to address three research objectives (Objective 2, 3 ,and 4) were retained. In specific, hypothesis H1 corresponded to research objective 2; hypotheses H2 and H3 corresponded to research objective 3; hypotheses H4 and H5 corresponded to research objective 4. The research objectives and their corresponding hypotheses were tabulated in Table 4.25.

Table 4.25

Hypotheses and Corresponding Research Objective Research Reassured

Research objectives	Hypotheses
Research Objective 1	
To determine level of environmental awareness among Malaysians.	-
Research Objective2	Hypothesis 1
To investigate the relationship between perceived media coverage and environmental awareness.	Perceived media coverage is positively and significantly related to environmental awareness.
Research Objective 3	**Hypothesis 2**
To examine the moderating effect of green values of people on the relationship between perceived media coverage and environmental awareness.	Green values are positively and significantly related to environmental awareness.
	Hypothesis 3
	Green values positively and significantly moderates the relationship between perceived media coverage and environmental awareness.
Research Objective 4	**Hypothesis 4**
To examine the moderating effect of perceived government role on the relationship between perceived media coverage and environmental awareness.	Perceived government role is positively and significantly related to environmental awareness.
	Hypothesis 5
	Perceived government role positively and significantly moderates the relationship between perceived media coverage and environmental awareness.

4.7 Analyses and Findings of Structural Model and Hypotheses Testing

Having examined the measurement models, the structural model was assessed next. The current study followed Hair et al.'s (2014) five-step guideline for structural model estimation. These steps are: i) assessment of collinearity, ii) examining the significance and relevance of the model, iii) assessing the level of R^2, iv) evaluating the effect sizes f^2, and v) assessing the predictive relevance Q^2 and the q^2 effect sizes. Note that, the assessment of collinearity had already been assessed in early stage of assumptions testing.

4.7.1 Assessing the Predictive Power and Relevance of the Research Model

Following Hair et al. (2011) guidelines, R-squared value (R^2) of endogenous variable (Chin, 1998) and the effect size (f^2) were used to analyze the predictive power of the research model, and Stone-Geisser's Q^2 statistic was used to investigate the predictive relevance.

4.7.2 Coefficient of Determination (R2 Value)

R^2 value or coefficient of determination is an indicator of predictive accuracy of the model. It also indicates to the combined effects of the predictors on the endogenous variables (Hair et al., 2014).

Though the interpretation of R^2 value is almost similar to that of traditional regression , and the corresponding standardized path estimates can be assessed and interpreted in the same way (Chin, 1998), there is no yet a specific threshold for R^2 value. A general rule of thumb, according to Hair et al. (2014), is that R^2 value ranges from 0 to 1, with greater level of R^2 representing greater levels of predictive power. However, the acceptable threshold of R^2 value differs according to the research model complexity, such as the number of paths or independent variables, as well as the research discipline (Hair et al., 2014). For example, in marketing research, R^2 values of 0.75, 0.50, and 0.25 corresponds respectively to substantial, moderate, or weak value (Hair et al., 2011). Other researcher such as Chin (1998) recommends the cut-off of 0.67, 0.33, and 0.19 as substantial, moderate, and weak value respectively. He, however, suggests a moderate R^2 value as acceptable for models of one or two exogenous variables, and a substantial R^2 value for models of several exogenous variables.

Practically, the PLS algorithm was used to calculate the R^2 for the endogenous variable of environmental awareness. The R^2 value of 0.45 was obtained. Using Chin's (1998) threshold of 0.67, 0.33, and 0.19 which represent substantial, moderate, and weak value respectively, this study achieved a moderate R^2 value and thus a moderate predictive accuracy for the dependent construct of environmental awareness was demonstrated as shown in Table 4.26.

Table 4.26

R-Squared Values of Endogenous Variable

Endogenous latent Variable	**Predictive variable**	**R^2 Value**	**Level of Predictive Accuracy**
Environmental awareness	Media coverage	0.45	moderate

4.7.3 Assessment of the Effect Sizes (f2)

Following the assessment of R^2 value, effect size (f^2) was computed. The f^2 value represents the change in the R^2 values when a certain independent latent variable is omitted to explore its substantial impact on the dependent variable (Chin, 1998; Hair et al., 2014). By means of estimating the PLS path model (algorithm), change in the R^2 values were obtained. Specifically, the effect size was calculated using the following equation.

$$\textit{Effect size, } f^2 = \frac{R^2_{\text{included}} - R^2_{\text{excluded}}}{1 - R^2_{\text{included}}}$$

Using the guideline of Cohen (1988), whereby ^{2} values of 0.02, 0.15, and 0.35 respectively refer to small, medium, and large effects size, this study found that while the exogenous variable of green values (GV) have a large effect size (f^2 = 0.684) on environmental awareness (EA), both media coverage (MC) and

government role (GR) have very small effect size (f^2 = 0.008 and f^2 = 0.002 respectively) on EA, as evident in Table 4.27.

Table 4.27

The Effect Size of Predictive Variables

Endogenous Variable	Exogenous Variables	R^2 Included	R^2 Excluded	1-R^2 Included	R^2 Included- R^2 Excluded	f^2 value	Effect size category
Environmental awareness	Media Coverage	0.524	0.520	0.476	0.004	0.008	very small
	Government role	0.524	0.523	0.476	0.001	0.002	very small
	Green values	0.524	0.198	0.476	0.326	0.684	large

4.7.4 Assessment of Predictive Relevance of the Model

It is important that the predictive relevance of a significant relationship be assessed. This is to heed the possibility of a significant path coefficient (in the structural model), which only has a trivial size that worth-raising managerial attention (Hair et al., 2014).

Therefore, besides looking at the impact of R^2 as criterion of predictive accuracy, R^2 value is also supplemented with other measure of predictive relevance of Stone-Geisser's Q^2 (Geisser, 1974; Stone, 1974), and effect size q^2. Q^2 represent a measure of how well the originally observed values are reconstructed or predicted by the model path and its parameter estimates (Chin, 2010; Hair et al., 2014).

In this study, the Q^2 value was computed by means of blindfolding procedure. Having that blindfolding technique was adapted, the omission distance (*D*) has to be specified (Hair et al., 2014; Hair et al., 2011) Given that the omission distance from 5 to 10 is deemed as acceptable (Hair et al., 2011), the omission distance of 7 was chosen for this study. This distance was also in an agreement with the requirement that when dividing the valid number of observations by *D*, it did not result in an integer number (Hair et al., 2011). Since the omission distance of 7 was used for

estimation of 360 valid cases (360/7= 51.42), a non-integer number was produced. Adhering to this requirement is critical as using an integer number would have always led to deleting the same observations in each round from the data matrix (Hair et al., 2014).

It important to note that, the blindfolding approach used to estimate Q^2 value is only applicable to endogenous latent constructs that have a reflective measurement model specification (Henseler et al., 2009). While Q^2 values greater than 0 indicates that the model has predictive relevance for a target endogenous construct, values of less than 0 represents lack of predictive relevance (Chin, 2010; Hair et al., 2014).

In PLS, Q^2 value estimated by blindfolding procedure can be calculated by using two different forms: the cross-validated redundancy and cross-validated communality (Hair et al., 2014). While cross-validated redundancy approach assesses both the scores of predecessor variables and that of the target endogenous variable , the cross- validated communality approach uses only the variable scores that estimated for a specific endogenous variable with excluding the structural model information (Hair et al., 2014). However, this study followed the recommendation of Hair et al. (2014) and Hair et al. (2011) in which cross-validated redundancy was used as measure of Q^2 since it fit perfectly the PLS-SEM approach.

As indicated in Table 4.28, the Q^2 value of more than zero was obtained for latent construct of environmental awareness. Going by the cut-off value of above zero as suggested by Hair et al. (2014), the predictive relevance of the research model was demonstrated. The full results of blindfolding procedure were depicted in Appendix 4.10.

Table 4.28

Cross-Validated Redundancy Blindfolding Procedure Results of EA

Total	SSO	SSE	1-SSE/SSO
Environmental awareness (EA)	1440.000	1000.539	0.305

Subsequent to the assessment of predictive relevance *(Q^2)*, the relative impact of predictive relevance was examined by the q^2 effect size. Analogous to the interpretation of effect size in R^2, values of 0.02, 0.15, and 0.35 demonstrate that an exogenous variable has a small, medium, or large predictive relevance for a certain endogenous construct (Hair et al., 2014; Henseler et al., 2009). Using the same equation as that of effect size in R^2, q^2 effect size was computed in this study as follows:

$$\textbf{Effect size of predictive relevance, q2} = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}}$$

The results in Table 4.29 revealed that the endogenous variable of AE had a Q^2 included value of 0.305. The separate deletion of exogenous variables MC, GR, and GV had resulted in Q^2 excluded values of 0.287, 0.288, and 0.121 respectively. The later values corresponded to small (q^2 =0.026), small (q^2= 0.025), and medium (q^2 = 0.265) effect size of predictive relevance respectively. In the similar manner, a small (q^2 = 0.025) and very small (q^2 = 0.014) effect size of predictive relevance were found for the moderation of RG*MC and GV*MC respectively. Thus, both the Q2 and q2 proved that the model of this study had predictive relevance.

Table 4.29

Effect Size of Predictive relevance (q^2) of Predecessor on Endogenous Variable

Endogenous Variable	Exogenous Variable	Q^2 Included	Q^2 Excluded	1- Q^2 Included	Q^2 Included- Q^2 Excluded	q^2 value	Effect size category
Environmental Awareness	Media coverage (MC)	0.305	0.287	0.695	0.018	0.026	Small
	Government role (GR)	0.305	0.288	0.695	0.018	0.025	Small
	Green values (GV)	0.305	0.121	0.695	0.184	0.265	Medium
	Interaction RG*MC	0.305	0.288	0.695	0.018	0.025	Small
	Interaction GV*MC	0.305	0.296	0.695	0.010	0.014	Very small

4. 7.5 Hypotheses Testing (Direct and moderating effects)

In the current study, direct and moderating effects were tested using PLS-SEM. The latent scores were used for estimation of the structural model, in which the scores were produced by running PLS Algorithm in two-stage approach. This was because the model of the study was complex as it consisted of multidimensional independent and dependent variables, along with another two multidimensional moderators. All the constructs in the model were of the second-order, which all together made up 82 items. The use of second-order constructs in PLS was considered advantageous as it made the path model more parsimonious and easier to understand (Hair et al., 2014).

Practically, the two stages in the two-stage approach mentioned above were built following the workflow below (Henseler & Fassott, 2010).

Stage 1: The main effect of PLS path model was run in order to obtain estimates for the latent variable scores. The latent variable scores were calculated and saved for further analysis.

Stage 2: The interaction term was built up as the element wise product of the latent variable scores of exogenous variable and the moderator. This interaction term as well as the latent variable scores of exogenous and moderator variables were used as independent variables in a multiple linear regression on the latent variable scores of endogenous variable.

Later, PLS Algorithm was run to examine the strength of the direct relationships which tested hypotheses H1, H2, and H4. This was done by observing the coefficient beta values. According to Hair et al. (2014), the beta values (estimated path coefficients) close to +1 indicates strong positive relationships, which are occasionally statistically significant. The same was also applied for the reverse values (-1). Consequently, *t*- and *p*-values were obtained by performing bootstrapping of 5000 subsamples (Hair et al., 2014). The number of bootstrap samples was set to suffice at least the number of valid observations in the data set, which was a number of 360.

Essential to model a moderating effect, the moderating effect (the interaction or product term created), the direct effect of the exogenous variable, as well as the direct effect of the moderator were all specified within one model. The significance of the moderation is indicated by the path t-coefficient of the interaction. This t-coefficient expresses how the simple direct effect between the exogenous and the endogenous changes when the moderator variable is increased or decreased by one standard deviation. Interaction term is the additional latent variable covering the product of the exogenous variable and the moderating variable (Hair et al., 2014). However, specific for the current study, both t- and p-values were used to determine the significance of the moderating effects.

In this study, the product-indicator approach was used to model and test the moderating effects. In particular, the product-indicator approach was opted because both moderating variables in the current study are continuous reflective variables and not categorical moderators which otherwise needs the group comparison approach (Henseler & Fassott, 2010). Henseler and Fassott (2010) also provided further understanding that the results of the product term approach are usually equal or superior to those of the group comparison approach, and thus recommended using the product term approach always.

Besides adhering to the principles above, the current study also took note of the caution raised by Hair et al. (2014) that, if one is hypothesizing and testing the significance of the main or direct effect between the exogenous variable and the endogenous variable, the PLS-SEM analysis should be initially executed without the moderator to gauge the results of the direct relationship hypothesized. As such, the moderation model represents a complementary analysis for this direct relationship. In practice, this caution was consistent with Henseler et al. (2009) that hypothesized path model of direct effects be first examined, and only then the additional analysis involving moderating effects was conducted.

In addition to the above, it is also heightened that the nature of the effect of exogenous variable on the endogenous variable differs for models with and without the moderator (Henseler & Fassott, 2010). Therefore, interpreting the direct effect result of a moderator model as if it were a main effect may cause false and misleading conclusions (Henseler & Fassott, 2010). This issue is important because the estimated values and the meaning of the direct effect between a model with and without moderator are different. The main effect in a moderator model represents the relationship between an exogenous and an endogenous latent variable in the

structural model when the moderator variable's value is equal to its mean value (provided mean-centering has been applied (Hair et al., 2014).

Therefore, practically, the current study ran two separate structural models to estimate the direct relationships hypothesized: i) the direct relationship between the exogenous variable (media coverage) and endogenous variable (environmental awareness), and ii) the direct relationships between the two moderators (Government pole and Green values) and the endogenous variable. Only then, the moderation model was estimated based on the procedures explained earlier in this section.

Finally, both the moderating effects and the size effects of moderation were assessed by comparing the extent of variance explained by the main effect model when the moderating effect was excluded (Henseler & Fassott, 2010). Similar to the interpretation of effect size in R^2, the values of 0.02, 0.15, and 0.35 denote weak, moderate, and strong effect size respectively (Henseler & Fassott, 2010). In this study, the size of the moderating effect (f^2) was calculated using the following equation.

$$\text{Effect size of moderator, } f^2 = \frac{R^2 \text{ model with moderator} - R^2 \text{ model without moderator}}{1 - R^2 \text{model with moderator}}$$

Demonstrated in Figure 4.7a and Figure 4.7b are the PLS bootstrapping diagrams for estimating the direct relationship of media coverage and environmental awareness, and the direct relationships between the two moderators (green values and government role) with environmental awareness respectively. The estimation results for the moderating effects of green values and government role are presented in Figure 4.8.

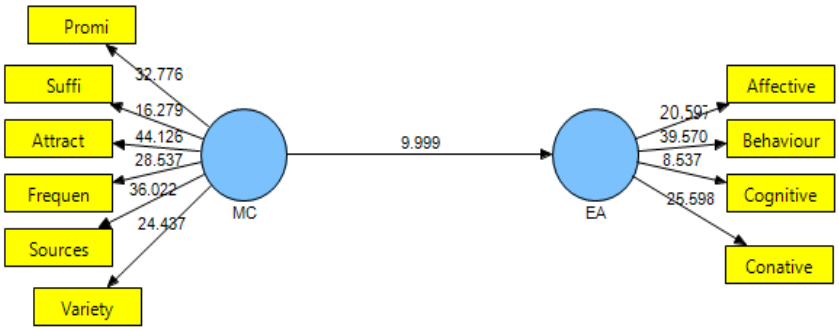

Figure 4.7a. PLS bootstrapping diagram of direct relationship between media coverage and environmental awareness

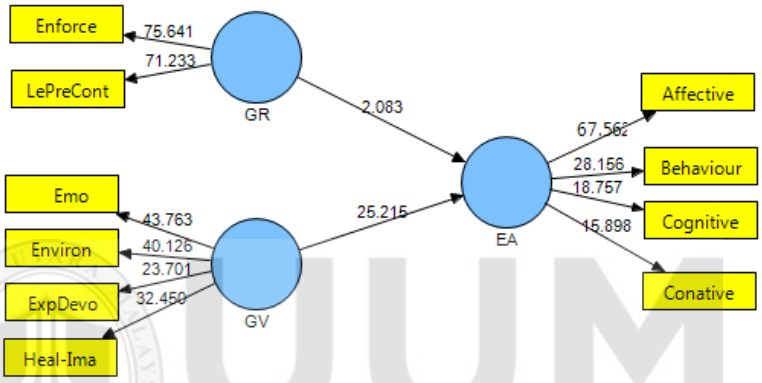

Figure 4.7b. PLS bootstrapping diagram of direct relationships between two moderators (government role and green values) and environmental awareness

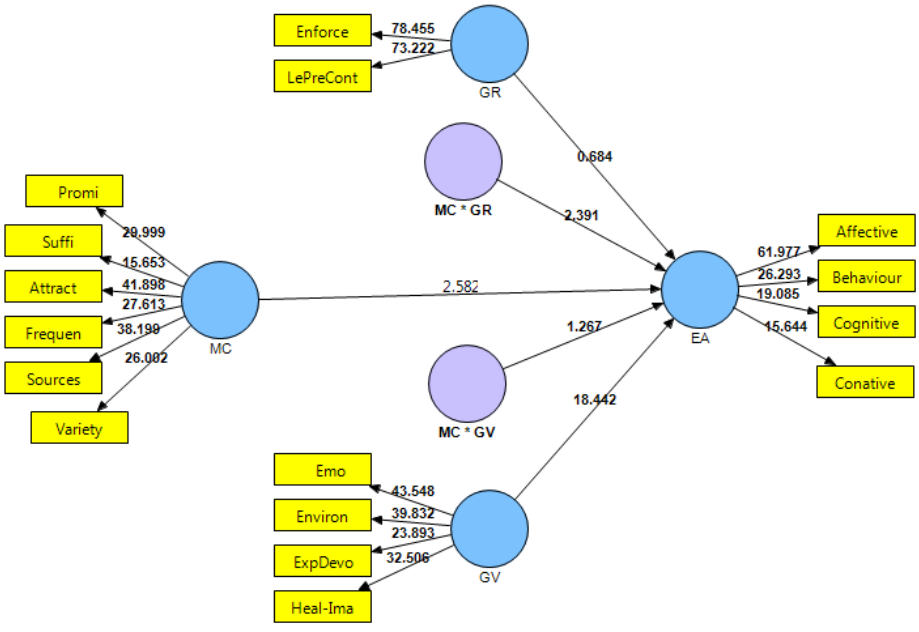

Figure 4.8. PLS bootstrapping diagram of moderations within the structural model

The results of the PLS bootstrapping procedures as demonstrated in Figure 4.7a, Figure 4.7b, and Figure 4.8 are summarized and tabulated in Table 4.30. The last column of Table 4.30 notes the corresponding PLS procedures (Figure 4.7a, Figure 4.7b, and Figure 4.8) in which each hypothesis was answered across the estimation stages.

Table 4.30

Summary of Hypotheses Testing: H1, H2, H3, H4, and H5

Relationships hypothesized		Beta (β)	Standard Error	t-value	p-value	Significance level	Decision	Corresponding PLS diagrams
H1	MC → EA	0.443	0.044	9.999	0.0000	p < 0.0001	Supported	*Figure 4.7a*
H2	GV → EA	0.692	0.027	25.215	0.0000	p < 0.0001	Supported	*Figure 4.7b*
H3	MC * GV → EA	-0.123	0.097	1.267	0.1030	Not significant	Not supported	*Figure 4.8*
H4	GR → EA	0.088	0.042	2.083	0.0190	p< 0.05	Supported	*Figure 4.7b*
H5	MC * GR → EA	0.145	0.060	2.391	0.0087	p< 0.01	Supported	*Figure 4.8*

Out of five hypotheses, four were supported. Particularly, all hypotheses of direct relationships, namely H1 (β = .443, t-value = 9.999, p < 0.0001), H2 (β =0.692, t-value = 25.215, p < 0.0001), and H4 (β = 0.088, t-value = 2.083, p < 0.0001) are statistically supported. Hence, the significant positive impact of perceived media coverage, green values, and perceived government role were found established on the dependent variable environmental awareness.

Particular for the moderation, Table 4.30 reveals support for the significant moderating effect of government role on the relationship between perceived media coverage and environmental awareness (β = 0.145, t-value = 2.391, p < 0.01), hence supporting hypothesis H5. In the reverse, hypothesis H3 was not supported (β = -0.123, t-value = 1.267, p = 0.1030). Therefore, green values did not moderate the

association between perceived media coverage and environmental awareness relationship.

In addition, a graphical illustration of the significant interaction effect between perceived media coverage and perceived government role in predicting environmental awareness is depicted in Figure 4.9 that follows.

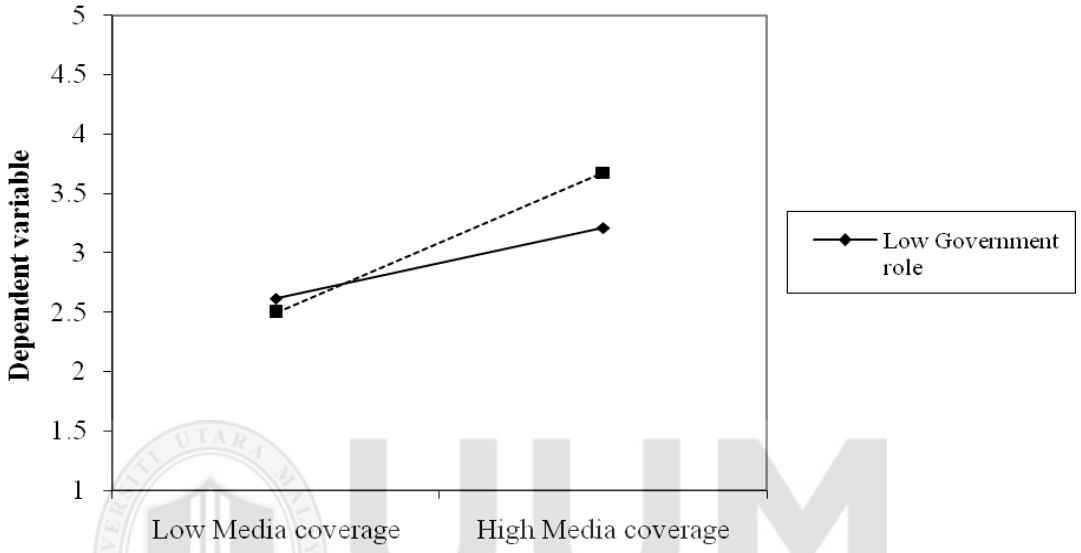

Figure 4.9. Plot of the significant moderating effect of government role

Figure 4.9 can be interpreted that, perceived government role moderated the relationship between perceived media coverage and environmental awareness, such that the relationship is stronger (more positive) under the condition of high government role than it is under the condition of low government role. An illustration the interaction effects of government role and green values is attached in Appendix 4.11, Figure A and B.

Also in particular to the moderation results, the effect sizes for both moderations were calculated, as tabulated in Table 4.31. The moderating effect of government role was found to exhibit weak effect size (f^2 = 0.040). The insignificant moderating effect of green values was also found to have weak effect size (f^2 = 0.031).

Table 4.31

Effect Sizes for Both Moderations of Government Role and Green Values

Endogenous Variable	Exogenous Variables	R^2 with moderator	R^2 without moderator	1- R^2 with moderator	R^2 with moderator - R^2 without moderator	f^2 value	Effect size category
Environmental awareness	Government role	0.548	0.530	0.452	0.018	0.040	weak
	Green values	0.548	0.534	0.452	0.014	0.031	weak

4.7.6 Results of the Level of Environmental Awareness

The results for the level of EA correspond to the first research objective. The level of EA and its four dimensions are presented in Table 4.32.

Table 4.32

Descriptive Analysis of the Level of Environmental Public Awareness

	Cognitive		Affective		Conative		Behavior		EA	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
SD	0	0	0	0	0	0	0	0	0	0
D	1	0.28	1	0.28	18	5.00	9	2.50	0	0
N	47	13.06	24	6.67	162	45.00	92	25.56	57	15.83
A	219	60.83	210	58.33	154	42.78	222	61.67	279	77.50
SA	93	25.83	125	34.72	26	7.22	37	10.28	24	6.67
Sum	**360**	**100**	**360**	**100.0**	**360**	**100.0**	**360**	**100**	**360**	**100.00**

Note. % denotes the percentage; Freq, frequency; EA, environmental awareness; SD, strongly disagree; D, disagree; N, neutral; A, agree; SA, strongly agree.

At the level of the overall construct, 279 (77.50%) and 24 (6.67%) respondents attached “agree” and “strongly agree” respectively. None of the respondents expressed consent for “disagree” or “strongly disagree”. Only 15.83% (n = 57) of the respondents took a neutral stance.

At the dimension level, none had responded “strongly disagree” for all the four dimensions. Specifically for the cognitive dimension, responses for “agree” and “strongly agree” had been constituted by 219 (60.83%) and 93 (25.83%) respondents

respectively. While only one (0.28%) respondent answered “disagree”, 47 (13.06%) respondents expressed neutral opinion.

For the affective dimension, 210 (58.33%) respondents marked “agree”, and 125 (34.72%) showed a stance for “strongly agree”. None marked “strongly disagree”; only one respondent (0.28%) took the “disagree” stance. The remaining 24 respondents (6.67%) did not show neither positive nor negative stance.

Differ from the two dimensions above, the conative dimension had gained the most responses for the “neutral” stance (45%, n = 162). This was followed by responses of “agree” (42.78%, n = 154) and “strongly agree” (7.22 %, n = 26). The remaining 18 responses, an equivalence of 5 %, expressed the “disagree” consent.

Finally, for the behavior dimension, 222 (61.67%) and 37 (10.28%) respondents asserted the stance for “agree” and “strongly agree” respectively. While 92 (25.56%) respondents showed a “neutral” viewpoint, nine respondents (2.50%) responded as “disagree”.

4.8 Summary of Chapter

This chapter discusses all the results of statistical testing. This includes Non-Response Bias, data cleaning, multivariate assumptions assessment, EFA, measurement model, and structural model assessment. Most importantly, this chapter reports the results of hypotheses testing. Out of five hypotheses, four were supported (H1, H2, H4, and H5). The supported hypotheses include three direct relationships and one moderating effect. The hypothesized moderating effect of green value on the association between media coverage and environmental awareness (H3) was not supported

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter aims at discussing the findings of the study. This chapter is organized in seven sections. After the introduction in this section, Section 5.2 presents the summary of the thesis. Section 5.3 resides all discussions of findings. The theoretical (and methodological) and practical contributions of the study are discussed in Section 5.4. Following this section, Section 5.5 and Section 5.6 discuss the limitations of the study and recommendations for future research respectively. Finally, Section 5.7 puts forth the concluding remarks of this chapter.

5.2 Summary of Findings

The main purpose of the study was to examine the association between perceived media coverage and environmental awareness, as well as the moderating influence of green values and perceived government role on this relationship. In addition, the examination of the level of environmental awareness is one of the research objectives.

On the one hand, agenda setting theory and framing theory form the main theoretical underpinning which supports the association between perceived media coverage and environmental awareness; or in other words, the impact of perceived media coverage on environmental awareness. On the other hand, limited effect theory offers justifications for the possible outcomes of the moderating impacts of green values and perceived government role on the media coverage- environmental awareness relationship.

The current research is an individual-level study, where university students were used as the best representatives for the targeted respondents, who are the Malaysian public. While survey questionnaires were used as the data collection tool,

the data distribution and collection followed the cross-sectional design. All data collected was analyzed using SPSS software (version 21) and Smart PLS 2.0 M3. As the current research requires the need to determine the dimensionality of the constructs developed and heavily revised, EFA was performed. Later, measurement models of all constructs understudied were assessed to determine their reliability and validity before the structural model was examined to answer the hypotheses set.

Four out of the five hypotheses tested were significantly supported. Significant positive associations were found for all the three direct relationships set, namely the relationship between: i) Perceived media coverage and environmental awareness; ii) Green values and environmental awareness; and iii) Government role and environmental awareness. Notably, the direct associations between the two proposed moderators (green values and government role) with environmental awareness were examined, because these variables were still new in the examination with media coverage alone, environmental awareness alone, and the relationship between media coverage and environmental awareness. While perceived government role was found to significantly moderate the relationship between perceived media coverage and environmental awareness, no statistical evidence was established for the moderation potential of green values. Table 5.1 is the summary of the research objectives and their corresponding research questions and hypotheses.

Table 5.1

Summary of Research Objectives, Research Questions, and Hypotheses

	Research Questions	Research Objectives	Hypotheses
1.	What is the level of environmental awareness among public in Malaysia?	To determine the level of environmental awareness among public in Malaysia.	Not applicable

Table 5.1 Continued

2.	What is the relationship between perceived media coverage and environmental awareness of public in Malaysia?	To investigate the relationship between perceived media coverage and environmental awareness of public in Malaysia.	H1:	Perceived media coverage is positively and significantly related to environmental awareness.
3.	Does 'green values' among the people play a moderating role to influence the relationship between perceived media coverage and environmental awareness of public in Malaysia?	To examine the moderating effect of green values on the relationship between perceived media coverage and environmental awareness of public in Malaysia.	H2:	'Green values' is positively and significantly related to environmental awareness.
			H3:	'Green values' positively and significantly moderates the relationship between perceived media coverage and environmental awareness.
4.	Does perceived government role play a moderating role to influence the relationship between perceived media coverage and environmental awareness of public in Malaysia?	To examine the moderating effect of perceived government role on the relationship between perceived media coverage and environmental awareness of public in Malaysia.	H4:	Perceived government role is positively and significantly related to environmental awareness.
			H5:	Perceived government role positively and significantly moderates the relationship between perceived media coverage and environmental awareness.

5.3 Discussion of Findings

To ease reading and understanding, discussions are organized according to the four research objectives, which are discussed in four separate sub-sections. Other than the first research objective which necessitates a discussion of the descriptive examination aiming at discovering the level of environmental awareness among Malaysians, the remaining objectives discussed the results from hypotheses testing (H1, H2, H3, H4, and H5).

5.3.1 Level of Environmental Awareness among Malaysians (Research Objective 1)

Research Objective 1 is aimed at determining the level of environmental awareness among Malaysians. In the current study, environmental awareness was defined in a broad perspective, tapping the essence of cognitive, affective, conative, and behaviour dimensions. environmental awareness was defined as "the the cognition about nature and value of environment-related human behaviour; it is recognized as a new independent ideology, a progressive value, and a sum of social idea, theory, emotion, willingness, consciousness and other concepts which reflects relationship between human and environment" (Li et al., 2013, p.769). Recalling from Table 4.32, the general Malaysian public could be considered as having considerably high level of awareness towards environmental issues, given that about 84.17% (n = 303 [279 + 24]) respondents showed an optimistic awareness for environmental issues. In fact, none expressed consent for "disagree" or "strongly disagree". These results imply that Malaysians value and look forward to living in a healthy natural environment. They are conscious about the importance of such well-being, and are willing to behave in ways that give rise to its preservation.

Such results above are in agreement with some past studies carried out on Malaysians, which demonstrated evidence for environmental awareness that ranged from moderate to high level (Aminrad et al., 2012, 2013; Mei, Wai, & Ahamad, 2016). For example, the study of Aminrad et al. (2012) found a moderate and high level of environmental awareness among the sampled teachers and environmental specialists respectively. This high level of awareness was associated to activities and attention drawn by newspaper, television, radio and magazine coverage on environmental issues in Malaysia, as well as the concern by government and

non-government organizations (Aminrad et al. 2012). In another more recent instance which surveyed among the secondary students, high level of awareness was ascribed to factors related to environmental education such as families, teachers, media, private reading, and school curriculums on increasing environmental view among students and society (Aminrad et al., 2012). Still, in another instance, the recent National Environmental Performance Index (EPI) which was set up to assess environmental awareness and behaviour among Malaysians, had also reported high levels of environmental awareness in issues of water pollution, air pollution, and waste management (Mei et al., 2016).

At the more elaborated level, this general view of environmental awareness above is also observably in line with the level of its corresponding four dimensions. As tabulated in Table 4.32, respondents' remarks for the stance of "agree" and "strongly agree" amount to over 50% for all four dimensions. The responses for "disagree" was rated the lowest in all dimensions, while none rated "strongly disagree".

The current study believes that, the high level of environmental awareness among Malaysians has indeed benefited from the incremental workflow from cognitive through behavioural awareness, in which awareness has taken shape incrementally. As tabulated in Table 4.32, cognitive dimension has received 86.66% consent for optimistic agreement ("agree" and "strongly agree"), this pattern of high level is also observed for affective (93.06%), conative (50%), and behavior (71.94%) dimensions respectively.

Therefore, it could be perceived that, a vast majority of Malaysians are cognitively aware of environmental issues in Malaysia, and that they tend to hold beliefs and knowledge that are in the favor with environmental concern. They are also emotionally attached to things about the wellness of the natural environment,

which in turn triggers their willingness and tendency to take action concerning the environmental well-being , e.g., supporting environmental policies or personal action that prevent personal harm. All the above incrementally leads to actions.

The above discussion is also empirically sounds. According to Schaffrin (2011), the cognitive dimension is the personal knowledge and believes about causes, responsibilities, and solutions for environmental problems. Later, on the basis of their knowledge and believes (cognitive dimension), the affective dimension adds an emotional or evaluative part where individuals decide whether the postulated consequences from environmental problems are good or bad (more or less seriousness). Further, this evaluation (in affective dimension) continues to activate the conative dimension of behavioural intention, which either reflects supports for environmental policies or personal action to prevent personal harm. This final point is then works to transpose the intention into real action, which is the behavioural dimension.

In addition, this research also believed that the considerably high level of environmental awareness found might also partly due to the composition of respondents in this study, which reflects maturity in discerning the importance of environment for quality living. For instance, as indicated in Table 4.11, the current study found that about 90% of the respondents were in the active engaging age periods, which were represented by the age groups of 18-22 and 23-27 years old. There was only one (1) respondent who was below 18 years old. Further, the findings also showed evidence to claim that there was indeed favorably high exposure to media among the Malaysian. It was found that about 84% of respondents read both newspapers and online news media. In fact, the current study revealed the longstanding importance of newspaper despite the 21st century media technology advancement. While only about 2.5% of the respondent reads form only the online news media, 13.1% read newspapers only. This view

reflects optimistic indication that Malaysia is likely to witness incremental pattern of environmental awareness among Malaysian in the near future.

5.3.2 Perceived Media Coverage and Environmental Awareness (Research Objective 2)

The second research objective aims at investigating the relationship between perceived media coverage and environmental awareness. This research objective corresponds to hypothesis H1, which postulates that perceived media coverage positively and significantly related to environmental awareness.

The support for hypothesis H1 was established, given the statistically significant positive relationship revealed between perceived media coverage and environmental awareness (β = .443; *t*-value = 9.999; $p < 0.0001$), as reported in Table 4.30. This finding suggests that properly purported media coverage would give rise to environmental awareness among public.

The significant positive association found between media coverage and environmental awareness could be explained by three possible reasons. First and foremost, this finding is consistent with past studies which demonstrated the similar results. For instance, the finding corresponds to past studies which found media coverage (e.g., newspapers and broadcast coverage) correlated significantly with public concern and awareness of a wide range of environmental issues such as climate change, global warmimg, environmental pollution, and waste disposal (Brulle et al., 2012; Chokriensukchai & Tamang, 2010; Harring et al., 2011; Mikami et al., 1995; Sampei & Aoyagi-Usui, 2009).

Take a specific instance. Kim et al. (2002) examined media coverage on the issue of development of Southwest Park in the city Ithaca, New York. It was concluded that media coverage of certain aspects of the issue exerted significant

influence on the salience of these aspects in public cognition. Hence, the salience of an issue in media coverage could also have its salience in the minds of public related to the issue of interest. This view is also in part supported by some recent studies which contended the likewise results of public opinion as a reflection of the prominence of media coverage (McCombs, 2013).

In some other instances, the studies of Brulle et al. (2012), and Sampei and Aoyagi-Usui (2009) had revealed newspapers and broadcast coverage as correlated significantly with public concern and awareness in issues of climate change and global warming in the United States and Japan. Likewise, Agbatogun (2009) examined the extent to which the perceived coverage of print media and broadcast could predict the level of teacher's awareness and participation in the political activities in Nigeria. The researcher found a positive combined effect of the former on the latter. Another supporting empirical result was also found in a more recent study of Gollust et al.'s study (2013), which found significant positive association between media coverage (as measured in volume of news media) and adults' awareness of Human papillomavirus (HPV) vaccine.

Likewise, Chokriensukchai and Tamang's (2010) study which sampled from among 2,500 middle school students, unearthed a positive association between the exposure to media and awareness on global warming issue amongst youths in Thailand. These recent empirical findings, indeed, were well consistent with pattern of broadly-cited past findings, such as the one by Shanahan et al. (1997). In Shanahan et al.'s study, a positive association was found between exposure to television messages and various aspects of belief and knowledge related to environment.

Secondly, the significant positive relationship between media coverage on environmental awareness is also consistent with theory of agenda setting and theory of framing. Theory of agenda setting explains the process through which media devotes relevant attention to a certain issue in news coverage by influencing the rank order of public awareness of the issues and their attribution of significance to it (McQuail, 1994). In the like but more meticulous manner, theory of framing provides an explanation as to how media is able to urge users to think in a certain way about the content of information they disseminate (McQuail, 1994). The above theoretical view implies that, media can make certain environmental issues (selected agenda) appeared more significant compared to others through agenda setting; media can also, through framing process, plays a critical role in influencing users' perception of the environmental issue and their disposition toward environmental awareness. Both theories uphold the persuasive ability of media in exacting users' attention to a specific issue by directing their focus to a selected agenda, and influence them to think in a certain way. Therefore, as far as media's impact on users is concerned, the embodying essence of both theories lays a constructive ground to support the significant positive impact of media coverage on environmental awareness in the current study.

Thirdly, apart from the foregoing discussion of empirical evidence and theoretical support on media coverage and environmental awareness, the significant media coverage-environmental awareness relationship is also believed to be partly explainable by the prominent qualitative role of media in relation to public environmental awareness, based on the notion that mass media serve as a primary source of information (Aoyagi-Usui, 2008; Haron et al., 2005; Wakefield & Elliott, 2003). Possibly in conditions where public have few sources of information to turn

to (Atwater et al., 1985; Beck, 1992; McCombs, 2013; Nelkin, 1995; Shanahan et al., 1997), mass media could possibly be the alternative, and that this extend a certain level of effect on the public regarding environmental issues. In fact, mass media has been credited by users at large, in both Malaysia and overseas countries, as a major source of information about environmental issues (Rahim et al., 2012; Ahmad & Ali, 2012; Balraj et al., 2009; Haron et al., 2005; McCallum, Hammond, & Covello, 1991; Said et al., 2003).

In the specific context of Malaysia, the constructive impact of mass media on environmental awareness could also partly due to the enhanced attractiveness and reaching-out potentials of mass media following the transformations of media system in Malaysia, such as the emergence of online media. The colorful media content and the extended convenience brought about by the borderless feature make news appears more attractive to the mind and psychology of Malaysian readers (Daud, 2008). In fact, the online mass media has become the main source of information for young active audiences of Malaysia (Ahmad et al., 2011).

5.3.3 The Moderating Effect of Green Values on the Perceived Media Coverage - Environmental Awareness Relationship (Research Objective 3)

The third research objective is put forth to examine the moderating effect of green values on the relationship between perceived media coverage and environmental awareness. This research objective is addressed by hypothesis H2 and hypothesis H3 respectively. While hypothesis H2 addresses the direct relationship between green values and public environmental awareness, hypothesis H3 examines the moderating role of green values on the relationship between perceived media coverage and environmental awareness. It was the intention of the current study to hypothesize and cast light on the direct relationship between green values and environmental

awareness, considering the newness of green values as a moderating variable in classic communication studies. Further, green values as an empirical variable is originated from behavioral studies and it had been contextualized into the setting of the current study to meet the need of the study.

To recall from Table 4.30, green values was found positively and significantly related to environmental awareness (β 0.692; *t*-value = 25.215; $p < 0.0001$), hence supporting hypothesis H2. However, no statistically significant moderating effect of green values was revealed to support hypothesis H3 (β = -0.123; *t*-value = 1.267; $p = 0.1030$).

As to the supported hypothesis H2, although green values per se and / or its association to environmental awareness are still nascent in the literature of media and environment communication, the positive significant relationship between green values and environmental awareness found in the current study can be traced back to past research which presented evidence of positive association between green-related values (e.g., egoistic, altruistic, biospheric, self-transcendent, self-enhancement and achievement values) and environmental related concern (e.g., environmental concern, awareness of environmental consequences, participation in energy-saving, personal car use reduction, etc.) (Lasuin & Ching, 2014; Latif et al., 2012; Shahnaei, 2012; Mirosa et al ., 2011).

For instance, Lasuin and Ching (2014) found the concern of self-image significantly influenced green purchasing intention among the university students in Kota Kinabalu, Malaysia. In their study, self-image was defined as a value of how an individual perceived himself or herself as acting in environmentally friendly manner, and thus denoting green values. Such examination of self-image as a type of values that cast potential bearing on environmental behaviors is also consistent with Li et

al.'s (2013) work which subsumed self-image as one dimension of self-interest values for perceived green values. Similarly, Mirosa et al (2011) found that values which were related to the achievement value ranked the highest and most influential for efficient energy-saving behavior in domestic homes. The researchers further concluded that campaigns which capitalized on achievement values such as capability and intelligence in their appeals tend to be more effective than those that used other types of appeals.

Another noteworthy empirical support for the significant positive relationship between green values and environmental awareness includes the examination of the effect of values with people's willingness to reduce personal car use (Nordlund & Garvill, 2003). In Nordlund and Garvill's study, self-transcendence and ecocentrism were found significantly contributing to explain such pro-environmental behaviour as personal car use reduction. Likewise, anthropocentrism was found to influence the awareness of environmental consequences to humankind.

Likewise, past study also found biospherically-oriented people more willing to donate to environmental organization (De Groot & Steg, 2008). This result is consistent with the positive association found between ecocentrism and personal car use reduction in the study of Nordlund and Garvill above. In fact, ecocentric and biospheric values carry very close content in definitions. In the like interpretation, De Groot and Steg's study also revealed a positive relationship between altruistic value and people's willingness to donate to humanitarian organizations. This significant finding was also likened to that of the significant influence of anthropocentrism on the awareness of environmental consequences to humankind in Nordlund and Garvill's study above. The empirical supports put forth above all boil down to

Poortinga et al.'s (2011) view that, people's understandings and attitudes are truly strongly influenced by their enduring values and existing ideologies.

Besides empirical evidence, the positive significant relationship between green value and environmental awareness is also explicable by the rationale of theory of value belief norm. The theory postulates that values have an influence on the awareness of environmental consequences (Stern et al., 1999). Such theorization is also found applied in past empirical works to support the underlying relationship between people's values and environmental-related concern and awareness (Corbett, 2005; Gärling et al., 2003; Mirosa et al., , 2011; Nordlund & Garvill, 2003; Poortinga et al., 2004; Schultz et al., 2005; Schultz & Zelezny, 2003).

In fact, in the very specific context of Malaysia, empirical studies found that green values had either direct (Latif et al., 2012; Shahnaei, 2012) or indirect (Tan et al., 2015) bearing on the recycling and green purchasing behavior of Malaysians respectively. For instance, Shahnaei's (2012) study examined the impact of the individual differences on green purchasing amongst the Malaysian consumers. Shahnaei's study found a significant positive association between green values as part of individual differences of people living in Selangor Malaysia and their green purchasing behavior. Likewise, the study of Latif et al. (2012) had revealed environmental value as a significant predictor of recycling behavior of people living in the urban areas of Kuala Lumpur and Kinabalu. As environmental value is one element of green values and behavior is also one of the environmental awareness dimensions, it implies that green values could have potential impact on other environment-related behaviors and environmental awareness issue at large.

Further, the positive impact of green values on EA amongst Malaysians could also possibly attributed to the optimistic and empathetic feelings Malaysians have

towards going-green, which resulted from the exposure they receive from the Malaysian government from time to time. For instance, the Malaysian government has publicized a variety of strategies to implement sustainable consumption and development. In this line, policies have been initiated to boost the environmental sustainability, through which people are encouraged to buy green goods and commodities, and incentives are also provided to firms which produce environmentally-friendly products (Chen & Chai, 2010). The government is also striving to achieve the green-country status, as the government earnestly involves in many green projects, such as those promoting green technology, green business, and green consumerism among Malaysians (GreenTech Malaysia, 2010, as cited in Aman et al., 2012). The government also adopts social advertising as a tool to educate and raise environmental awareness among the public (Haron et al., 2005).

On the reverse, despite the positive impact of green value on environmental awareness found in the current study, the interaction between green values and media coverage however did not lead to a significant moderating role of green values, as hypothesized by the current study. The insignificant moderating role of green values on the relationship between media coverage and environmental awareness suggests several possible interpretations.

Firstly, taking the results of both hypotheses H2 and H3 for careful interpretation, the variable of green values could be seen as that, it has a minimal statistical moderating impact on the hypothesized relationship, but is of caution not to be interpreted as unrelated. Therefore, the interpretation could be that, though green values had a direct impact on the awareness of environmental issues among Malaysians as revealed in the current study, it is not unthinkable that such impact might possibly not amount up to a sufficient level which yields a significant

interaction role to influence the effect media coverage could have cast on environmental awareness.

More directly put, even though Malaysians possess a certain level of green values, the level however is not significantly high enough. This phenomenon is also somewhat partly portrayed by the statistical evidence of green values' dimensions which demonstrated a medium level of a range between mean 3.93 and mean 4.32 (Table 4.24). In this view, as coverage on environmental issues provided by media interacts with the considerably medium level of green values among Malaysians, the resulting outcome does not enable the environmental information reported in the media to appear persuasive and hence did not trigger people awareness towards the environmental issues reported.

In the above view, the insignificant result of moderation though was not as hypothesized, it is however a possible situation consistent with limited effects theory. According to limited effects theory, individual's differences pertaining to their cultural givens, cultural resonances, and attitudes towards objects influence the extent to which media can influence public. The theory implies that the potential of green values as a part of the individual differences that make media coverage's influence contingent upon them, and hence the moderating potentials of green values on the impact media coverage has on environmental awareness.

Secondly, another possible reason for the insignificant moderating effect of green values could be related to a considerably weak bilateral communication and understanding (interaction) between media institutions and users. Unlike government who can interact closely with media institutions through regulatory monitoring and cooperation in relevant aspects of matters and vice-versa, users often do not have such privilege. Therefore, due to the interaction gap between users and media

institutions, it is possible that the roles from both parties, though constructive, are not fitting to each other, and hence the insignificant interaction effect.

Thirdly, when considering the highly significant and strong association between green values and environmental awareness, one other possible reason for the insignificant moderating role when green values interacts with media coverage could also be that which is related to the way an environmental message is framed in the media in Malaysia, and that media coverage has not appeared persuasive enough.

A possible indication to this educated guess is the rather moderate mean values of media coverage and its dimensions, which range between the values of 3.33 and 3.90 as demonstrated in Table 4.24. Delivering messages in a manner that is congruent with people values play important role in raising public awareness about environmental issues (Schultz & Zelezny, 2003). In other words, personal relevance of the covered objects to audience is important for public to be engaged. Also consistent with Martyniak's (2014) view, in order to make the subject more meaningful and relevant, media coverage need to take the public values and worldviews into account.

The above claim is also explicable by the explanation by Schultz and Zelezny (2003). The researchers revealed that, when environmental protection is framed as requiring sacrifice - “using less”, “simpler living”, “giving up some of the comforts that are available”, and “incurring greater inconvenience” for the sake of a broader goal” (p.131), such messages would appeal to those who believe in or endorse the new environmental paradigm, but not persuasive to those who believe in the life goals of materialism, personal wealth and success. Thus, it is possible that, when environmental information is framed as self-sacrifice or doing less, people might be

less appealed or moved by the environmental message, and hence having green values is not able to promote a positive interaction effect with media coverage.

Fourthly, the insignificant finding may also possibly due to sample-specific reasons, such as the use of only university students, or other reasons.

5.3.4 The Moderating Effect of Government Role on the Relationship between Perceived Media Coverage and Environmental Awareness (Research Objective 4)

Research objective 4 tests the moderating effect of government role on the relationship between perceived media coverage and environmental awareness. This research objective pertains to two hypotheses, namely hypothesis H4 and hypothesis H5. Hypothesis H4 was proposed to examine the direct relationship between perceived government role and environmental awareness, while hypothesis H5 tests the moderating effect of perceived government role on the hypothesized relationship. In particular, a stand-alone hypothesis was put forth for the direct relationship between government role and environmental awareness, because perceived government role as a moderating variable is still rather new in the context of communication studies.

As reported in Table 4.30, the current study found statistical evidence for the significant positive association between government role and environmental awareness ($\beta = 0.088$; t-value = 2.083; $p < 0.05$), hence supporting hypothesis H4. The findings also revealed a significant moderating effect of government role on the relationship between media coverage and environmental awareness ($\beta = 0.145$; t-value = 2.391; $p < 0.01$), hence an evidence to support hypothesis H5. Statistically interpreted, the supported hypothesis H4 means that the greater the level of government role, the greater public's environmental awareness will be. Likewise, the supported hypothesis H5 means that the positive relationship between media

coverage and environmental awareness becomes stronger when the level of government role is greater. Notably, although government role was found to assert a small effect size of moderation ($f^2 = 0.040$), this effect size though small does not necessarily suggest that the underlying moderating effect is negligible (2003). According to Chin, Marcolin, and Newsted (2003), "Even a small interaction effect can be meaningful under extreme moderating conditions; if the resulting beta changes are meaningful, then it is important to take these conditions into account" (p.211). Here, the discussion for the supported hypothesis H4 is first discussed, and then the supported hypothesis H5.

At the foremost, the significant finding for the positive association between government role and environmental awareness can be traced back to, firstly, past studies which associated government role to environmental behaviour, and found significant positive relationship. For instance, some past studies had found government role to be the main determinant of green behavior intention or green purchasing behavior among Malaysians' consumers (Chen & Chai, 2010; Mei et al., 2012; Sinnappan & Rahman, 2011).

Take observations of some specific examples. The study by Sinnappan and Rahman (2011) had revealed government role as one important predictor of green purchasing behaviour, and that consumers believe that government also plays an important role in building green purchasing behaviour among the people. This finding is also similar to Chen and Chai's (2010) study, which found consumers' attitude of government's role and their personal norms significantly related to green products purchase. Also, Mei et al. (2012) found significant influences of governmental initiative, environmental knowledge, environmental attitude, and peer pressures on green purchase intention among the Malaysian consumers. Given that

the consumer's behavior (behavioral environmental awareness) and intention (conative environmental awareness) are dimensions embedded within the environmental awareness construct, it is therefore commendable that customer's attitude toward government role in environmental issues is a main determinant of people awareness on issues of environment.

In a another study within the Malaysian context, Rahim et al.'s (2012) work had reported youths as having positive perception towards green advertising campaigns propagated by the government, hence their resultant awareness on green living. The researchers suggested that improved message delivery, creativity and information in governmental green advertising campaigns would encourage the Malaysian youths to respond to green living in practice.

Secondly, besides the past empirical evidence above, the qualitative importance of government role in environmental conservation and sustainability also offers some essential explanation. Government as the regulator and national policy maker is one of the utmost influential authorities to exercise new rules and regulations upon the public when it comes to the benefits for the public (Stoddart et al., 2012). The government has been referred to the locus of responsibility for addressing environmentally-related issues within a country, given its power to set regulations and lead companies and citizens toward pro-environmental behaviours (Stoddart et al., 2012).

In fact, it was claimed that, no environmental conservation can be successful without government intervention (Hepburn, 2010). Though some studies found individuals as the driving force in dealing with environment rather than organizational actors such as the government, corporations or environmental groups (Chukwuma, 1998; Stoddart et al., 2012), there are also a number of other studies

which showed that people perceive preservation of the environment as a main responsibility of government (Curtin & Rhodenbaugh, 2001; Polonsky, 1994; Stoddart et al., 2012; Tsen et al., 2006)

For instance, according to some relevant work such as Sinnappan and Rahman (2011), government has the authority to enforce, restrict or ban practices and activities that are harmful to the environment, as well as the health of people. The enforcement of environmental-prioritized rules and regulations would compel individual consumptions and companies' production within reasonable environmental considerations. Campaigns and environmental education by government to the public would also give rise to people awareness and attitudes, which in turn change their behaviours and practices.

In another example, Ali et al. (2011) argued that the shaping of environmental attitudes among people may require that government take initiatives to attract or encourage people to care for the environment. Such notion of government role could be observed in government incentives such as tax exemptions, subsidies and provision of better investment opportunities to environmental-friendly businesses which promote green products and practices among people.

In the Malaysian context, the Malaysian Green Technology Policy is an instance of the nation's commitment to the vision of a 'Green Malaysia' a reality. The Green Technology Policy outlined five strategies to implement the 'Green Malaysia' framework, namely, "strengthening institutional frameworks, providing a conducive environment for green technology development, intensifying human capital development in green technology, intensifying green technology research and innovations, as well as ongoing promotion and public awareness" (Desan, 2009). In addition, past studies had also reported that the increase of knowledge through

advertising, journals and websites by government could increase the purchasing behaviors for green products among the Malaysian consumers (Shahnaei, 2012).

As to the significant moderating effect of government role on the relationship between media coverage and environmental awareness, there are also several possible explanations worth pondering. The first empirical support for the significant interaction is the earlier discussed empirical evidence of the significant relationship between government role and environmental awareness above.

Secondly, the current study offers an explanation from the perspective of government role being a context moderator. The significant moderating effect of government role on the relationship between media coverage and environmental awareness could also possibly due to the close interaction between government and media institutions in the matters related to environmental preservation. In this specific view, government is able to work with media institutions to build greater media capacity on environmental reporting. The feasibility of such view of close interaction is evident in past studies. For instance, the case study from Bulgaria demonstrated how government works closely with media to builds its capacity through regular press conferences and large public awareness campaigns (UNEP, 2009). Notably, "governmental policies are not simply legally binding mandates imposed on firms and other polluters, they also include policies and programs such as voluntary government/industry agreements, joint research and development efforts, government information dissemination programs, grants, subsidies, transfers, taxes, and other program initiatives" (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013, p.16).

Indeed, the correlation between media content and audiences has been contended as not singular or one way (Happer & Philo, 2013). Government role is

obvious in that it could influence the amount and the type of environmental information accessible to the media and consequently influence the public response to certain issues. As policy makers, government can both feed information into a wide range of media outlets and anticipate public response to the way their policy is formed. They also could anticipate the way their words are reproduced while mediated through different media outlets. Thus, in this manner, the government role goes beyond influencing media coverage on the issues of concern, but indeed transcends its implication on public awareness of these issues as well.

In fact, government provision of environmental information is very powerful and effective tool to set the environmental agenda or priorities in the country, particularly with regards to media, other political actors and public opinion (Stephan, 2002). For instance, government disclosure of pollution information was found to be correlated with media coverage, which in turn determined the importance attached to these issues by the public, and thus facilitate the collective action (Hamilton, 1995; Lynn & Kartez, 1994). Therefore, the impact of government authority in setting environmental agendas transcends the possible impact media coverage has on the public awareness.

Thirdly, besides the explanations above, the current study believes that the significant moderating effect of government role is also partly due to the appropriate introduction of government role as fundamentally consistent the theoretical view of Baron and Kenny (1986) that, the inconsistent findings of an association invites further investigation into possible contingent variables which might offer additional explanation for the relationship. In this view, while mass media's potential in raising public awareness about environmental issues is evident across literature study, either theoretically (Briggs & Burke, 2009; Rahim et al., 2012; Ahmed & Ali, 2012; Balraj

et al. 2009; McCombs, 2013; Shanahan et al.,1997) or empirically (Brulle et al., 2012; Chokriensukchai & Tamang, 2010; Harring et al, 2011; Sampei & Aoyagi-Usui, 2009), findings of the reverse was also found (Suhonen, 1993; Mikami et al., 1995). In fact, there were also studies which revealed mixed results in one particular work (Arlt et al., 2011; Laurian, 2003; Shanahan et al., 1997).

Finally, the workability and viability of government role as a moderator in strengthening media's impact on environmental awareness also conforms to limited effect theory, as it could imply that any possible effect by a government in environmental issues is dependent on the differences or preference in their cultural givens, cultural resonances and attitudes towards the objects, which in turn influences the extent to which government's interaction with media could influence the public. A government with a more pronounced environmental concern and the intention to raise people's awareness would do more or deal more seriously should chances exist for them to preserve the environment through interaction with media, which in turn affect the end outcome.

5.4 Implication of Research

This study has contributed the body of knowledge regarding media coverage, public environmental awareness and role of government and green values in environmental communication studies. Specifically, theoretical and practical implications of the study are discussed in the following sections.

5.4.1 Theoretical Contributions

The current study contributed to several important theoretical insights.

Firstly, this study fill in the gap of empirical evidence related the theoretical notions that link media coverage to public environmental awareness. Apart from the

dearth of the conceptual and empirical evidences that relate media coverage to environmental awareness in the Asia generally and Malaysia in particular, empirical gap still exist in regards to the theoretical postulations despite of the linkage found in the literature (Pulia, 2008; Shahnaei, 2012).

Specifically, the issue of media coverage of environmental issues has received a great deal of attention most of which have focused on observing the pattern and the trend of the coverage. Unlike the above, the current study examined the influence of media coverage in establishing an association with public awareness and concerns related to environmental issues. The outcome of the current study has provided empirical evidence concerning the role of media coverage in relation to environmental awareness among Malaysia public. This particular study exhumed the controversial issues that stand as clogs in the wheel of progress of developmental communication, especially such that pertinent to the potential influence of media on public attitudes and awareness.

Further, media theorists posited that media coverage is the source of the image that public has about the external world, including the environment. To preserve environment, citizens need to be fully aware of what pose a danger or threat to their external world. Without media coverage, public may have a minimal knowledge about environmental issues and environmental risks may go unnoticed by people. Therefore, public environmental awareness requires media coverage of environmental issues otherwise public environmental awareness and their responsibilities toward protecting the environment would be constrained.

Secondly, the current study had developed the measure of perceived media coverage to address the absence of an existing instrument to measure media coverage from the public perspective. Although there has been numerous past literature

discussing about media coverage related to public awareness across various areas such as politics (Agbatogun, 2009) and health (Lee et al., 2013), there was none noticeable empirical works, to the knowledge of the researcher, which had made the attempt to operationalize media coverage as perceived from perspective of the public, who are the end users of the media product. In fact, past studies had used different media-related measures to address research questions of various settings, which corresponded distinctively to their very research issues under investigations.

In particular, while many researchers have measured media coverage using the method of quantitative content analysis (Antilla, 2005; Brulle et al., 2012; McManus, 2002) and qualitative content analysis (Dudo et al., 2007; Mazur, 1998; McComas et al., 2001), this study contributed to an alternative measure of media coverage which is gauged (and perceived) from the public perspective, the end user of mass media. Further, due to methodological concern, perceived media coverage is operationalized as a continuous measure to ensure that it is captured from users' perceptions. Notably, the data and the measures of media coverage in past studies had been those that was obtained through the researcher's computation which involved qualitative (exploratory) works of content analysis to identify and count the number of appearance of an intended subject (Dudo et al., 2007; Mazur, 1998).

Notably, following the pre-defined definition of media coverage as to the amount and the prominence of media content on environmental issues, media coverage was operationalized as the extent to which the news was informative and educational. Therefore, the essence of informative and educational aspects of mass media functions was extracted from the existing media-centered measures. The items developed had been carefully evaluated through content validity and statistical assessment of reliability and validity. Perceived media coverage was found to be a

six-dimensional construct through EFA and CFA. This new measure would provide a foundation for future researches which aim at investigating media coverage from the perspective of the public.

Thirdly, the current study also contributed in that of the operationalization of the cognitive dimension of environmental awareness. Environmental awareness was operationalized as a multi dimensional measure, consisting of four dimensions namely, cognitive, affective, conative and behavior dimension. Among these dimensions, the affective, conative and behavior dimensions as well as part of the cognitive dimension were adapted from the existing measures.

Particular for the cognitive dimension, while the belief aspect was adapted from existing measure, the knowledge aspect of the measure was partly adapted and partly developed into usable form to suit the purpose of correlational study. Previous studies of environmental awareness did not incorporate the knowledge aspect of environmental awareness due to the absence of a continuous scale. Therefore, by filling this measurement void, the current research not only may explore and describe the level of cognitive awareness (knowledge), most importantly, the continuous scale of the knowledge aspect allows further examination of cognitive awareness together with other constructs within a correlation study design destined by the current research.

In addition to the above effort, both the dimensions of conative and behaviour were synthesized from different sources to incorporate a sufficient range of environmental topics (e.g., general, pollution, energy, recycling, and water), whereby it was hopeful to select the most suitable items that tallied to the context of the current study.

Fourthly, the study had introduced government role as a moderating variable on the relationship between media coverage and environmental awareness. Government role has not been studied as moderator in the past. As part of the theoretical contribution, a comprehensive literature study has been set forth to discuss the potential of government role as moderating variable. Furthermore, the examination of government role alone in the area of environmental awareness in relation to the media coverage is still scant. Therefore, the pulling and the review of literature on government role in this study contributed to the existing body of knowledge in media and communication fields.

In fact, as the relationship between government role and environmental awareness was a direct important component of supporting a potential moderation of government role on the association between media coverage and environmental awareness, the contributions could also be observed in that much research involving government role in environmental issues has focused on green products. Nonetheless, the role of government in relation to environmental awareness in other environmental issues is less likely to be investigated. To date, the current study only observed one study where government role is associated with public concern regarding the watershed development in the China context (Wang et al., 2013).

Fifthly, the theoretical contribution of the study also includes the operationalization and validation of the government role scale. To note, the literature study found that no obvious effort among the previous studies had been done to define the concept of government role when operationalizing and measuring the construct. Such line of past studies take the concept as something that is already understood (Chen & Chai, 2010; Sinnappan & Rahman, 2011; Wang et al., 2013). Further, its definition in some other studies only reflects certain element or aspect of

government role. For instance, Qader and Zainuddin (2010) defined perceived government legislations in the context of green purchasing as consumers' perception that governments should impose strict laws and regulations on environmental pollution. Qader and Zainudden's definition refers to perceived government legislations which constitute only one aspect of government role. However, the current study argued that a more suitable definition for the current study should capture a wider aspect of government role, which go beyond the mere legislative elements. is more suitable for study. Notably, the current study defined government role as enacting environmental related measures by government to prevent, control, and protect the natural environment. In this definition, government role constitutes the aspects of government-based initiatives and programs or activities related to environment (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Ali & Ahmad, 2012; A. Ali et al., 2011; Wahid et al., 2011), along side with the stringency and enforcement of environmental rules and policies (Sinnappan & Rahman, 2011; Stoddart et al., 2012).

The government role had been rather heavily revised. The current scale consists of 11 items. This scale is different from those used in the past studies as it was revised from several sources (Carman, 1998; Johnson, 2011; Nielson, 1999; Poortinga et al., 2004; Rahim et al., 2012; Wang et al., 2013; Weigel & Weigel, 1978) in order to include a sufficient range of perceptions which suit the specific context of the current study. Given that the construct was still new, the validated construct therefore also allows further examinations of government role in future research.

Sixthly, similar to government role, green values has also not been studied as a moderator in past studies. Its introduction as moderator in the current study is

therefore contributing significant theoretical insights. Though the variable of green values as a moderator on the relationship between media coverage and environmental awareness was found not significant in the current study, however its discussions provided a basis for further examination in future research. Further, this moderating variable has been carefully operationalized and validated. The current study has operationalized green values from different sources to provide a more comprehensive capture of green values. Contributions are also evident in the empirical and theoretical discussions made to pull together updated literature that propose the potential moderating effect of green values.

Seventhly, it is also important to note that the use of PLS analysis in communication studies is rare (Lowry & Gaskin, 2014). The PLS approach is a robust data analysis technique that is more suitable for a complex models like the one in this study (Hair et al., 2014). In particular, the use of PLS analysis, a component-based approach (versus the covariance-based approach, e.g., AMOS), is more suitable for the newly developed measure of media coverage of this study, which is an effort of theory development. According to Reinartz et al. (2009), PLS analysis works better for newness involving theory development.

5.4.2 Practical Contributions

Generally, the findings of this study are hopeful to be beneficial to the media institutions, government (or policy makers), and the general public.

i) To the media

The findings of the study would provide some inklings of the current state of media coverage as perceived by the public to the media institutions, such that careful thoughts would be invested for counter-checking the matter and devoting attention to

pave constructive ways for improvement accordingly. Positive changes from the improvement would grant advantages to further enhance the whole interactive process of message between two interdependent players, the media as the delivery and the media user as the receiver. The improvement of this interactive iterative process grants a long term benefit.

ii) To the government (policy makers)

Government, as the policy maker, is one of the utmost influential authorities to exercise new rules and regulations upon the public when it comes to the benefits for the public. None of the environment issue can reach the fruition without the proper assistance of the government body. Therefore, the findings inform the Malaysian government (policy makers) as to how Malaysians perceive environmental issue generally. The findings of the current study also provide the government the understandings of the most recent state and the real condition of environmental awareness among the Malaysian public alongside the sufficiency of media role, with which the new policy could be developed to directly tailor to the betterment of the issue at stake. For example, government may make new policies which enforce on the role the media as well as the role of public in coping with environmental issues in Malaysia.

iii) To public

On a practical note, the findings on the reality of public awareness concerning environmental issues provide a clear sign of warning to the public, so as to arouse the sense of responsibility and promote actions in them. Particularly, the media coverage construct which had been operationalized from the perspective of users, may to certain extent, provide some inklings to the public as to how they can become more

involved with the media institution as well as the media institutions' roles in reporting environmental issues. It is hopeful that this step may contribute to the starting point of a more interactive communication between media institutions and users.

5.5 Limitations of the Study

As any other empirical research which cannot possibly cover all and every aspect of a research, the findings of this study should also be considered with some limitations in mind. These limitations pertain to the study design, sample, and interpretation. Notably, some of the limitations offer avenues for further research.

The first limitation is related to the definition of the targeted sample (respondents) used to represent the population of interest. Due to the challenge of generating the sampling list to collect data from among all the Malaysian public, the current study used university students as the best representative sample of Malaysian public. Though the current study had put forth justifications to support the representativeness of university students as the sample, there might still be a possibility that the sample may not fully represent all Malaysian public. Therefore, such shortcoming must be taken into consideration while findings of this study are interpreted.

Secondly, this study adopted a cross-sectional design through which data was collected at a point of time. Cross-sectional was used to give way for the time and resources constraints. Though acceptable in social sciences, the short time frame in cross-sectional design does not allow fuller captures of the variables of interest. This limitation therefore also invites further future research be done using the longitudinal design as discussed in the next section.

Finally, the sample (respondent) used in the current research are university students studying in public universities in Malaysia. Therefore, direct generalization of the findings may not be appropriate for public in other national contexts. Findings of the study must also be interpreted with caution.

5.6 Recommendations for Future Research

There are several recommendations for future research flowing from the current study. The first recommendation is related to the first limitation discussed above, that is, the definition used to generate the sampling list. As put forth as the limitation of the study, the use of university students studying in Malaysian public universities as the most representative sample may not fully represent all Malaysian public. Future research should work further on providing a more comprehensive definition of sampling list for drawing respondents. The more representative sampling definition should go beyond university students to include sufficiently other segments of the Malaysian population. The research framework, in part or in whole, may be retested using this more representative sample.

Secondly, this study adopted a cross-sectional design through which data was collected at a point of time. The study is limited in empirically assessing the real impact of the predictors (i.e., media coverage, green values, and government role) on environmental awareness. Therefore, an interesting extension flowing from this research would be one that employs the longitudinal research design. In addition, abundant more similar cross-sectional studies should also be carried out using different sample sizes and national contexts to further test the associations hypothesized in the research framework. This is important to ensure that the findings of this study go beyond the reasons of context-specific or situational factors, and hence enhance their generalizability

Thirdly, the finding of the moderating role of green values on the relationship between media coverage and public awareness, though non-significant, need to be studied further in the future research. The basis for this recommendation is that, 'green values' was found to have a significant positive relationship with environmental awareness. Furthermore, the measurement construct of green values had been reconceptualized and operationalized through heavy revision of instrument. Particularly, the current study had operationalized green values from different sources to provide a more comprehensive capture of green values. Therefore, future research may retest the moderating potentials of green values using a larger sample or testing in different contexts. This line of retesting will contribute to further confirm if the insignificant moderating effect of green value was simply due to sample-specific or context-specific reasons.

Fourthly, as a moderator can also be a potential mediator (Hayes, 2013), future research may also further examine the mediating potential of green values on the relationship between media coverage and environmental awareness. It could be that future researchers may extract deeper understanding of the intervening nature of green values, that it should perhaps contribute to enhance the positive relationship between media coverage and environmental awareness when examined as a mechanism. In fact, the results of this line of future study could be further compared with future studies which replicate the moderation of green values on the relationship between media coverage and environmental awareness (as pointed out in the paragraph above), to get a better understanding of the intervening nature of green values.

Fifthly, in this study media coverage as an exogenous variable explain almost half (56%) of the variance of the public environmental awareness. Though this

percentage is deemed acceptable in social science, it however, indicates that there are other possible variables which may be considered along with media coverage in future research to test the real potential influence of media coverage among others in driving environmental awareness.

Sixthly, given that the measurement of media coverage was heavily adapted and revised from literature review to measure media coverage from the user's perspective, this measure need to be further validated through retesting in future research, especially in the specific field of environmental communication, but not limited to other related research areas**.** In particular, the dimensionality of the construct should be reexamined to further observe the stability of the six-factor media coverage discovered in the current study. Such exploration would enrich the literature of media coverage's measurement.

Finally, in this study, six constituent dimensions of media coverage were identified. These dimensions are namely, sufficiency of news, news prominence, frequency, news sources, attractiveness of news, and variety of media role. Given that examining the relationships between these dimensions and environmental awareness were beyond the scope of this study, it is well recommendable that the associations between these dimensions and public environmental awareness be examined in future research.

5.7 Conclusion

This chapter provides empirical discussions to all the findings corresponding to the research objectives of the study. In particular, a summary of thesis has been provided to give a brief account of the whole thesis. The current chapter discusses the findings according to the order of the four main research objectives.

Three direct relationships and two moderating roles were hypothesized and tested in this study. All hypotheses of direct relationships were found supported. However, while the moderating role of government role was supported, the moderating role of green values was. The discussion, while providing empirical and theoretical verification to the findings, also highlights the empirical and theoretical research gaps filled in by the current study. Theoretical gaps flowing from the measurements of all the focal constructs are among the note-worthy theoretical contributions of the study. In particular, the operationalization of the perceived media coverage construct from the public perspective has been highlighted. The heavy revision of the measurement scales of environmental awareness, green values, and perceived government role are also discussed. Therefore, the examinations of environmental awareness with media coverage, green values, and government role, in both the direct and moderated relationships, contribute to several rather new theoretical insights. This altogether contributes to the body of knowledge in the environmental communication field.

Besides the theoretical contributions, practical implications are also discussed. Generally, the findings of this study are hopeful to be beneficial to the media institutions, government (or policy makers), and the general public.

Towards the end of the chapter, methodological limitations and recommendations for future research are also discussed.

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Appendix 3.1

Questionnaire

Survey on Local Media and Environmental Awareness of Malaysian People

16 February 2016

Dear respondent,

My name is Khaled M.I. Abu Fayyad, a doctoral candidate of School of Multimedia Technology and Communication, Universiti Utara Malaysia. I am currently working on my PhD project, which aims to investigate the influence of local media coverage on public environmental awareness among Malaysian people.

This survey asks about your exposure to local newspapers and online news media coverage regarding the environmental issues in Malaysia. In addition, it asks about your awareness towards environmental issues as well as your stance on government role and green values concerning to environmental issues in Malaysia.

This survey is part of my PhD research project. As for academic purposes, therefore, all given answers will remain confidential. Your views are important, and please be noted that there is no right or wrong answer.

This survey consists of five sections to be filled in, including demographic information (Section A), perception on media coverage towards environmental issues (Section B), green values (Section C), government role (Section D), and public environmental awareness (Section E).

Your cooperation is highly appreciated

Thank you very much

Sincerely yours,

……..

Ph.D candidate
Khaled M.I. Abu Fayyad
Matric no: s93611

……

Academic research supervisors
Dr. Mohd Khairie Ahmad
Dr. Romlah Ramli
UUM College of Arts and Sciences
School of Multimedia Technology and Communication (SMMTC)
Universiti Utara Malaysia
Contact no: 04-928-5074

Section A: Demographic information

1. Name: _____(optional)

2. You are studying in:

	UUM Kedah
	UnIMAP Perlis
	USM Penang

3. Program of study:

	Ph.D degree
	Masters degree
	Bachelor degree
	Diploma
	Matriculation

4. Study mode

	Full- time
	Part-time

5. Semester of study: _____

6. Age. _____years old

7. Gender:

	Male
	Female

8. Race

	Malay
	Chinese
	Indian
	Bumiputera of Sabah & Sarawak
	Others.

9. Which state are you from?

Penang		Sabah	
Kedah		Sarawak	
Perlis		Negeri Sembilan	
Perak		Wilayah Persekutuan Putrajaya	
Pahang		Wilayah Labuan	
Terengganu			
Kelantan			
Selangor			
Melaka			
Johor			

0. Please tick (√) which among the following **local newspapers** you have read (Both printed or online).

	I **do not** read newspaper.

	Malay newspapers
	Berita Harian
	Berita Minggu (BH Ahad)
	Utusan Malaysia
	Utusan Melayu
	Mingguan Malaysia
	Kosmo
	Kosmo Ahad
	Harian Metro
	Metro Ahad

	Chinese newspapers
	Sin Chew Daily 星洲日報
	China Press 中國報
	Guang Ming 光明日報
	Oriental Daily 马来西亚东方日报
	Nanyang Siang Pau 南洋商報

	Tamil newspapers
	Makkal Osai
	Tamil Nesan

	English newspapers
	New Straits Times
	New Sunday Times
	The Star
	Sunday Star
	The Sun
	The Edge
	Star Metro

	Other newspapers

11. Please tick (√) the **online news media** you use.

	I **do not** read from online news media.
	Star Online
	Berita Harian Online
	Utusan Online
	New Straits Times Online
	Malaysia Chronicle
	Malaysiakini
	Malay Mail Online
	Bernama Online
	Free Malaysia Today
	MyCen News
	The Malaysian Insider
	The Rakyat Post
	The Heat Online
	The Ant Daily
	Others

Section B: Media coverage

Please circle your level of agreement for the following statements regarding the mass media IN MALAYSIA.

Mass media refers to: newspapers and other online news media.

No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	i) sufficiency of news					
1	Mass media reports useful information about environmental issues.	1	2	3	4	5
2	The environmental news is always reported in full-length story in the mass media.	1	2	3	4	5
3	Malaysian mass media has taught me a lot about the environmental issues.	1	2	3	4	5
4	Environmental issues reported often provide background information.	1	2	3	4	5
5	Environmental issues are often reported with constructive critics.	1	2	3	4	5
6	Mass media provides adequate reporting on environmental news.	1	2	3	4	5
7	Through the mass media, I know about the NGOs and associations that concern about environment.	1	2	3	4	5
8	Environmental issues are often deeply discussed with analytical information.	1	2	3	4	5
	ii) The prominence					
9	The news related to environment is easily found in mass media in Malaysia.	1	2	3	4	5
10	Environmental news often has its own full page.	1	2	3	4	5
11	Environmental news often comes with sufficient photos.	1	2	3	4	5
12	It is common to see environmental issues appear as big headline in mass media.	1	2	3	4	5
	iii) Frequency					
13	I can always see environmental issues (air pollution, water pollution, forest burning, etc.) being reported in the mass media from time to time.	1	2	3	4	5
14	I often see messages about environmental protection in mass media.	1	2	3	4	5
15	Whenever I need to look for information about the environmental preservation in Malaysia, I will try to locate it from the Malaysian mass media.	1	2	3	4	5
16	I can easily find reports of companies' misconducts which spoil the environment in mass media.	1	2	3	4	5
17	It is easy for me to access and read about news on natural environment in mass media.	1	2	3	4	5
	iv) News sources					
18	Mass media use number of news sources to validate the reports.	1	2	3	4	5
19	Mass media use a variety of news sources in their reporting on environment issues.	1	2	3	4	5
	v) Up-to-date					
20	Information on environmental issues provided by mass media is sufficient to keep me up to date.	1	2	3	4	5
	vi) Accuracy					

21	Environment information provided by the Malaysian media is often accurate.	1	2	3	4	5
	vii) Attractiveness of news					
22	Environmental news reported in the Malaysian mass media attracts my attention.	1	2	3	4	5
23	I like the way environmental issues is reported in the mass media.	1	2	3	4	5
24	The environmental news often triggers interesting discussions among me and my friends.	1	2	3	4	5
	viii) General agreement on the role of mass media					
25	Mass media plays important role to remind people on environmental consequences.	1	2	3	4	5
26	Environmental news in the mass media is effective to influence people.	1	2	3	4	5
	ix) News variety					
27	There is a wide variety of environmental issues reported in mass media of Malaysia (such as air quality, water quality, and land slide, etc.)	1	2	3	4	5
28	I can find environmental news happening all around the world in the Malaysian mass media.	1	2	3	4	5
29	The mass media covers a wide range of environmental issue happening within Malaysia.	1	2	3	4	5

Section C: Green values

Please circle your level of agreement t for the following statements.

No	**Statements**	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	It is important to me that the products I use do not harm the environment.	1	2	3	4	5
2	I always consider the potential environmental impact of my actions.	1	2	3	4	5
3	My routine and lifestyle are affected by my concern for environment.	1	2	3	4	5
4	I am concerned about wasting the resources of our planet.	1	2	3	4	5
5	I would describe myself as environmentally responsible.	1	2	3	4	5
6	I am willing to be inconvenienced to take actions that are more environmentally friendly.	1	2	3	4	5
7	Using green products can help to improve ecological environment.	1	2	3	4	5
8	I always prefer to use green products so as to set example to motivate others to do the same.	1	2	3	4	5
9	Using environmentally friendly products can reduce the pollution of the environment.	1	2	3	4	5
10	Using green products makes me feel relaxed.	1	2	3	4	5
11	Using green products gives me a feeling of harmony with nature.	1	2	3	4	5
12	Using green products makes me feel good.	1	2	3	4	5
13	I respect people who protects natural environment.	1	2	3	4	5
14	Acting environmentally friendly can help me to gain a pro-environment self- image.	1	2	3	4	5

15	Using green products can help me own a good image.	1	2	3	4	5
16	Green products contain less harmful ingredients to human.	1	2	3	4	5
17	Taking care of the nature environment is important to secure our health and safety.	1	2	3	4	5
18	Using green products is a guarantee of the high quality of life.	1	2	3	4	5

Section D: Government role

Please circle your level of agreement for the following statements.

No	**Statements**	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	In Malaysia, government enforces laws to make ordinary people protect environment.	1	2	3	4	5
2	Malaysia has clear strict rules to deal with companies which harm environment.	1	2	3	4	5
3	Malaysia government is doing a good job in promoting green living among public.	1	2	3	4	5
4	Malaysia government encourages people to make report if they notice any misconduct that harms the environment.	1	2	3	4	5
5	Government provides us the list of control agencies which we may report matters related to environment.	1	2	3	4	5
6	I can see sufficient green campaigns conducted by government in Malaysia.	1	2	3	4	5
7	I have heard that Malaysian government giving funds to research on technology for recycling waste product.	1	2	3	4	5
8	I'm satisfied with the environmental policies and implementation in Malaysia.	1	2	3	4	5
9	From time to time, Malaysia government launches campaigns on reducing garbage.	1	2	3	4	5
10	I often see government agencies cleaning up rivers and lakes.	1	2	3	4	5
11	Others think that government should do more to solve problems related to environment.	1	2	3	4	5

Section E: Environmental awareness

i) Feelings for the environment

Please circle your level of agreement for the following statements.

No	**Statements**	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I am frightened to think people don't care about the environment.	1	2	3	4	5
2	I get angry about the damage pollution does to the environment.	1	2	3	4	5

3	It makes me happy when people recycle used bottles, cans, and paper.	1	2	3	4	5
4	I get angry when I think about companies testing products on animals.	1	2	3	4	5
5	It makes me happy to see people trying to save energy.	1	2	3	4	5
6	I'm worried about environmental problems.	1	2	3	4	5
7	I am frightened about the effects of pollution on my family.	1	2	3	4	5
8	I feel upset when I see people throwing away things that could be recycled.	1	2	3	4	5
9	It makes me sad to see houses being built where animals used to live.	1	2	3	4	5
10	It frightens me to think how much energy is wasted.	1	2	3	4	5
11	It upsets me when I see people using too much water unnecessarily.	1	2	3	4	5

ii) Willingness to commit towards protecting environment

Please circle your level of agreement for the following statements.

No	**Statements**	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I'm willing to stop buying products from companies which pollute the environment, even though it might be inconvenient to me.	1	2	3	4	5
2	I would probably never join a group which is mainly concerned with environmental issues.	1	2	3	4	5
3	I'm willing to ride the bus to more places in order to reduce air pollution.	1	2	3	4	5
4	I'm willing to use less air conditioning to help save energy.	1	2	3	4	5
5	I'm willing to use dimmer light bulbs to save energy.	1	2	3	4	5
6	I'm willing to donate RM30 for raising fund to help the environment.	1	2	3	4	5
7	I'm willing to go from house to house to pass out environmental information.	1	2	3	4	5
8	I'm willing to write letters asking people to help reduce pollution.	1	2	3	4	5
9	I'm willing to go from house to house asking people to recycle.	1	2	3	4	5
10	I'm willing to separate family's trash for recycling.	1	2	3	4	5
11	To save water, I think I'm willing to use less water when I bathe.	1	2	3	4	5

iii) Behaviour

Please circle your level of agreement for the following statements.

No	Statements	Strongly	Disagree	Neutral	Agree	Strongly agree
1	I always consider the polluting effect of a product before buying.	1	2	3	4	5
2	I have asked my parents not to buy products made from animal fur.	1	2	3	4	5
3	I always make a special effort to buy products in recyclable containers.	1	2	3	4	5
4	I often switch products for environmental reasons.	1	2	3	4	5
5	I lodge complaint report to the authority about pollution problems.	1	2	3	4	5
6	To save water, I turn off water in the sink while brushing my teeth.	1	2	3	4	5
7	To save energy, I always turn off lights at home when they are not in use.	1	2	3	4	5
8	I have asked others what I can do to help reduce pollution.	1	2	3	4	5
9	I often read stories about the environment.	1	2	3	4	5
10	I don't like to leave the refrigerator door open while deciding what to get out.	1	2	3	4	5
11	I have asked my family to recycle some of the things we use.	1	2	3	4	5

iv) Beliefs & knowledge about environment

a) Belief

Please circle your level of agreement for the following statements.

No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Human populations are approaching the limit the earth can support.	1	2	3	4	5
2	Humans do not have the right to modify the natural environment to suit their needs.	1	2	3	4	5
3	When humans interfere with nature it often produces disastrous consequences.	1	2	3	4	5
4	Humans have severely abused the environment.	1	2	3	4	5
5	Plants and animals have equal right (to exist) as humans.	1	2	3	4	5
6	The balance of nature is strong enough to cope with the impact of modern development.	1	2	3	4	5
7	It is good that human are still subject to the laws of nature.	1	2	3	4	5
8	Environmental degradation is serious.	1	2	3	4	5
9	Resources from natural environment are not as abundant as we	1	2	3	4	5

	have thought.					
10	The balance of natural environment is very delicate and easily upset.	1	2	3	4	5
11	If human continue to deal harshly with the natural environment, we will soon experience a big environment disaster.	1	2	3	4	5

b) Knowledge (Breadth of knowledge)

1) Please put √ for the phenomena below that you have heard or known about.

No.	**Phenomena**	
1	Green house effect	
2	Global warming	
3	Acid rain	
4	Overpopulation/population explosion	
5	Extinction of plants and animals	
6	Ozone layers depletion	
7	Fossil fuel use	
8	The rise of sea level	
9	Energy-efficient technology	
10	Radiation leaking/ nuclear power plant	
11	Green consumerism	
12	Deforestation/destruction of tropical forest	
13	Wildlife preservation	
14	Export of hazardous materials to the developing countries	
15	Land degradation	
16	Sustainable development	
17	Nature conservation	
18	Biodiversity management	
19	Waste disposal problems	
20	Green marketing	

2) **True/False test**: Please put√ to indicate correct, and X to indicate wrong.

No	**Statements**	**True / False**
1	Ecology is the study of the relationship between organism and their environment.	
2	Environmental problems are a threat to all living things in the world.	
3	CFC used in the air-condition stands for CloroFluoroCarbon.	
4	Carbon monoxide is produced by vehicles.	
5	The most pollution of our water resources is caused by animal and human waste.	
6	Arsenic and silver nitrates are the most common poisons in water.	
7	Most of the lead in our air is caused by burning refuse.	
8	Recycling means that people buy things that can be used again.	
9	Disposable diaper is one example of recyclable items.	
10	ORANGE recycling bin for can and plastic.	
11	BLUE recycling bin for paper products.	
12	Dry iron is more energy saving than steam iron.	
13	Notebook is more energy saving than PC.	
14	Coal and petroleum are examples of fossil fuels.	
15	Burning coal for energy decreases needed acid rain.	

Appendix 3.2

Full reference for media coverage measure adaptation and development

Original and revised scale of media coverage measure

No.	Revised scale (media coverage.)	Original scale	Adaptation sources
	i) The depth of news content/ sufficiency/ adequacy		
1	Mass media report useful information about environmental issues	I acquire tangible and useful information about political parties' agenda through mass media.	Agbatogun (2009)
2	If there is any current event on environment abuse, I can easily find its full-length story in the mass media	" The general question asked of each item was whether it provided enough information for an individual"	Lemert, Mitzman, Seither, Cook, & Hackett (1977)
		content – jargon used, tone and comprehensiveness of story content	Hassan (2007)
		Public meetings and coverage in local newspapers are not sufficient to diffuse information about toxic waste. (from conclusion)	Laurian (2003)
		Respondents were asked questions about the type and the length of the programs they watched.	Chokriensukchai&Tamang (2010)
3	Environmental issues reported often provides background information	News comprehensiveness based on: Background info Constructive critics	Hassan (2007)
4	Environmental issues are often reported with constructive critics.		
5	Mass media provide adequate reporting on environmental News	Rubin and Sachs cited many examples of (in their terms) "inadequate" reporting of environmental news (revered). " The general question asked of each item was whether it provided enough information for an individual" (MI). this item in the original scale supposed to be in depth of news	Lemert, Mitzman, Seither, Cook, & Hackett (1977)
6	I know more about most NGOs and associations that concern about environmental issues through the mass media reporting.	I know more about all political parties' names, logos, and agenda through the mass media.	Agbatogun (2009)
7	* Environmental issues are often deeply discussed with analytical information	"discussion and analysis is a key element in raising environmental awareness"	Abdel Raouf " Mohammad" (2010); F:4d
		I access adequate information about political candidates' manifestos via the mass media.	Agbatogun (2009)
	ii) The prominence / placement		
8	The news related to environment is easily found in mass media in Malaysia.	General characteristics – for instance …. page of coverage; size of article and inclusion of photos,	Hassan (2007)
9	Environmental news often has its own full page.		
10	Environmental news often come		

	with sufficient photos.		
		Media salience of issues in the news is often exhibited through prominence of story treatment and display, only the front sections of the newspapers were analyzed. Each story was measured in terms of weighted column inches (based on 2-inch wide columns) in a manner that took into account the page on which the story first appeared, the number of column inches, graphics and headlines.	Atwater et al. (1985)
		audience salience was measured two ways: 1) how "personally" important respondents regarded each sub issue (the intrapersonal agenda) and 2) how important respondents perceived the news media to regard each issue (disposal of wastes, quality of water, hazardous substances, quality of land, quality of air and , wildlife conservation. (the perceived-media agenda). The present study used a perceived-media measure of audience salience to investigate whether audience members are indeed aware of which environmental issues are emphasized in the mass media and if they are aware, whether awareness translates into intrapersonal salience.	Atwater et al. (1985)
11	It is common to see environmental issue appears as big headline in mass media.	The coding unit was paragraph, measured in column inches. Each paragraph was coded into three categories including (1) disposal of waste, (2) air quality, (3) water quality. Each story coded to measure prominence through using various measures of attention such as placement, length, column length ,and headline width	Ader (1995)
	iii) Frequency of appearance		
12	I can always see environmental issues (air pollution, water pollution, forest burning, etc.) being reported in the mass media from time to time	These recoded news stories were then counted and categorized according to their pre-structured content analysis format. The frequency of appearance of eight other important or serious issues concerning japan at present….was also measured	Mikami et al. (1995)
13	I often see messages about environmental protection in mass media	How often do you come across messages related to environmental protection on TV? How often do you come across messages related to environmental protection on the internet?	Lee (2011, p.121); 4F
14	Whenever I need to look for information about the	Number of stories on climate change on nightly news shows of major	Brulle et al. (2012)

	environmental preservation in Malaysia, I will try locate it from the newspaper.	broadcast TV networks (NBC, CBS, ABC), the New York Times, Newsweek, Time, and U.S. News and Wprld Report were measured.	
15	I can easily find the reports on any misconduct of company which spoil the environment in the newspaper	Media coverage is measured as the number of articles covering environmental issues in four nationwide daily newspapers in Sweden.5 Media coverage is constructed as a standardized index, where the four newspapers are weighed equally; thus the content (the number of articles on environmental issues) of each newspaper is given the same weight in the index.	Harring et al. (2011)
16	It is easy for me to access and read about news on natural environment in the newspaper	The media agenda variable, like Gonzenbach (1996), was collected by accessing the Vanderbilt Television News Archive and collecting the number of broadcasts related to drug abuse each month for the time frame of this study and then aggregating to quarterly data.	2011 Hill et al. Economic, election Cycle – MedCov; F:7a
	iv)News Sources		
17	Mass media use numbers of news sources to validate the reports.	They are analyzed in terms of: news source – number and type of sources	Hassan (2007)
18	Variety of news sources are used in mass media reporting on environmental issues		
	v) Timeliness/ up-to-date		
19	The information on environmental issues provided by mass media is well sufficient to keep me up to date	-	-
	vi) Reliability / accuracy		
20	I think the information given on the Malaysian environmental issues is accurate.		
21	I think the Malaysian newspaper has taught me a lot about the environmental issue		
	vii) News variety		
22	I can see a wide variety of environmental issues such as air quality, water quality, and land slide in mass media in Malaysia	I am kept abreast of the various electoral fraud and political crises across the local government areas, states, and the country through mass media reports.	Agbatogun (2009)
23	I can find news related to volcanoes, flood, hurricane, etc happening all around the world in Malaysia mass media.		
24	The mass media covers a wide range of environmental issue happening within Malaysia.	topic selection – main topics coverage and topics related to it	Hassan (2007)
	viii) Attractiveness of news		
25	News of environmental issue	Documentaries focusing on	Chokriensukc

	attract my attention	environmental and global warming issues were not popular among youths (reverse)	hai&Tamang (2010).
26	I like the way environmental issues is reported in the mass media.	Not only are youths not attracted to serious information content ,… environmental content does not sell (reverse)	Chokriensukchai&Tamang (2010).
27	The environmental news often triggers interesting discussions among me and my friends.		
	ix) General agreement on the role of mass media		
28	I think media plays important role in highlighting environmental consequence	Respondents from NGOs were asked questions relating what ..; the role of mass media in protecting the environment and in making people aware of environment	Chokriensukchai&Tamang (2010)
29	I think the environmental news in the mass media is effective to influence people.		

Appendix 4.3

Results of outliers detection (EFA stage, N=365)

Table A

Chi-square (X^2) = 154.3140

No	Case id	MAH
1	526	117.7924
2	202	126.7258
3	721	129.7266
4	657	93.70215
5	10	131.5215
6	70	127.4481
7	223	159.0057
8	230	142.655
9	290	102.3162
10	283	143.1391
11	308	115.5343
12	278	124.7046
13	697	127.0361
14	131	159.4433
15	371	68.95557
16	435	94.647
17	173	150.1611
18	722	120.2124
19	720	101.3332
20	519	129.7802
21	203	216.2051
22	276	137.9208
23	219	149.1453
24	394	86.5837
25	684	80.63646
26	216	64.90726
27	217	64.90726
28	567	72.65783
29	34	117.5488
30	459	153.9441
31	323	93.4555
32	90	96.08711
33	660	77.15708
34	547	89.1905
35	500	145.5753
36	245	108.8569
37	200	55.82232
38	67	88.65426
39	174	63.12188
40	570	73.68481
41	392	133.8621
42	74	105.1719
43	340	92.8856
44	399	106.9353
45	638	69.5584
46	287	60.37133
47	11	62.99895
48	569	53.00421
49	269	55.20439
50	292	89.87377
51	286	79.79188
52	575	81.11198
53	354	83.67312
54	413	94.02975
55	123	72.2273
56	485	67.34452
57	236	84.11171
58	335	87.60229
59	432	96.26799
60	272	139.5608
61	179	133.5186
62	357	147.6516
63	334	59.94043
64	261	85.74973
65	285	101.3427
66	443	112.1394
67	601	105.4094
68	540	60.68134
69	436	120.8757
70	555	94.49694
71	212	128.3444
72	268	111.4291
73	531	114.0295
74	50	118.9422
75	258	87.04784

No.	Case id	MAH
76	32	98.67367
77	414	161.1861
78	337	94.03745
79	730	124.8777
80	12	65.05564
81	146	130.2965
82	135	172.4181
83	165	126.5083
84	260	80.09573
85	522	108.2948
86	31	117.6462
87	153	98.72649
88	532	114.2552
89	706	104.6867
90	427	108.4936
91	336	135.6451
92	497	88.84654
93	592	81.51473
94	484	47.29352
95	161	182.6104
96	221	100.5223
97	717	101.9507
98	650	88.68692
99	423	136.2704
100	209	177.0499
101	275	169.8487
102	551	80.15789
103	159	102.7562
104	583	84.96708
105	97	91.84861
106	353	108.8422
107	587	133.1776
108	631	182.2044
109	231	113.6836
110	579	135.6987
111	404	105.2142
112	237	57.42934
113	590	81.06892
114	183	82.86207
115	457	34.83374
116	102	80.11494
117	388	97.93237
118	666	111.3456
119	9	78.38832
120	662	111.3086
121	300	91.62953

No.	Case id	MAH
122	296	58.79831
123	627	98.22556
124	708	86.56442
125	124	118.1907
126	38	94.65771
127	201	134.3551
128	171	140.3997
129	251	103.3268
130	403	132.7787
131	674	112.6378
132	681	73.16742
133	28	46.61382
134	723	86.10381
135	218	130.8157
136	149	109.2135
137	154	142.5765
138	60	90.2137
139	416	113.16
140	5	75.72441
141	210	103.1323
142	4	101.2954
143	288	189.0663
144	175	133.3292
145	637	153.8173
146	704	43.50337
147	582	134.2952
148	145	123.4764
149	116	105.3444
150	207	72.00362
151	56	31.60076
152	616	78.46078
153	379	42.96396
154	156	87.80266
155	27	74.9718
156	350	73.06622
157	499	43.43906
158	644	74.38793
159	397	95.67101
160	178	38.98608
161	47	43.37639
162	303	62.23038
163	341	15.53583
164	699	14.25143
165	621	78.07657
166	81	90.80542
167	410	139.679
168	226	77.54688

No.	Case id	MAH
169	711	74.42583
170	364	108.9756
171	169	85.74014
172	534	88.0229
173	141	92.42105
174	455	65.94025
175	41	107.0536
176	277	123.8966
177	656	93.13963
178	466	117.571
179	2	217.7543
180	73	168.5143
181	199	99.13814
182	53	114.8277
183	557	82.60267
184	391	128.6427
185	61	182.9063
186	243	178.6649
187	299	92.09734
188	29	109.7009
189	198	95.27706
190	542	74.27602
191	589	77.77502
192	415	77.30351
193	246	78.2577
194	259	43.52924
195	366	114.5182
196	395	103.6011
197	594	146.4798
198	80	132.0282
199	7	132.3964
200	238	139.8699
201	525	84.36479
202	716	139.1845
203	518	110.7565
204	132	85.04342
205	264	72.22852
206	319	81.07459
207	8	107.4186
208	330	69.40122
209	362	94.02049
210	327	85.49757
211	318	57.97323

No.	Case id	MAH
212	254	89.35784
213	103	87.96429
214	118	88.18104
215	549	82.04686
216	599	102.8935
217	389	86.4007
218	434	99.07659
219	683	93.27587
220	619	102.3671
221	117	123.0943
222	573	76.07223
223	510	98.63134
224	196	121.2541
225	668	103.4654
226	79	92.99766
227	162	82.20957
228	580	134.9175
229	65	139.3464
230	533	85.32326
231	43	99.50659
232	614	125.52
233	402	139.3805
234	367	104.8986
235	138	161.2909
236	470	84.57956
237	311	113.8717
238	152	114.209
239	256	104.7181
240	565	94.32829
241	317	143.3546
242	528	53.00641
243	628	37.83423
244	688	84.52514
245	651	79.58892
246	72	101.1194
247	511	108.5618
248	472	67.00079
249	558	89.83751
250	508	94.35368
251	105	52.67774
252	635	75.77293
253	33	105.1568
254	168	78.91524
255	345	65.84944

No.	Case id	MAH
256	1	80.28027
257	155	66.44376
258	182	102.12
259	57	80.90329
260	630	69.61767
261	696	73.79323
262	181	73.16001
263	595	68.40063
264	478	54.66828
265	675	99.81302
266	431	121.0681
267	709	78.02947
268	126	117.7239
269	479	91.75582
270	640	155.7065
271	648	82.87004
272	608	126.9747
273	150	114.8198
274	671	96.89299
275	502	82.13559
276	550	134.1907
277	180	153.535
278	331	110.4251
279	351	94.50467
280	562	160.1353
281	685	112.5504
282	349	162.2043
283	607	123.6411
284	333	93.07701
285	342	125.6748
286	297	140.236
287	247	44.04977
288	425	122.0307
289	306	199.5957
290	615	88.7762
291	194	115.3797
292	281	131.4481
293	316	126.658
294	658	128.7562
295	646	113.8689
296	475	119.5227
297	14	85.60812

No.	Case id	MAH
298	253	80.19911
299	649	121.4519
300	93	77.696
301	408	88.24579
302	332	121.122
303	358	102.2983
304	59	81.07163
305	655	118.1441
306	524	102.1777
307	633	98.0732
308	428	163.3337
309	322	192.2693
310	620	62.01652
311	568	79.44843
312	140	135.179
313	629	82.72741
314	355	49.66857
315	486	88.17725
316	591	29.39954
317	85	141.1007
318	23	113.4913
319	624	73.63156
320	20	161.7596
321	24	92.12713
322	430	88.73976
323	66	59.62489
324	18	106.1421
325	710	140.7921
326	101	119.1856
327	310	94.88846
328	544	84.22705
329	68	103.3619
330	728	91.68248
331	206	75.07373
332	188	59.80186
333	546	52.21379
334	626	111.513
335	523	135.3287
336	189	106.6646
337	88	88.18514
338	464	135.6566
339	622	89.05464
340	578	123.699

No.	Case id	MAH
341	482	107.1652
342	312	101.1829
343	605	62.51156
344	604	91.92844
345	612	122.4
346	611	130.8121
347	84	110.2102
348	387	128.7046
349	380	65.13652
350	693	99.25325
351	370	84.46118
352	686	125.4437
353	669	84.57302
354	248	78.43973
355	21	91.59226
356	705	122.2451
357	98	94.17477
358	670	186.6192
359	401	111.3201
360	673	124.8873
361	115	107.2349
362	69	105.5722
363	449	176.4201
364	559	181.583
365	279	105.8757

Table B
Univariate outliers detection for government role using Z-score

N0	Id cases	ZGov1	ZGov2	ZGov3	ZGov4	ZGov5	ZGov6	ZGov7	ZGov8	ZGov9	ZGov10	ZRgov11
1	526	-0.65321	-0.44454	-0.26208	0.62072	-0.34804	-0.34002	-0.42817	1.02388	-0.4772	0.96719	1.29137
2	202	0.50417	0.63523	0.87673	0.62072	1.90035	-0.34002	-1.56063	-0.05622	-0.4772	-0.8811	3.49393
3	721	1.66156	1.71499	-1.4009	0.62072	0.77616	-0.34002	-0.42817	-1.13633	-1.61562	-0.8811	-0.9112
4	657	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	0.7043	1.02388	-0.4772	0.96719	-0.9112
5	10	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
6	70	1.66156	-0.44454	0.87673	0.62072	1.90035	1.78149	0.7043	1.02388	0.66122	0.04304	-0.9112
7	223	0.50417	1.71499	0.87673	1.78857	0.77616	-0.34002	-1.56063	-0.05622	-1.61562	-1.80525	2.39265
8	230	-1.81059	-1.5243	-1.4009	-0.54713	-1.47223	-1.40078	0.7043	-2.21643	0.66122	-1.80525	-0.9112
9	290	-0.65321	-1.5243	-1.4009	0.62072	-0.34804	-1.40078	-2.6931	-1.13633	-0.4772	0.96719	-0.9112
10	283	0.50417	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-1.56063	-2.21643	0.66122	0.04304	-0.9112
11	308	-0.65321	-1.5243	-0.26208	-1.71498	-1.47223	-0.34002	-1.56063	-1.13633	-1.61562	-1.80525	-0.9112
12	278	-2.96797	-2.60407	-1.4009	0.62072	0.77616	-0.34002	-0.42817	-2.21643	0.66122	-0.8811	-0.9112
13	697	-0.65321	-1.5243	-1.4009	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	-1.61562	-0.8811	-0.9112
14	131	-0.65321	-0.44454	-1.4009	0.62072	-1.47223	-0.34002	0.7043	-0.05622	-1.61562	-0.8811	2.39265
15	371	-1.81059	-1.5243	-1.4009	0.62072	-0.34804	-1.40078	-0.42817	-1.13633	-1.61562	-0.8811	0.19008
16	435	-0.65321	0.63523	0.87673	0.62072	0.77616	-0.34002	-0.42817	-0.05622	0.66122	0.96719	0.19008
17	173	1.66156	1.71499	0.87673	0.62072	1.90035	1.78149	0.7043	1.02388	1.79963	0.96719	0.19008
18	722	0.50417	0.63523	-0.26208	-1.71498	-0.34804	-0.34002	-0.42817	-1.13633	0.66122	-0.8811	-0.9112
19	720	0.50417	-0.44454	-0.26208	-0.54713	0.77616	-1.40078	-1.56063	-2.21643	-0.4772	-1.80525	-0.9112
20	519	-0.65321	-0.44454	-0.26208	-1.71498	-0.34804	-1.40078	-0.42817	-2.21643	-0.4772	-1.80525	1.29137
21	203	-1.81059	-2.60407	0.87673	1.78857	0.77616	0.72073	0.7043	2.10398	1.79963	0.96719	-0.9112
22	276	-1.81059	-2.60407	-0.26208	-1.71498	-2.59643	-0.34002	-1.56063	-1.13633	-0.4772	-1.80525	0.19008
23	219	-0.65321	-0.44454	-0.26208	-0.54713	-1.47223	1.78149	-0.42817	-1.13633	0.66122	0.96719	-0.9112
24	394	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	0.72073	0.7043	-0.05622	0.66122	0.04304	0.19008
25	684	0.50417	0.63523	0.87673	1.78857	1.90035	1.78149	1.83677	1.02388	1.79963	0.96719	0.19008
26	216	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-1.40078	-1.56063	-0.05622	-0.4772	-0.8811	-0.9112
27	217	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-1.40078	-1.56063	-0.05622	-0.4772	-0.8811	-0.9112
28	567	0.50417	0.63523	-0.26208	-0.54713	-0.34804	0.72073	-0.42817	-0.05622	-0.4772	0.04304	0.19008
29	34	-0.65321	0.63523	0.87673	-0.54713	-0.34804	0.72073	-0.42817	-0.05622	0.66122	-0.8811	0.19008
30	459	-2.96797	-1.5243	-2.53972	-1.71498	-1.47223	-2.46154	-1.56063	-1.13633	-1.61562	-0.8811	3.49393
31	323	0.50417	0.63523	2.01555	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
32	90	0.50417	0.63523	2.01555	0.62072	0.77616	0.72073	0.7043	1.02388	1.79963	0.96719	0.19008
33	660	-0.65321	-1.5243	-2.53972	-1.71498	-1.47223	-1.40078	-1.56063	-0.05622	-1.61562	-0.8811	1.29137
34	547	-0.65321	-1.5243	-2.53972	-0.54713	-0.34804	-1.40078	-1.56063	-1.13633	-1.61562	-0.8811	0.19008
35	500	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-1.40078	-1.56063	-1.13633	-0.4772	-0.8811	-0.9112
36	245	-0.65321	-1.5243	-0.26208	-0.54713	-0.34804	-1.40078	-0.42817	-1.13633	-1.61562	0.04304	-0.9112
37	200	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
38	67	-1.81059	-0.44454	-0.26208	-0.54713	-0.34804	0.72073	0.7043	1.02388	-0.4772	0.04304	1.29137
39	174	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-1.13633	-0.4772	-0.8811	0.19008
40	570	0.50417	-0.44454	-0.26208	0.62072	-0.34804	0.72073	-0.42817	-1.13633	0.66122	0.04304	1.29137
41	392	-0.65321	-1.5243	-0.26208	0.62072	-0.34804	-0.34002	-0.42817	-1.13633	-0.4772	-0.8811	-0.9112
42	74	-1.81059	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-1.56063	-1.13633	-1.61562	-0.8811	-0.9112
43	340	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	-0.4772	0.96719	1.29137
44	399	-0.65321	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	-0.4772	0.04304	-0.9112
45	638	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	0.66122	0.04304	0.19008
46	287	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
47	11	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	-0.8811	2.39265
48	569	0.50417	0.63523	0.87673	0.62072	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	-0.8811	0.19008
49	269	0.50417	0.63523	-0.26208	0.62072	-0.34804	-0.34002	0.7043	1.02388	-0.4772	0.04304	0.19008
50	292	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-1.13633	0.66122	0.04304	-0.9112
51	286	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
52	575	0.50417	-0.44454	-0.26208	0.62072	-0.34804	0.72073	-0.42817	1.02388	-0.4772	0.96719	1.29137
53	354	1.66156	1.71499	2.01555	1.78857	1.90035	0.72073	0.7043	1.02388	1.79963	0.96719	0.19008
54	413	0.50417	0.63523	-0.26208	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.04304	1.29137
55	123	0.50417	-0.44454	-0.26208	-0.54713	0.77616	1.78149	0.7043	1.02388	0.66122	0.96719	0.19008
56	485	0.50417	0.63523	0.87673	-0.54713	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	-0.9112
57	236	-0.65321	1.71499	-0.26208	0.62072	0.77616	-0.34002	-0.42817	-0.05622	-0.4772	0.96719	0.19008
58	335	0.50417	0.63523	-0.26208	0.62072	0.77616	-0.34002	0.7043	-0.05622	0.66122	0.04304	-0.9112
59	432	-0.65321	0.63523	-0.26208	0.62072	0.77616	0.72073	-0.42817	1.02388	-0.4772	0.96719	1.29137
60	272	0.50417	-0.44454	-0.26208	-0.54713	-1.47223	0.72073	0.7043	-0.05622	-0.4772	0.96719	-0.9112
61	179	-0.65321	-0.44454	-1.4009	-0.54713	-0.34804	-1.40078	-0.42817	-0.05622	-0.4772	0.96719	0.19008
62	357	-0.65321	0.63523	2.01555	0.62072	-0.34804	0.72073	1.83677	-0.05622	0.66122	1.89133	0.19008
63	334	0.50417	0.63523	-0.26208	0.62072	0.77616	-1.40078	-0.42817	1.02388	0.66122	0.96719	0.19008
64	261	-0.65321	-0.44454	-0.26208	0.62072	-0.34804	0.72073	0.7043	-0.05622	0.66122	0.96719	0.19008
65	285	-0.65321	0.63523	0.87673	0.62072	-0.34804	-1.40078	-0.42817	-0.05622	0.66122	-0.8811	0.19008
66	443	-1.81059	-2.60407	-1.4009	-0.54713	-0.34804	-2.46154	-0.42817	-1.13633	-1.61562	-0.8811	1.29137
67	601	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	0.72073	1.83677	1.02388	-0.4772	0.04304	-0.9112
68	540	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	-0.42817	1.02388	0.66122	0.04304	0.19008
69	436	0.50417	-0.44454	-1.4009	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	-0.4772	0.96719	0.19008
70	555	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	-1.13633	-0.4772	0.04304	1.29137
71	212	0.50417	0.63523	0.87673	-0.54713	-1.47223	-0.34002	0.7043	1.02388	0.66122	0.04304	0.19008
72	268	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-1.56063	-0.05622	-1.61562	-0.8811	0.19008
73	531	-0.65321	-2.60407	-1.4009	-1.71498	-2.59643	-0.34002	-1.56063	-2.21643	-1.61562	-1.80525	-0.9112

74	50	-0.65321	-0.44454	0.87673	0.62072	0.77616	0.72073	-1.56063	-0.05622	0.66122	0.96719	-0.9112
75	258	-0.65321	0.63523	0.87673	-0.54713	-1.47223	-0.34002	0.7043	-1.13633	-1.61562	-0.8811	1.29137
76	32	-0.65321	-1.5243	-1.4009	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	0.66122	-0.8811	-0.9112
77	414	0.50417	-0.44454	-2.53972	-1.71498	-2.59643	-0.34002	-1.56063	-1.13633	-1.61562	-1.80525	1.29137
78	337	-0.65321	0.63523	-0.26208	-0.54713	0.77616	0.72073	0.7043	-0.05622	-0.4772	0.96719	1.29137
79	730	-1.81059	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-0.42817	-1.13633	-1.61562	-0.8811	2.39265
80	12	-0.65321	-1.5243	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.96719	0.19008
81	146	0.50417	0.63523	-0.26208	-0.54713	-0.34804	0.72073	0.7043	2.10398	1.79963	1.89133	-0.9112
82	135	0.50417	1.71499	0.87673	0.62072	-0.34804	-0.34002	0.7043	1.02388	-0.4772	-1.80525	1.29137
83	165	0.50417	0.63523	0.87673	0.62072	-0.34804	-0.34002	-0.42817	-1.13633	-0.4772	-0.8811	1.29137
84	260	-0.65321	-0.44454	-0.26208	-1.71498	-0.34804	-1.40078	-0.42817	-0.05622	-0.4772	0.04304	-0.9112
85	522	0.50417	0.63523	-0.26208	0.62072	0.77616	1.78149	0.7043	1.02388	0.66122	-0.8811	1.29137
86	31	-0.65321	0.63523	-0.26208	0.62072	-1.47223	-0.34002	0.7043	-1.13633	-0.4772	-0.8811	0.19008
87	153	0.50417	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-1.56063	-1.13633	-0.4772	0.04304	1.29137
88	532	-1.81059	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-1.56063	-1.13633	-1.61562	-0.8811	2.39265
89	706	-0.65321	-0.44454	-0.26208	-0.54713	0.77616	-0.34002	-0.42817	-1.13633	0.66122	-0.8811	0.19008
90	427	-0.65321	-1.5243	-1.4009	0.62072	-1.47223	-1.40078	-0.42817	-1.13633	0.66122	-0.8811	0.19008
91	336	0.50417	-2.60407	-2.53972	-1.71498	0.77616	0.72073	0.7043	-2.21643	0.66122	0.04304	-0.9112
92	497	0.50417	-0.44454	0.87673	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	-0.8811	-0.9112
93	592	0.50417	0.63523	0.87673	1.78857	0.77616	1.78149	-0.42817	-0.05622	-0.4772	0.96719	-0.9112
94	484	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
95	161	-1.81059	-1.5243	-1.4009	0.62072	-2.59643	-2.46154	-2.6931	-1.13633	-1.61562	0.96719	-0.9112
96	221	0.50417	-0.44454	0.87673	-0.54713	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
97	717	-1.81059	-1.5243	-1.4009	-0.54713	-1.47223	-1.40078	-1.56063	-1.13633	-1.61562	-0.8811	1.29137
98	650	-0.65321	1.71499	-0.26208	-0.54713	1.90035	0.72073	1.83677	-0.05622	0.66122	0.04304	0.19008
99	423	0.50417	1.71499	-0.26208	1.78857	0.77616	1.78149	-0.42817	1.02388	1.79963	0.96719	0.19008
100	209	-0.65321	-0.44454	0.87673	-1.71498	0.77616	-1.40078	-0.42817	1.02388	-1.61562	-1.80525	1.29137
101	275	0.50417	-0.44454	-0.26208	-1.71498	-0.34804	-1.40078	0.7043	-1.13633	-0.4772	1.89133	2.39265
102	551	1.66156	0.63523	0.87673	0.62072	0.77616	-0.34002	-0.42817	-0.05622	-0.4772	-0.8811	-0.9112
103	159	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-1.40078	-1.56063	-1.13633	-1.61562	-1.80525	-0.9112
104	583	-1.81059	-0.44454	-1.4009	-1.71498	-1.47223	0.72073	0.7043	-0.05622	-0.4772	0.04304	-0.9112
105	97	0.50417	0.63523	0.87673	-0.54713	-0.34804	0.72073	-0.42817	-0.05622	1.79963	0.96719	0.19008
106	353	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-2.21643	-0.4772	-1.80525	-0.9112
107	587	-1.81059	-1.5243	-1.4009	-0.54713	-1.47223	-1.40078	-0.42817	-1.13633	-0.4772	0.04304	-0.9112
108	631	1.66156	0.63523	0.87673	-2.88283	-1.47223	-0.34002	1.83677	1.02388	-1.61562	0.04304	1.29137
109	231	-1.81059	-0.44454	-0.26208	1.78857	-1.47223	-0.34002	-0.42817	-1.13633	0.66122	-0.8811	2.39265
110	579	-0.65321	-1.5243	-1.4009	-1.71498	-0.34804	1.78149	-1.56063	-0.05622	-0.4772	-1.80525	-0.9112
111	404	0.50417	-1.5243	-0.26208	-1.71498	-0.34804	-1.40078	-0.42817	-0.05622	-0.4772	-0.8811	-0.9112
112	237	0.50417	-0.44454	-0.26208	0.62072	-0.34804	-1.40078	0.7043	-0.05622	0.66122	-0.8811	-0.9112
113	590	-0.65321	0.63523	-0.26208	0.62072	0.77616	-0.34002	-0.42817	-0.05622	0.66122	0.04304	0.19008
114	183	1.66156	0.63523	2.01555	0.62072	0.77616	1.78149	0.7043	1.02388	-0.4772	0.96719	0.19008
115	457	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
116	102	0.50417	0.63523	0.87673	0.62072	-0.34804	-0.34002	0.7043	-0.05622	0.66122	-0.8811	0.19008
117	388	-1.81059	-0.44454	-1.4009	-0.54713	-0.34804	-0.34002	-1.56063	-1.13633	-1.61562	-1.80525	1.29137
118	666	-0.65321	0.63523	0.87673	-0.54713	-0.34804	-0.34002	-0.42817	-1.13633	-0.4772	0.04304	0.19008
119	9	0.50417	-1.5243	-1.4009	0.62072	-1.47223	-0.34002	-0.42817	-1.13633	0.66122	0.96719	0.19008
120	662	0.50417	0.63523	-0.26208	-0.54713	0.77616	0.72073	-0.42817	-0.05622	-1.61562	-0.8811	-0.9112
121	300	-0.65321	0.63523	-0.26208	-0.54713	-0.34804	0.72073	0.7043	1.02388	1.79963	0.96719	-0.9112
122	296	0.50417	-0.44454	-0.26208	-0.54713	0.77616	0.72073	0.7043	-0.05622	0.66122	0.04304	0.19008
123	627	0.50417	0.63523	2.01555	0.62072	-0.34804	-0.34002	0.7043	-0.05622	0.66122	1.89133	0.19008
124	708	0.50417	1.71499	0.87673	0.62072	0.77616	0.72073	1.83677	1.02388	-0.4772	0.96719	0.19008
125	124	0.50417	1.71499	0.87673	1.78857	0.77616	-0.34002	0.7043	-0.05622	0.66122	0.04304	-0.9112
126	38	1.66156	1.71499	2.01555	0.62072	0.77616	0.72073	0.7043	2.10398	1.79963	1.89133	-0.9112
127	201	-0.65321	-0.44454	-1.4009	-0.54713	-1.47223	-0.34002	-0.42817	-1.13633	-0.4772	0.04304	-0.9112
128	171	0.50417	-1.5243	-1.4009	0.62072	-1.47223	-1.40078	-1.56063	-1.13633	0.66122	-0.8811	0.19008
129	251	-0.65321	0.63523	0.87673	0.62072	-0.34804	0.72073	0.7043	1.02388	0.66122	0.04304	0.19008
130	403	0.50417	0.63523	-0.26208	-0.54713	0.77616	0.72073	-1.56063	-0.05622	0.66122	0.04304	0.19008
131	674	0.50417	0.63523	0.87673	0.62072	-0.34804	-1.40078	-0.42817	-0.05622	0.66122	-0.8811	-0.9112
132	681	1.66156	0.63523	-0.26208	0.62072	0.77616	0.72073	-0.42817	1.02388	0.66122	0.96719	-0.9112
133	28	0.50417	0.63523	-0.26208	0.62072	0.77616	-0.34002	0.7043	1.02388	0.66122	0.96719	-0.9112
134	723	0.50417	0.63523	0.87673	-0.54713	0.77616	-0.34002	0.7043	1.02388	-0.4772	0.96719	0.19008
135	218	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	0.66122	0.04304	1.29137
136	149	-0.65321	-0.44454	-0.26208	0.62072	-0.34804	0.72073	-0.42817	-0.05622	0.66122	0.96719	0.19008
137	154	-0.65321	-0.44454	-0.26208	0.62072	-1.47223	0.72073	0.7043	-1.13633	-1.61562	-0.8811	0.19008
138	60	0.50417	0.63523	0.87673	-0.54713	0.77616	-0.34002	0.7043	1.02388	-0.4772	0.04304	1.29137
139	416	0.50417	-0.44454	0.87673	1.78857	-0.34804	1.78149	0.7043	2.10398	0.66122	1.89133	0.19008
140	5	1.66156	1.71499	2.01555	1.78857	1.90035	1.78149	1.83677	2.10398	1.79963	1.89133	-0.9112
141	210	0.50417	1.71499	0.87673	1.78857	0.77616	1.78149	1.83677	2.10398	0.66122	0.96719	0.19008
142	4	0.50417	-0.44454	-1.4009	0.62072	-0.34804	0.72073	0.7043	-0.05622	0.66122	-0.8811	0.19008
143	288	0.50417	0.63523	-0.26208	-1.71498	-1.47223	-2.46154	0.7043	-0.05622	1.79963	-1.80525	0.19008
144	175	-0.65321	0.63523	-0.26208	-0.54713	0.77616	-1.40078	-0.42817	1.02388	-0.4772	0.04304	1.29137
145	637	0.50417	1.71499	0.87673	1.78857	0.77616	-0.34002	-0.42817	-0.05622	-1.61562	-0.8811	3.49393
146	704	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	-0.42817	-0.05622	0.66122	0.04304	0.19008
147	582	0.50417	-0.44454	0.87673	0.62072	-0.34804	0.72073	0.7043	2.10398	1.79963	0.96719	1.29137
148	145	1.66156	0.63523	0.87673	-0.54713	-0.34804	0.72073	0.7043	2.10398	1.79963	1.89133	-0.9112
149	116	-0.65321	-0.44454	-0.26208	0.62072	0.77616	-0.34002	0.7043	-0.05622	-0.4772	0.96719	-0.9112
150	207	-1.81059	0.63523	-0.26208	-0.54713	-1.47223	-1.40078	0.7043	-0.05622	0.66122	0.96719	-0.9112
151	56	0.50417	0.63523	-0.26208	-0.54713	-0.34804	0.72073	0.7043	1.02388	0.66122	0.04304	0.19008
152	616	-0.65321	-0.44454	0.87673	0.62072	1.90035	0.72073	-0.42817	-0.05622	0.66122	-0.8811	-0.9112
153	379	-0.65321	-0.44454	-0.26208	0.62072	-0.34804	-0.34002	0.7043	-0.05622	-0.4772	0.04304	1.29137
154	156	0.50417	-0.44454	0.87673	0.62072	0.77616	0.72073	-0.42817	1.02388	-0.4772	0.96719	0.19008

155	27	0.50417	0.63523	-0.26208	0.62072	-0.34804	1.78149	0.7043	-1.13633	0.66122	-0.8811	-0.9112
156	350	-0.65321	-0.44454	0.87673	0.62072	-0.34804	-0.34002	0.7043	-0.05622	-0.4772	0.04304	-0.9112
157	499	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	-0.4772	0.04304	0.19008
158	644	0.50417	-0.44454	-0.26208	-0.54713	0.77616	-1.40078	-1.56063	-1.13633	-0.4772	0.04304	0.19008
159	397	0.50417	-1.5243	-1.4009	-1.71498	-1.47223	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
160	178	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
161	47	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
162	303	-0.65321	0.63523	-0.26208	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
163	341	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
164	699	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
165	621	0.50417	0.63523	-0.26208	0.62072	0.77616	0.72073	-0.42817	1.02388	-0.4772	0.96719	0.19008
166	81	0.50417	-0.44454	0.87673	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.04304	0.19008
167	410	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-1.56063	-1.13633	0.66122	-0.8811	-0.9112
168	226	-0.65321	-0.44454	-1.4009	-1.71498	-0.34804	-1.40078	-0.42817	-0.05622	-1.61562	-0.8811	-0.9112
169	711	0.50417	-0.44454	-0.26208	0.62072	-0.34804	-0.34002	0.7043	1.02388	0.66122	0.04304	0.19008
170	364	-0.65321	0.63523	0.87673	0.62072	1.90035	1.78149	0.7043	1.02388	0.66122	0.96719	-0.9112
171	169	-1.81059	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-1.56063	-1.13633	-1.61562	-0.8811	2.39265
172	534	0.50417	0.63523	0.87673	-0.54713	-1.47223	0.72073	-0.42817	-0.05622	0.66122	0.04304	1.29137
173	141	0.50417	0.63523	2.01555	1.78857	0.77616	0.72073	1.83677	1.02388	-0.4772	0.96719	0.19008
174	455	1.66156	1.71499	0.87673	1.78857	0.77616	1.78149	0.7043	1.02388	1.79963	1.89133	-0.9112
175	41	1.66156	0.63523	-0.26208	1.78857	1.90035	0.72073	0.7043	1.02388	-0.4772	-0.8811	-0.9112
176	277	0.50417	0.63523	-0.26208	0.62072	0.77616	-1.40078	-0.42817	-1.13633	-1.61562	-0.8811	0.19008
177	656	-0.65321	-0.44454	-0.26208	-2.88283	-2.59643	-1.40078	-1.56063	-1.13633	-2.75403	-0.8811	2.39265
178	466	-1.81059	0.63523	-0.26208	-0.54713	0.77616	0.72073	0.7043	-1.13633	0.66122	0.96719	-0.9112
179	2	-1.81059	-0.44454	-2.53972	-2.88283	-2.59643	-1.40078	-0.42817	-2.21643	-1.61562	-1.80525	-0.9112
180	73	-1.81059	-1.5243	-2.53972	-1.71498	-0.34804	-1.40078	-1.56063	-0.05622	-1.61562	-0.8811	1.29137
181	199	-1.81059	-1.5243	0.87673	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
182	53	-0.65321	0.63523	0.87673	0.62072	0.77616	0.72073	-0.42817	-1.13633	-1.61562	0.04304	2.39265
183	557	-1.81059	-1.5243	-1.4009	-0.54713	-0.34804	-0.34002	-0.42817	-1.13633	-0.4772	0.04304	-0.9112
184	391	-1.81059	-1.5243	-1.4009	0.62072	-1.47223	-0.34002	-1.56063	-0.05622	-0.4772	-0.8811	1.29137
185	61	-0.65321	0.63523	-1.4009	-1.71498	-1.47223	-2.46154	-2.6931	-1.13633	0.66122	-1.80525	-0.9112
186	243	0.50417	-0.44454	0.87673	-1.71498	0.77616	0.72073	-1.56063	1.02388	0.66122	0.04304	-0.9112
187	299	-0.65321	-1.5243	0.87673	-0.54713	-0.34804	0.72073	-0.42817	-0.05622	-1.61562	-0.8811	0.19008
188	29	-0.65321	0.63523	-1.4009	0.62072	-0.34804	-0.34002	-0.42817	-1.13633	-1.61562	-0.8811	-0.9112
189	198	-0.65321	-0.44454	-0.26208	0.62072	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	0.19008
190	542	0.50417	-0.44454	-0.26208	-0.54713	0.77616	-0.34002	0.7043	-0.05622	-0.4772	-0.8811	1.29137
191	589	0.50417	-0.44454	0.87673	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.96719	0.19008
192	415	-0.65321	-0.44454	-0.26208	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
193	246	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
194	259	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	1.29137
195	366	-0.65321	-1.5243	0.87673	-0.54713	-1.47223	0.72073	-0.42817	-1.13633	0.66122	-0.8811	0.19008
196	395	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-1.40078	-1.56063	-0.05622	-1.61562	0.04304	-0.9112
197	594	-0.65321	-0.44454	-0.26208	-1.71498	-0.34804	1.78149	-1.56063	-1.13633	-0.4772	-0.8811	0.19008
198	80	-0.65321	0.63523	0.87673	-0.54713	0.77616	0.72073	0.7043	1.02388	-0.4772	0.04304	1.29137
199	7	0.50417	0.63523	-0.26208	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.96719	1.29137
200	238	-0.65321	-0.44454	-1.4009	-0.54713	0.77616	-0.34002	0.7043	-0.05622	0.66122	-0.8811	-0.9112
201	525	0.50417	-0.44454	0.87673	-0.54713	0.77616	0.72073	0.7043	-0.05622	0.66122	0.96719	1.29137
202	716	-0.65321	0.63523	2.01555	-0.54713	0.77616	-0.34002	0.7043	-0.05622	-0.4772	-0.8811	0.19008
203	518	-1.81059	-0.44454	-1.4009	-1.71498	0.77616	-1.40078	-1.56063	-1.13633	-0.4772	-0.8811	-0.9112
204	132	-0.65321	-0.44454	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	-0.9112
205	264	-0.65321	-0.44454	-0.26208	-1.71498	-1.47223	-1.40078	0.7043	-0.05622	-0.4772	0.96719	0.19008
206	319	-0.65321	-0.44454	0.87673	0.62072	-0.34804	-0.34002	-0.42817	1.02388	-0.4772	0.04304	1.29137
207	8	-0.65321	-0.44454	0.87673	-0.54713	0.77616	-0.34002	0.7043	1.02388	1.79963	1.89133	0.19008
208	330	0.50417	0.63523	0.87673	0.62072	0.77616	-0.34002	-0.42817	-0.05622	0.66122	0.96719	0.19008
209	362	0.50417	-1.5243	-1.4009	0.62072	-0.34804	-0.34002	-0.42817	-1.13633	-0.4772	-0.8811	-0.9112
210	327	0.50417	-0.44454	0.87673	-0.54713	0.77616	0.72073	0.7043	-0.05622	0.66122	0.96719	0.19008
211	318	0.50417	0.63523	0.87673	0.62072	-0.34804	0.72073	0.7043	1.02388	0.66122	0.04304	0.19008
212	254	0.50417	0.63523	0.87673	0.62072	1.90035	1.78149	1.83677	-0.05622	0.66122	0.04304	1.29137
213	103	-0.65321	-0.44454	-1.4009	-1.71498	-1.47223	-1.40078	-0.42817	-1.13633	-1.61562	-0.8811	0.19008
214	118	0.50417	0.63523	-0.26208	-0.54713	0.77616	-0.34002	-0.42817	-0.05622	0.66122	0.96719	-0.9112
215	549	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-1.56063	-0.05622	-0.4772	-0.8811	0.19008
216	599	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	-0.42817	1.02388	-0.4772	0.04304	-0.9112
217	389	0.50417	-0.44454	-0.26208	0.62072	0.77616	-0.34002	1.83677	1.02388	-0.4772	0.04304	-0.9112
218	434	0.50417	0.63523	0.87673	1.78857	0.77616	1.78149	0.7043	-0.05622	-0.4772	0.04304	-0.9112
219	683	0.50417	-0.44454	-0.26208	0.62072	0.77616	-0.34002	-0.42817	-0.05622	0.66122	0.96719	-0.9112
220	619	1.66156	1.71499	-0.26208	1.78857	-0.34804	-1.40078	-1.56063	-0.05622	-1.61562	-0.8811	1.29137
221	117	1.66156	1.71499	0.87673	1.78857	-0.34804	0.72073	-0.42817	-0.05622	-0.4772	0.04304	1.29137
222	573	-1.81059	-1.5243	-1.4009	-1.71498	-0.34804	0.72073	-1.56063	-0.05622	-0.4772	-0.8811	-0.9112
223	510	-0.65321	-0.44454	-0.26208	-1.71498	-1.47223	-1.40078	-0.42817	-0.05622	-0.4772	-0.8811	0.19008
224	196	-0.65321	-0.44454	-1.4009	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	0.66122	-0.8811	-0.9112
225	668	-0.65321	-0.44454	-1.4009	-0.54713	-0.34804	-1.40078	-0.42817	-1.13633	-1.61562	-1.80525	-0.9112
226	79	0.50417	0.63523	-1.4009	-0.54713	-1.47223	-1.40078	-1.56063	-1.13633	-1.61562	-0.8811	2.39265
227	162	0.50417	-0.44454	-0.26208	0.62072	-0.34804	-0.34002	0.7043	-1.13633	-1.61562	-0.8811	-0.9112
228	580	0.50417	-0.44454	-0.26208	-0.54713	0.77616	0.72073	1.83677	1.02388	-0.4772	0.04304	2.39265
229	65	-0.65321	-1.5243	-0.26208	0.62072	-1.47223	0.72073	-0.42817	-0.05622	-0.4772	-1.80525	0.19008
230	533	0.50417	0.63523	0.87673	0.62072	1.90035	1.78149	1.83677	1.02388	0.66122	1.89133	0.19008
231	43	0.50417	-0.44454	-0.26208	0.62072	0.77616	0.72073	0.7043	-0.05622	-0.4772	0.04304	-0.9112
232	614	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	0.66122	0.04304	-0.9112
233	402	1.66156	0.63523	-0.26208	-1.71498	-1.47223	-1.40078	-1.56063	-1.13633	-0.4772	-0.8811	-0.9112
234	367	-0.65321	0.63523	-0.26208	-1.71498	-0.34804	0.72073	0.7043	-0.05622	-0.4772	0.04304	0.19008
235	138	-0.65321	0.63523	0.87673	0.62072	-1.47223	0.72073	-0.42817	-0.05622	0.66122	-1.80525	0.19008

236	470	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	1.02388	-0.4772	0.04304	1.29137
237	311	-0.65321	0.63523	0.87673	0.62072	-0.34804	0.72073	0.7043	-0.05622	0.66122	1.89133	-0.9112
238	152	-0.65321	-0.44454	-0.26208	0.62072	-1.47223	-0.34002	-1.56063	-0.05622	-0.4772	0.04304	1.29137
239	256	0.50417	1.71499	-0.26208	0.62072	0.77616	-0.34002	0.7043	1.02388	-0.4772	0.96719	-0.9112
240	565	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	0.04304	-0.9112
241	317	-1.81059	-0.44454	-1.4009	-0.54713	-1.47223	0.72073	1.83677	-0.05622	-1.61562	-1.80525	-0.9112
242	528	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	-0.05622	-0.4772	0.04304	0.19008
243	628	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	-0.4772	0.04304	-0.9112
244	688	-0.65321	0.63523	-0.26208	0.62072	0.77616	-0.34002	-2.6931	-1.13633	-0.4772	-0.8811	-0.9112
245	651	-1.81059	-0.44454	-0.26208	-1.71498	-1.47223	-1.40078	-0.42817	-1.13633	-0.4772	-0.8811	-0.9112
246	72	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	1.02388	0.66122	-0.8811	0.19008
247	511	0.50417	-0.44454	-0.26208	1.78857	0.77616	0.72073	1.83677	1.02388	1.79963	1.89133	1.29137
248	472	-0.65321	-0.44454	0.87673	0.62072	-0.34804	-0.34002	0.7043	-0.05622	0.66122	0.96719	0.19008
249	558	-0.65321	-0.44454	-1.4009	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	-1.80525	-0.9112
250	508	-0.65321	-0.44454	-2.53972	-0.54713	-0.34804	-0.34002	0.7043	-2.21643	0.66122	-1.80525	-0.9112
251	105	0.50417	0.63523	-0.26208	0.62072	-0.34804	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
252	635	0.50417	-0.44454	0.87673	-0.54713	0.77616	-0.34002	0.7043	-0.05622	0.66122	0.04304	0.19008
253	33	0.50417	-0.153	-0.26208	0.62072	-0.34804	0.72073	-0.42817	-0.05622	0.66122	0.96719	0.19008
254	168	-0.65321	-0.44454	-0.26208	-0.54713	0.77616	-0.34002	-0.42817	-1.13633	-0.4772	0.04304	-0.9112
255	345	0.50417	0.63523	0.87673	0.62072	0.77616	-0.34002	-0.42817	-0.05622	0.66122	0.96719	0.19008
256	1	0.50417	-0.44454	-0.26208	0.62072	-0.34804	-0.34002	0.7043	-0.05622	0.66122	-0.8811	-0.9112
257	155	-0.65321	0.63523	0.87673	-0.54713	0.77616	-0.34002	-0.42817	1.02388	0.66122	0.04304	1.29137
258	182	0.50417	-0.44454	0.87673	1.78857	1.90035	1.78149	0.7043	-0.05622	0.66122	0.96719	-0.9112
259	57	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-1.56063	-0.05622	-0.4772	0.04304	1.29137
260	630	0.50417	0.63523	0.87673	0.62072	0.77616	-0.34002	-1.56063	1.02388	-1.61562	-0.8811	0.19008
261	696	0.50417	0.63523	0.87673	0.62072	0.77616	-0.34002	0.7043	1.02388	-0.4772	0.96719	0.19008
262	181	1.66156	0.63523	0.87673	0.62072	-0.34804	0.72073	-0.42817	-1.13633	-0.4772	0.04304	0.19008
263	595	-0.65321	-0.44454	0.87673	0.62072	-0.34804	-0.34002	0.7043	-0.05622	0.66122	0.04304	-0.9112
264	478	1.66156	-0.44454	-0.26208	-0.54713	0.77616	0.72073	0.7043	1.02388	0.66122	0.04304	-0.9112
265	675	0.50417	-1.5243	-1.4009	0.62072	0.77616	0.72073	-0.42817	-1.13633	-0.4772	0.04304	-0.9112
266	431	-0.65321	0.63523	-0.26208	0.62072	-0.34804	0.72073	-0.42817	1.02388	0.66122	0.96719	0.19008
267	709	0.50417	0.63523	-0.26208	1.78857	0.77616	-0.34002	0.7043	-0.05622	-0.4772	0.04304	0.19008
268	126	0.50417	-0.44454	-0.26208	0.62072	-0.34804	1.78149	-0.42817	1.02388	-0.4772	-0.8811	-0.9112
269	479	1.66156	-0.44454	-0.26208	0.62072	0.77616	-0.34002	-0.42817	-1.13633	-1.61562	-0.8811	-0.9112
270	640	1.66156	1.71499	0.87673	1.78857	-0.34804	0.72073	-1.56063	-0.05622	0.66122	-0.8811	-0.9112
271	648	0.50417	0.63523	2.01555	-0.54713	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	-0.9112
272	608	1.66156	0.63523	2.01555	0.62072	1.90035	1.78149	1.83677	2.10398	1.79963	1.89133	-0.9112
273	150	0.50417	1.71499	0.87673	0.62072	-1.47223	0.72073	-0.42817	-1.13633	-0.4772	0.04304	-0.9112
274	671	1.66156	0.63523	0.87673	0.62072	-0.34804	0.72073	0.7043	-0.05622	-0.4772	0.96719	-0.9112
275	502	-0.65321	-0.44454	-0.26208	-0.54713	0.77616	0.72073	0.7043	-0.05622	0.66122	-0.8811	-0.9112
276	550	0.50417	-0.44454	-0.26208	-1.71498	0.77616	-0.34002	-1.56063	-0.05622	-0.4772	-1.80525	-0.9112
277	180	1.66156	-2.60407	-2.53972	-2.88283	-2.59643	-2.46154	-2.6931	-2.21643	-2.75403	-1.80525	-0.9112
278	331	-0.65321	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	-0.4772	0.04304	0.19008
279	351	-1.81059	-0.44454	-0.26208	-0.54713	-1.47223	0.72073	-0.42817	-1.13633	-1.61562	-0.8811	-0.9112
280	562	0.50417	0.63523	-0.26208	-1.71498	0.77616	-0.34002	0.7043	-0.05622	0.66122	0.04304	-0.9112
281	685	0.50417	-1.5243	-1.4009	-1.71498	-1.47223	-1.40078	-0.42817	-0.05622	-0.4772	0.04304	1.29137
282	349	0.50417	-1.5243	-1.4009	-0.54713	-1.47223	0.72073	0.7043	-2.21643	0.66122	-0.8811	-0.9112
283	607	0.50417	-1.5243	-1.4009	0.62072	-1.47223	-1.40078	0.7043	-1.13633	0.66122	-1.80525	-0.9112
284	333	-1.81059	0.63523	-1.4009	-0.54713	-0.34804	-1.40078	0.7043	-0.05622	0.66122	-0.8811	0.19008
285	342	-0.65321	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.04304	0.19008
286	297	0.50417	-1.5243	-1.4009	-1.71498	-0.34804	0.72073	0.7043	-2.21643	-0.4772	-0.8811	-0.9112
287	247	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	0.7043	-0.05622	0.66122	-0.8811	0.19008
288	425	0.50417	-0.44454	-0.26208	0.62072	-0.34804	0.72073	-0.42817	-0.05622	-0.4772	0.96719	1.29137
289	306	-1.81059	0.63523	0.87673	-0.54713	-1.47223	0.72073	-1.56063	1.02388	-0.4772	0.04304	1.29137
290	615	0.50417	0.63523	-0.26208	1.78857	0.77616	-0.34002	0.7043	-1.13633	0.66122	0.04304	-0.9112
291	194	-0.65321	0.63523	-1.4009	0.62072	0.77616	-1.40078	-1.56063	-0.05622	-1.61562	-0.8811	-0.9112
292	281	1.66156	1.71499	0.87673	0.62072	1.90035	0.72073	0.7043	-0.05622	0.66122	-0.8811	-0.9112
293	316	-1.81059	0.63523	0.87673	0.62072	-1.47223	0.72073	0.7043	1.02388	0.66122	-0.8811	0.19008
294	658	-2.96797	-1.5243	-2.53972	-0.54713	-2.59643	-2.46154	0.7043	-2.21643	-0.4772	-1.80525	-0.9112
295	646	0.50417	0.63523	2.01555	0.62072	-0.34804	0.72073	0.7043	1.02388	-0.4772	-0.8811	-0.9112
296	475	0.50417	0.63523	0.87673	-0.54713	-0.34804	0.72073	-1.56063	-0.05622	0.66122	0.04304	-0.9112
297	14	-1.81059	-1.5243	-1.4009	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	-0.8811	0.19008
298	253	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	1.83677	1.02388	0.66122	0.96719	0.19008
299	649	1.66156	0.63523	0.87673	1.78857	0.77616	-1.40078	-0.42817	-0.05622	-0.4772	-0.8811	0.19008
300	93	1.66156	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	0.19008
301	408	0.50417	0.63523	0.87673	0.62072	-0.34804	0.72073	0.7043	-0.05622	-0.4772	0.04304	0.19008
302	332	1.66156	-0.44454	-0.26208	-0.54713	0.77616	1.78149	1.83677	2.10398	0.66122	0.04304	-0.9112
303	358	0.50417	0.63523	-0.26208	0.62072	0.77616	0.72073	-1.56063	-1.13633	-0.4772	-0.8811	-0.9112
304	59	0.50417	0.63523	0.87673	1.78857	1.90035	1.78149	0.7043	1.02388	1.79963	1.89133	-0.9112
305	655	0.50417	0.63523	0.87673	0.62072	0.77616	-1.40078	-1.56063	-1.13633	0.66122	-0.8811	-0.9112
306	524	-1.81059	-1.5243	0.87673	0.62072	-0.34804	-1.40078	1.83677	1.02388	1.79963	0.96719	-0.9112
307	633	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	0.66122	0.96719	0.19008
308	428	-0.65321	0.63523	-0.26208	-0.54713	-0.34804	-1.40078	-0.42817	-0.05622	-1.61562	0.04304	-0.9112
309	322	1.66156	1.71499	0.87673	1.78857	0.77616	0.72073	-0.42817	1.02388	1.79963	0.96719	-0.9112
310	620	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	0.66122	0.96719	0.19008
311	568	0.50417	1.71499	0.87673	0.62072	0.77616	1.78149	1.83677	1.02388	1.79963	-0.8811	-0.9112
312	140	-0.65321	-0.44454	0.87673	0.62072	1.90035	0.72073	1.83677	2.10398	0.66122	0.04304	0.19008
313	629	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	0.72073	-0.42817	-0.05622	-0.4772	0.96719	-0.9112
314	355	1.66156	1.71499	0.87673	0.62072	1.90035	1.78149	0.7043	1.02388	1.79963	1.89133	-0.9112
315	486	-0.65321	1.71499	2.01555	1.78857	0.77616	1.78149	1.83677	2.10398	1.79963	0.04304	-0.9112
316	591	1.66156	1.71499	2.01555	1.78857	1.90035	1.78149	1.83677	2.10398	1.79963	1.89133	-0.9112

317	85	-0.65321	-1.5243	-1.4009	0.62072	-1.47223	-1.40078	-0.42817	-1.13633	-1.61562	-1.80525	2.39265
318	23	-1.81059	-1.5243	-1.4009	-0.54713	-0.34804	-0.34002	-0.42817	-2.21643	-1.61562	-1.80525	-0.9112
319	624	0.50417	0.63523	-0.26208	0.62072	0.77616	0.72073	0.7043	-0.05622	-0.4772	-1.80525	-0.9112
320	20	-2.96797	0.63523	2.01555	0.62072	0.77616	1.78149	0.7043	2.10398	1.79963	0.96719	-0.9112
321	24	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-1.13633	-1.61562	-0.8811	2.39265
322	430	0.50417	0.63523	-0.26208	0.62072	-0.34804	0.72073	-0.42817	1.02388	0.66122	0.96719	1.29137
323	66	-0.65321	0.63523	-0.26208	-0.54713	0.77616	-0.34002	-0.42817	-0.05622	-1.61562	-0.8811	-0.9112
324	18	0.50417	-0.44454	-0.26208	-0.54713	-0.34804	0.72073	-0.42817	1.02388	0.66122	0.04304	-0.9112
325	710	-0.65321	1.71499	0.87673	0.62072	-0.34804	-0.34002	1.83677	-0.05622	0.66122	1.89133	0.19008
326	101	1.66156	1.71499	2.01555	-0.54713	-1.47223	-0.34002	0.7043	-0.05622	1.79963	0.96719	-0.9112
327	310	0.50417	1.71499	-0.26208	-0.54713	-0.34804	0.72073	1.83677	2.10398	1.79963	1.89133	-0.9112
328	544	0.50417	0.63523	0.87673	0.62072	0.77616	-0.34002	-0.42817	-0.05622	-0.4772	0.96719	0.19008
329	68	0.50417	0.63523	0.87673	0.62072	1.90035	0.72073	-0.42817	-0.05622	-0.4772	0.96719	0.19008
330	728	1.66156	-0.44454	2.01555	0.62072	0.77616	0.72073	0.7043	-1.13633	0.66122	0.04304	-0.9112
331	206	1.66156	0.63523	2.01555	0.62072	0.77616	0.72073	0.7043	2.10398	0.66122	0.96719	-0.9112
332	188	1.66156	1.71499	0.87673	0.62072	0.77616	1.78149	1.83677	2.10398	1.79963	1.89133	-0.9112
333	546	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.04304	-0.9112
334	626	1.66156	0.63523	-0.26208	-0.54713	0.77616	0.72073	0.7043	-0.05622	1.79963	0.96719	0.19008
335	523	0.50417	-0.44454	0.87673	0.62072	1.90035	1.78149	-0.42817	1.02388	0.66122	0.96719	0.19008
336	189	0.50417	-0.44454	0.87673	1.78857	0.77616	0.72073	1.83677	1.02388	0.66122	1.89133	0.19008
337	88	0.50417	1.71499	0.87673	1.78857	0.77616	0.72073	0.7043	1.02388	0.66122	1.89133	1.29137
338	464	0.50417	0.63523	0.87673	0.62072	0.77616	0.72073	1.83677	-1.13633	0.66122	-0.8811	-0.9112
339	622	0.50417	0.63523	-0.26208	0.62072	0.77616	0.72073	0.7043	1.02388	0.66122	0.96719	-0.9112
340	578	0.50417	1.71499	0.87673	0.62072	1.90035	-0.34002	0.7043	-0.05622	0.66122	0.96719	-0.9112
341	482	1.66156	-0.44454	0.87673	1.78857	-0.34804	-0.34002	0.7043	1.02388	1.79963	0.04304	-0.9112
342	312	0.50417	0.63523	2.01555	0.62072	0.77616	-0.34002	-0.42817	1.02388	1.79963	1.89133	-0.9112
343	605	1.66156	1.71499	0.87673	1.78857	1.90035	0.72073	-0.42817	-0.05622	0.66122	-0.8811	-0.9112
344	604	0.50417	1.71499	0.87673	1.78857	1.90035	1.78149	-0.42817	1.02388	1.79963	0.04304	-0.9112
345	612	0.50417	1.71499	0.87673	0.62072	-0.34804	0.72073	1.83677	-0.05622	0.66122	0.96719	0.19008
346	611	-0.65321	-2.60407	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-1.61562	1.89133	-0.9112
347	84	-1.81059	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	-0.4772	-0.8811	1.29137
348	387	0.50417	-1.5243	-0.26208	-1.71498	-0.34804	0.72073	-0.42817	-1.13633	0.66122	-1.80525	-0.9112
349	380	0.50417	0.63523	-0.26208	-0.54713	-0.34804	-0.34002	-1.56063	-0.05622	-0.4772	-0.8811	1.29137
350	693	0.50417	-1.5243	-0.26208	-0.54713	-0.34804	-0.34002	-0.42817	-0.05622	0.66122	1.89133	-0.9112
351	370	-0.65321	0.63523	-0.26208	0.62072	0.77616	-0.34002	0.7043	-0.05622	0.66122	0.04304	-0.9112
352	686	0.50417	-0.44454	-0.26208	0.62072	0.77616	1.78149	0.7043	-1.13633	-0.4772	0.96719	0.19008
353	669	0.50417	0.63523	-0.26208	-0.54713	0.77616	-0.34002	0.7043	-0.05622	-0.4772	-0.8811	-0.9112
354	248	0.50417	-0.44454	0.87673	-0.54713	0.77616	0.72073	0.7043	1.02388	-0.4772	0.96719	0.19008
355	21	0.50417	-0.44454	-0.26208	0.62072	0.77616	-0.34002	0.7043	-0.05622	0.66122	0.96719	0.19008
356	705	1.66156	1.71499	2.01555	0.62072	-0.34804	1.78149	0.7043	2.10398	1.79963	0.96719	-0.9112
357	98	0.50417	-1.5243	-0.26208	0.62072	0.77616	0.72073	0.7043	-0.05622	0.66122	0.96719	-0.9112
358	670	-0.65321	0.63523	-1.4009	-0.54713	1.90035	-1.40078	-0.42817	-2.21643	0.66122	0.96719	-0.9112
359	401	1.66156	1.71499	0.87673	0.62072	0.77616	-0.34002	0.7043	1.02388	0.66122	-0.8811	-0.9112
360	673	0.50417	0.63523	0.87673	-0.54713	0.77616	-1.40078	0.7043	-0.05622	-0.4772	-0.8811	-0.9112
361	115	-0.65321	-1.5243	-1.4009	-1.71498	-2.59643	-2.46154	-2.6931	-2.21643	-0.4772	0.04304	-0.9112
362	69	-1.81059	0.63523	-0.26208	-0.54713	0.77616	-1.40078	-0.42817	1.02388	0.66122	0.04304	0.19008
363	449	-2.96797	-1.5243	-0.26208	0.62072	0.77616	-1.40078	0.7043	2.10398	-2.75403	0.96719	2.39265
364	559	1.66156	-0.44454	-0.26208	1.78857	-1.47223	-1.40078	-1.56063	-0.05622	1.79963	0.96719	0.19008
365	279	-0.65321	0.63523	0.87673	0.62072	-0.34804	-0.34002	0.7043	-0.05622	0.66122	0.96719	-0.9112

Appendix 4.4

Normality assessment results (EFA Stage, N=344)

Figure A
Histograms of normality

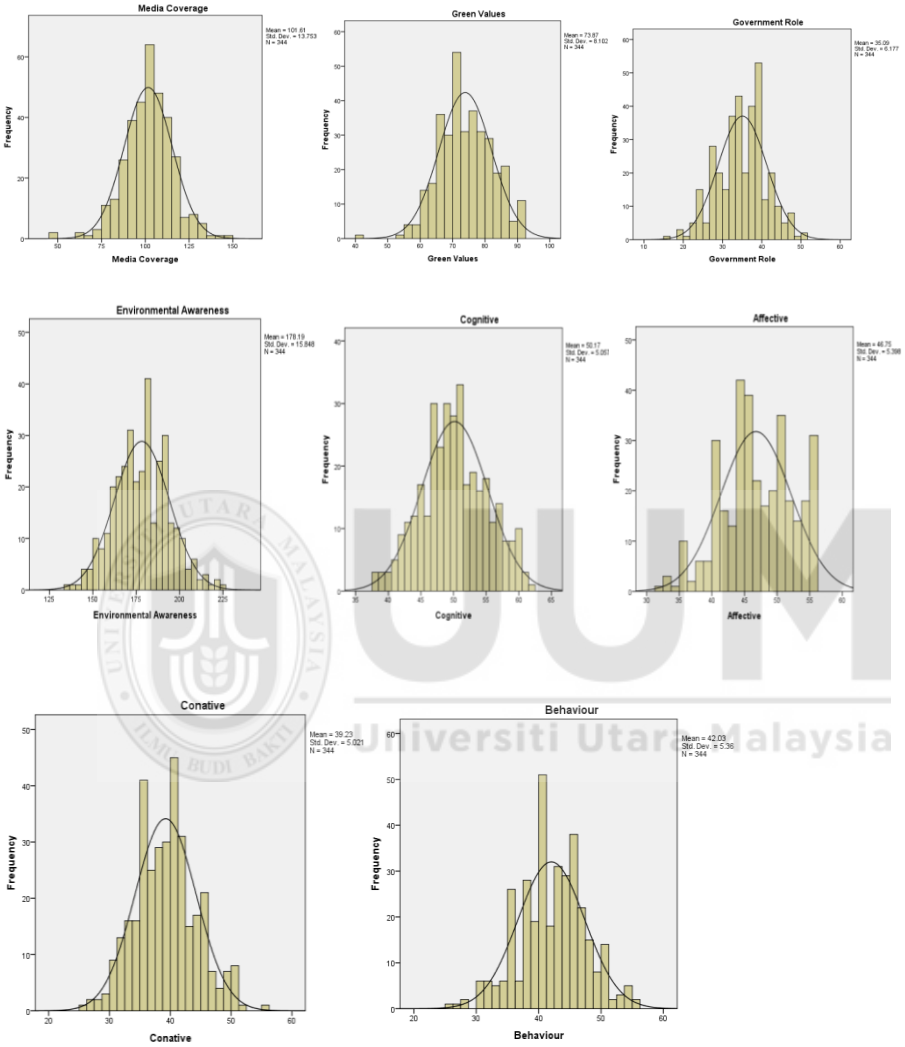
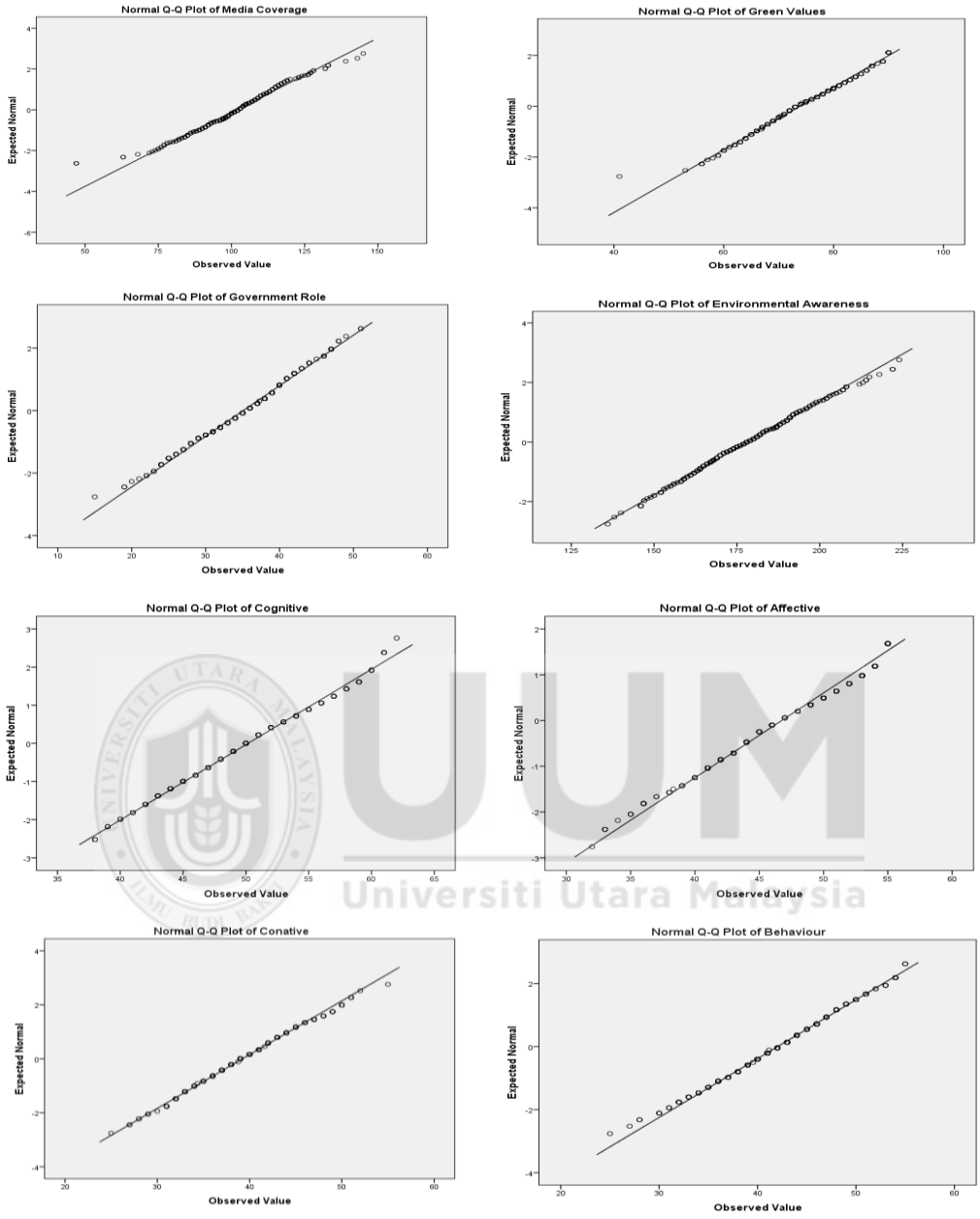
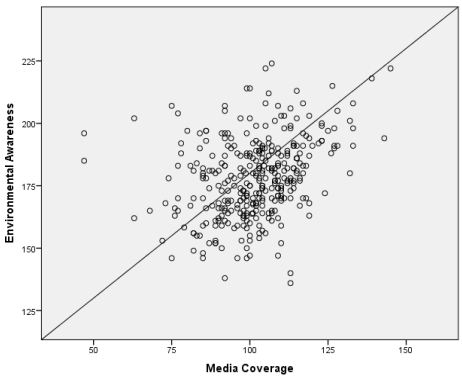


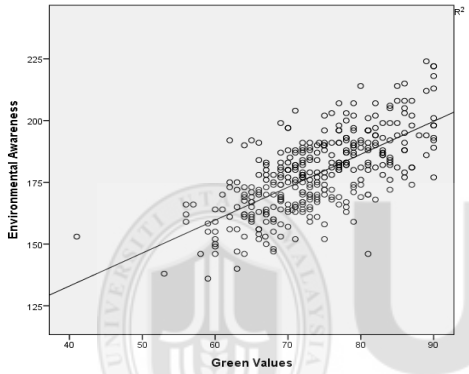
Figure B
Normal Q-Q plots

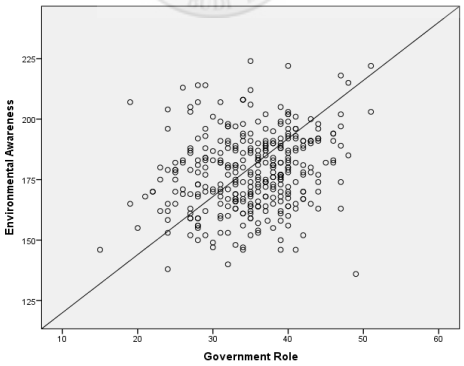


Appendix 4.5

Linearity assessment results (EFA stage, N=344)







Appendix 4.6

Outliers detection results (PLS stage, N=365)

Table A
Chi-square (X^2) = 154.3140

No	Case id	MAH
1	1	76.77817
2	3	101.2216
3	4	101.4177
4	5	79.97664
5	6	56.14899
6	8	117.3752
7	9	76.67768
8	11	62.98049
9	12	69.73748
10	13	40.29636
11	14	84.10826
12	15	65.84998
13	16	88.07443
14	21	96.48902
15	23	143.7948
16	24	88.05171
17	25	120.8576
18	27	96.69845
19	29	110.6993
20	31	119.1141
21	32	125.0235
22	33	105.8297
23	35	89.22621
24	37	73.46741
25	39	59.11623
26	41	110.1663
27	42	77.00822
28	44	120.3042
29	46	105.2758
30	48	62.78367
31	49	111.856
32	51	76.41533
33	53	136.7852
34	54	125.6832
35	55	50.20066
36	57	69.86612
37	58	66.60627

No	Case id	MAH
38	59	79.3832
39	61	179.1254
40	62	58.06234
41	65	149.8481
42	70	128.0449
43	72	93.26995
44	73	151.8846
45	77	189.39
46	79	88.31719
47	81	103.5221
48	85	142.0926
49	90	107.3554
50	93	79.94608
51	94	146.9265
52	95	184.415
53	96	123.9481
54	99	84.38151
55	101	130.446
56	108	50.87469
57	109	46.68812
58	110	71.79922
59	111	86.43223
60	112	96.19977
61	114	88.10043
62	116	102.7607
63	117	139.8247
64	118	112.7819
65	121	143.2425
66	122	86.35396
67	124	103.0107
68	125	128.9106
69	126	135.9154
70	130	84.71425
71	137	114.4918
72	140	145.258
73	141	101.079
74	142	126.8431
75	147	189.1324

No	case id	MAH
76	153	90.56668
77	155	71.71788
78	156	90.61393
79	160	82.58394
80	161	177.4079
81	163	89.51269
82	164	117.3066
83	166	79.965
84	167	92.92458
85	169	79.0704
86	170	156.7636
87	171	140.931
88	172	157.5035
89	174	63.10873
90	175	129.4248
91	177	110.8461
92	178	46.94863
93	179	129.2255
94	180	157.8827
95	183	98.18231
96	186	103.701
97	188	56.88333
98	194	113.3185
99	195	156.3837
100	198	98.56102
101	199	105.7701
102	200	54.60248
103	201	119.1246
104	206	87.07872
105	207	78.75473
106	208	82.94758
107	209	183.5936
108	210	94.26309
109	211	86.73421
110	212	125.5532
111	214	94.373
112	216	69.09975
113	217	69.09975
114	220	111.0814
115	221	101.209
116	222	131.2184
117	223	154.4234
118	225	74.04977

No.	case id	MAH
119	227	151.7045
120	230	152.9652
121	231	124.079
122	233	123.5283
123	237	69.00783
124	239	113.3268
125	241	131.5727
126	244	51.95153
127	247	46.62021
128	248	83.49961
129	251	101.2811
130	252	107.7799
131	254	109.191
132	257	36.00339
133	259	46.67497
134	262	75.22142
135	264	80.20177
136	266	113.3576
137	267	96.94622
138	268	134.1147
139	271	116.6158
140	275	171.1826
141	278	127.273
142	279	102.2939
143	280	104.0361
144	282	108.2434
145	283	169.2345
146	285	104.0899
147	288	187.9043
148	294	74.11063
149	295	94.73172
150	296	58.97561
151	297	140.3808
152	298	105.5169
153	301	164.7466
154	304	62.45157
155	305	95.15352
156	306	188.7044
157	310	103.6532
158	311	131.2432
159	312	103.2072
160	313	84.82953
161	314	102.0076

No.	case id	MAH
262	540	61.94053
263	541	92.93053
264	542	81.538
265	546	57.35601
266	547	88.57477
267	548	106.7205
268	550	136.2077
269	552	65.16293
270	553	103.9216
271	555	95.77826
272	556	131.1665
273	557	84.9914
274	559	182.6903
275	560	106.1279
276	561	102.1395
277	562	157.0167
278	563	110.0519
279	565	94.2562
280	573	74.30276
281	574	84.53473
282	578	136.8955
283	579	135.3432
284	582	142.0965
285	583	90.83225
286	586	80.72343
287	588	127.8542
288	590	81.29122
289	591	27.62577
290	595	64.35804
291	600	108.542
292	601	120.8456
293	603	54.8604
294	604	94.45757
295	605	69.60223
296	610	46.59003
297	611	128.4307
298	612	123.9593
299	616	79.07638
300	618	87.18552
301	621	79.20922
302	622	96.26117
303	624	77.02104
304	626	137.9475
305	627	100.5159
306	628	45.53423
307	631	197.3911
308	632	127.0913
309	633	113.8321

No	case id	MAH
310	634	39.66133
311	638	76.57703
312	640	160.7151
313	643	83.14882
314	645	85.30833
315	646	120.8812
316	648	90.89723
317	653	106.7502
318	655	128.6255
319	657	84.98014
320	658	150.7002
321	659	45.08991
322	663	108.4286
323	665	96.33701
324	667	94.12575
325	668	115.3856
326	670	191.3932
327	671	98.01458
328	672	109.4327
329	676	120.4918
330	677	78.21576
331	678	101.5853
332	679	129.6032
333	680	99.70907
334	681	83.07833
335	683	101.2373
336	684	78.8045
337	685	118.8305
338	687	23.88025
339	690	47.32124
340	691	106.2471
341	693	96.72868
342	694	62.96819
343	696	73.93776
344	697	147.0617
345	702	93.55706
346	704	47.48709
347	705	128.7701
348	706	106.8354
349	709	89.46642
350	710	158.5877
351	712	136.9812
352	713	75.24146
353	715	67.89424
354	716	140.9981
355	717	108.7044
356	718	110.0243
357	720	115.289
358	721	129.6439
359	722	138.837
360	723	86.40742
361	725	70.38539
362	727	137.4444
363	728	100.9585
364	729	95.63654
365	730	132.1465

Table B
Univariate outliers detection for government role using Z-score

No	Case id	ZGov1	ZGov2	ZGov3	ZGov4	ZGov5	ZGov6	ZGov7	ZGov8	ZGov9	ZGov10	ZRcov11
1	1	0.54713	-0.36373	-0.24324	0.61558	-0.38201	-0.31409	0.75926	-0.0573	0.6389	-0.92297	-0.95815
2	3	0.54713	-0.36373	-0.24324	-0.50785	1.86694	0.71872	0.75926	0.98836	0.6389	-0.00503	0.2115
3	4	0.54713	-0.36373	-1.31291	0.61558	-0.38201	0.71872	0.75926	-0.0573	0.6389	-0.92297	0.2115
4	5	1.71498	1.75587	1.89611	1.739	1.86694	1.75152	1.87673	2.03403	1.74938	1.83085	-0.95815
5	6	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
6	8	-0.62072	-0.36373	0.82643	-0.50785	0.74246	-0.31409	0.75926	0.98836	1.74938	1.83085	0.2115
7	9	0.54713	-1.42353	-1.31291	0.61558	-1.50649	-0.31409	-0.3582	-1.10296	0.6389	0.91291	0.2115
8	11	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.92297	2.5508
9	12	-0.62072	-1.42353	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	0.91291	0.2115
10	13	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
11	14	-1.78857	-1.42353	-1.31291	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.92297	0.2115
12	15	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	0.2115
13	16	-0.62072	-0.36373	-0.24324	0.61558	0.74246	0.71872	0.75926	-0.0573	-0.47157	-0.00503	-0.95815
14	21	0.54713	-0.36373	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	0.6389	0.91291	0.2115
15	23	-1.78857	-1.42353	-1.31291	-0.50785	-0.38201	-0.31409	-0.3582	-2.14862	-1.58205	-1.84091	-0.95815
16	24	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-1.10296	-1.58205	-0.92297	2.5508
17	25	0.54713	0.69607	-1.31291	-0.50785	-0.38201	-1.34689	-0.3582	-1.10296	-0.47157	-0.00503	-0.95815
18	27	0.54713	0.69607	-0.24324	0.61558	-0.38201	1.75152	0.75926	-1.10296	0.6389	-0.92297	-0.95815
19	29	-0.62072	0.69607	-1.31291	0.61558	-0.38201	-0.31409	-0.3582	-1.10296	-1.58205	-0.92297	-0.95815
20	31	-0.62072	0.69607	-0.24324	0.61558	-1.50649	-0.31409	0.75926	-1.10296	-0.47157	-0.92297	0.2115
21	32	-0.62072	-1.42353	-1.31291	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	-0.92297	-0.95815
22	33	0.54713	-0.07758	-0.24324	0.61558	-0.38201	0.71872	-0.3582	-0.0573	0.6389	0.91291	0.2115
23	35	0.54713	-0.36373	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	-0.47157	-0.00503	-0.95815
24	37	0.54713	-1.42353	0.82643	-1.63128	-1.50649	0.71872	0.75926	0.98836	1.74938	1.83085	-0.95815
25	39	0.54713	-1.42353	-0.24324	0.61558	0.74246	-0.31409	0.75926	-1.10296	-0.47157	-0.00503	0.2115
26	41	1.71498	0.69607	-0.24324	1.739	1.86694	0.71872	0.75926	0.98836	-0.47157	-0.92297	-0.95815
27	42	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	1.74938	0.91291	0.2115
28	44	0.54713	-0.36373	0.82643	-0.50785	0.74246	-0.31409	0.75926	-0.0573	0.6389	-0.00503	0.2115
29	46	0.54713	-0.36373	-0.24324	-0.50785	0.74246	0.71872	0.75926	-0.0573	-0.47157	-0.00503	0.2115
30	48	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
31	49	0.54713	-0.36373	0.82643	1.739	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	0.91291	-0.95815
32	51	0.54713	-0.36373	-0.24324	-0.50785	0.74246	0.71872	0.75926	-0.0573	-0.47157	-0.00503	0.2115
33	53	-0.62072	0.69607	0.82643	0.61558	0.74246	0.71872	-0.3582	-1.10296	-1.58205	-0.00503	2.5508
34	54	1.71498	1.75587	-0.24324	-0.50785	1.86694	0.71872	1.87673	-0.0573	1.74938	0.91291	-0.95815
35	55	-1.78857	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	0.2115
36	57	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-1.47567	-0.0573	-0.47157	-0.00503	1.38115
37	58	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	-0.00503	-0.95815
38	59	0.54713	0.69607	0.82643	1.739	1.86694	1.75152	0.75926	0.98836	1.74938	1.83085	-0.95815
39	61	-0.62072	0.69607	-1.31291	-1.63128	-1.50649	-2.3797	-2.59313	-1.10296	0.6389	-1.84091	-0.95815

40	62	0.54713	0.69607	0.82643	0.61558	0.74246	1.75152	0.75926	0.98836	1.74938	0.91291	0.2115
41	65	-0.62072	-1.42353	-0.24324	0.61558	-1.50649	0.71872	-0.3582	-0.0573	-0.47157	-1.84091	0.2115
42	70	1.71498	-0.36373	0.82643	0.61558	1.86694	1.75152	0.75926	0.98836	0.6389	-0.00503	-0.95815
43	72	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	0.98836	0.6389	-0.92297	0.2115
44	73	-1.78857	-1.42353	-2.38259	-1.63128	-0.38201	-1.34689	-1.47567	-0.0573	-1.58205	-0.92297	1.38115
45	77	-1.78857	-0.36373	0.82643	-1.63128	-0.38201	0.71872	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
46	79	0.54713	0.69607	-1.31291	-0.50785	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	2.5508
47	81	0.54713	-0.36373	0.82643	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	0.2115
48	85	-0.62072	-1.42353	-1.31291	0.61558	-1.50649	-1.34689	-0.3582	-1.10296	-1.58205	-1.84091	2.5508
49	90	0.54713	0.69607	1.89611	0.61558	0.74246	0.71872	0.75926	0.98836	1.74938	0.91291	0.2115
50	93	1.71498	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
51	94	1.71498	0.69607	-0.24324	-0.50785	-0.38201	0.71872	0.75926	-0.0573	1.74938	1.83085	0.2115
52	95	-1.78857	-0.36373	-0.24324	-0.50785	0.74246	1.75152	-0.3582	-0.0573	0.6389	0.91291	0.2115
53	96	-0.62072	-0.36373	0.82643	-0.50785	0.74246	-0.31409	-1.47567	-1.10296	-0.47157	-0.92297	-0.95815
54	99	0.54713	0.69607	0.82643	0.61558	0.74246	1.75152	1.87673	0.98836	0.6389	1.83085	-0.95815
55	101	1.71498	1.75587	1.89611	-0.50785	-1.50649	-0.31409	0.75926	-0.0573	1.74938	0.91291	-0.95815
56	108	1.71498	1.75587	1.89611	1.739	1.86694	1.75152	1.87673	2.03403	1.74938	1.83085	-0.95815
57	109	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	0.2115
58	110	-0.62072	-0.36373	0.82643	0.61558	0.74246	-1.34689	-0.3582	0.98836	-0.47157	-0.00503	0.2115
59	111	-0.62072	-0.36373	0.82643	-0.50785	-0.38201	0.71872	-0.3582	-0.0573	0.6389	0.91291	0.2115
60	112	-0.62072	-0.36373	-0.24324	0.61558	-1.50649	-1.34689	-1.47567	-0.0573	-0.47157	-0.92297	0.2115
61	114	-1.78857	-0.36373	-1.31291	-0.50785	-0.38201	-1.34689	-0.3582	-0.0573	-0.47157	-0.92297	-0.95815
62	116	-0.62072	-0.36373	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	-0.47157	0.91291	-0.95815
63	117	1.71498	1.75587	0.82643	1.739	-0.38201	0.71872	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
64	118	0.54713	0.69607	-0.24324	-0.50785	0.74246	-0.31409	-0.3582	-0.0573	0.6389	0.91291	-0.95815
65	121	0.54713	-0.36373	-0.24324	0.61558	-0.38201	-1.34689	-1.47567	-0.0573	0.6389	-0.00503	-0.95815
66	122	-0.62072	-0.36373	-0.24324	0.61558	-0.38201	0.71872	0.75926	0.98836	-0.47157	-0.00503	-0.95815
67	124	0.54713	1.75587	0.82643	1.739	0.74246	-0.31409	0.75926	-0.0573	0.6389	-0.00503	-0.95815
68	125	-0.62072	-1.42353	-0.24324	1.739	1.86694	1.75152	-0.3582	-1.10296	0.6389	-0.92297	-0.95815
69	126	0.54713	-0.36373	-0.24324	0.61558	-0.38201	1.75152	-0.3582	0.98836	-0.47157	-0.92297	-0.95815
70	130	0.54713	-0.36373	0.82643	0.61558	0.74246	0.71872	0.75926	-0.0573	-0.47157	0.91291	0.2115
71	137	0.54713	0.69607	-0.24324	-1.63128	-0.38201	-1.34689	-0.3582	-1.10296	0.6389	-0.92297	1.38115
72	140	-0.62072	-0.36373	0.82643	0.61558	1.86694	0.71872	1.87673	2.03403	0.6389	-0.00503	0.2115
73	141	0.54713	0.69607	1.89611	1.739	0.74246	0.71872	1.87673	0.98836	-0.47157	0.91291	0.2115
74	142	-1.78857	-1.42353	-1.31291	-0.50785	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.00503	2.5508
75	147	-0.62072	-0.36373	0.82643	-0.50785	-0.38201	1.75152	-0.3582	-0.0573	-1.58205	-0.00503	1.38115
76	153	0.54713	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-0.47157	-0.00503	1.38115
77	155	-0.62072	0.69607	0.82643	-0.50785	0.74246	-0.31409	-0.3582	0.98836	0.6389	-0.00503	1.38115
78	156	0.54713	-0.36373	0.82643	0.61558	0.74246	0.71872	-0.3582	0.98836	-0.47157	0.91291	0.2115
79	160	0.54713	-0.36373	0.82643	0.61558	0.74246	1.75152	1.87673	0.98836	1.74938	0.91291	-0.95815
80	161	-1.78857	-1.42353	-1.31291	0.61558	-2.63096	-2.3797	-2.59313	-1.10296	-1.58205	0.91291	-0.95815
81	163	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	0.71872	-0.3582	-1.10296	-0.47157	-0.92297	0.2115
82	164	0.54713	1.75587	0.82643	1.739	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
83	166	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-1.34689	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
84	167	0.54713	1.75587	0.82643	0.61558	1.86694	1.75152	0.75926	0.98836	0.6389	-0.92297	-0.95815

85	169	-1.78857	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	2.5508
86	170	0.54713	-0.36373	-0.24324	-1.63128	0.74246	-0.31409	0.75926	-0.0573	-0.47157	0.91291	-0.95815
87	171	0.54713	-1.42353	-1.31291	0.61558	-1.50649	-1.34689	-1.47567	-1.10296	0.6389	-0.92297	0.2115
88	172	-1.78857	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	2.5508
89	174	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-1.10296	-0.47157	-0.92297	0.2115
90	175	-0.62072	0.69607	-0.24324	-0.50785	0.74246	-1.34689	-0.3582	0.98836	-0.47157	-0.00503	1.38115
91	177	0.54713	-0.36373	0.82643	0.61558	0.74246	1.75152	0.75926	0.98836	-0.47157	1.83085	-0.95815
92	178	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
93	179	-0.62072	-0.36373	-1.31291	-0.50785	-0.38201	-1.34689	-0.3582	-0.0573	-0.47157	0.91291	0.2115
94	180	1.71498	-2.48333	-2.38259	-2.7547	-2.63096	-2.3797	-2.59313	-2.14862	-2.69252	-1.84091	-0.95815
95	183	1.71498	0.69607	1.89611	0.61558	0.74246	1.75152	0.75926	0.98836	-0.47157	0.91291	0.2115
96	186	0.54713	-0.36373	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	0.98836	-0.47157	-0.92297	0.2115
97	188	1.71498	1.75587	0.82643	0.61558	0.74246	1.75152	1.87673	2.03403	1.74938	1.83085	-0.95815
98	194	-0.62072	0.69607	-1.31291	0.61558	0.74246	-1.34689	-1.47567	-0.0573	-1.58205	-0.92297	-0.95815
99	195	1.71498	-0.36373	-1.31291	-0.50785	0.74246	-0.31409	-1.47567	-2.14862	0.6389	-1.84091	-0.95815
100	198	-0.62072	-0.36373	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	0.2115
101	199	-1.78857	-1.42353	0.82643	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
102	200	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
103	201	-0.62072	-0.36373	-1.31291	-0.50785	-1.50649	-0.31409	-0.3582	-1.10296	-0.47157	-0.00503	-0.95815
104	206	1.71498	0.69607	1.89611	0.61558	0.74246	0.71872	0.75926	2.03403	0.6389	0.91291	-0.95815
105	207	-1.78857	0.69607	-0.24324	-0.50785	-1.50649	-1.34689	0.75926	-0.0573	0.6389	0.91291	-0.95815
106	208	0.54713	0.69607	0.82643	0.61558	0.74246	1.75152	0.75926	2.03403	0.6389	1.83085	0.2115
107	209	-0.62072	-0.36373	0.82643	-1.63128	0.74246	-1.34689	-0.3582	0.98836	-1.58205	-1.84091	1.38115
108	210	0.54713	1.75587	0.82643	1.739	0.74246	1.75152	1.87673	2.03403	0.6389	0.91291	0.2115
109	211	-0.62072	0.69607	-0.24324	0.61558	-0.38201	-1.34689	0.75926	-0.0573	0.6389	-0.00503	-0.95815
110	212	0.54713	0.69607	0.82643	-0.50785	-1.50649	-0.31409	0.75926	0.98836	0.6389	-0.00503	0.2115
111	214	-0.62072	0.69607	-0.24324	0.61558	-0.38201	0.71872	-0.3582	0.98836	-0.47157	0.91291	1.38115
112	216	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-1.34689	-1.47567	-0.0573	-0.47157	-0.92297	-0.95815
113	217	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-1.34689	-1.47567	-0.0573	-0.47157	-0.92297	-0.95815
114	220	-0.62072	-0.36373	-1.31291	-1.63128	-1.50649	-1.34689	-2.59313	-2.14862	0.6389	-0.92297	-0.95815
115	221	0.54713	-0.36373	0.82643	-0.50785	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
116	222	-1.78857	0.69607	0.82643	1.739	-1.50649	0.71872	0.75926	-0.0573	0.6389	-0.92297	1.38115
117	223	0.54713	1.75587	0.82643	1.739	0.74246	-0.31409	-1.47567	-0.0573	-1.58205	-1.84091	2.5508
118	225	-0.62072	-0.36373	-0.24324	-1.63128	-0.38201	-0.31409	-0.3582	-1.10296	-0.47157	-0.92297	0.2115
119	227	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-1.10296	-1.58205	-0.92297	-0.95815
120	230	-1.78857	-1.42353	-1.31291	-0.50785	-1.50649	-1.34689	0.75926	-2.14862	0.6389	-1.84091	-0.95815
121	231	-1.78857	-0.36373	-0.24324	1.739	-1.50649	-0.31409	-0.3582	-1.10296	0.6389	-0.92297	2.5508
122	233	-0.62072	-0.36373	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	0.6389	0.91291	-0.95815
123	237	0.54713	-0.36373	-0.24324	0.61558	-0.38201	-1.34689	0.75926	-0.0573	0.6389	-0.92297	-0.95815
124	239	0.54713	-0.36373	0.82643	-0.50785	0.74246	-0.31409	-0.3582	-1.10296	-0.47157	0.91291	0.2115
125	241	-0.62072	-0.36373	-1.31291	0.61558	0.74246	0.71872	-0.3582	-0.0573	-0.47157	-0.92297	-0.95815
126	244	0.54713	0.69607	0.82643	0.61558	-0.38201	-0.31409	0.75926	0.98836	0.6389	-0.00503	1.38115
127	247	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	0.75926	-0.0573	0.6389	-0.92297	0.2115
128	248	0.54713	-0.36373	0.82643	-0.50785	0.74246	0.71872	0.75926	0.98836	-0.47157	0.91291	0.2115
129	251	-0.62072	0.69607	0.82643	0.61558	-0.38201	0.71872	0.75926	0.98836	0.6389	-0.00503	0.2115

130	252	0.54713	0.69607	-0.24324	-0.50785	0.74246	0.71872	-0.3582	-0.0573	0.6389	-0.00503	-0.95815
131	254	0.54713	0.69607	0.82643	0.61558	1.86694	1.75152	1.87673	-0.0573	0.6389	-0.00503	1.38115
132	257	0.54713	0.69607	0.82643	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
133	259	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
134	262	1.71498	1.75587	1.89611	1.739	0.74246	0.71872	0.75926	2.03403	0.6389	0.91291	-0.95815
135	264	-0.62072	-0.36373	-0.24324	-1.63128	-1.50649	-1.34689	0.75926	-0.0573	-0.47157	0.91291	0.2115
136	266	-0.62072	-0.36373	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-0.47157	-0.92297	0.2115
137	267	0.54713	1.75587	1.89611	1.739	0.74246	0.71872	1.87673	0.98836	1.74938	1.83085	-0.95815
138	268	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-1.47567	-0.0573	-1.58205	-0.92297	0.2115
139	271	0.54713	-1.42353	-0.24324	-0.50785	-1.50649	-0.31409	0.75926	-0.0573	-0.47157	0.91291	0.2115
140	275	0.54713	-0.36373	-0.24324	-1.63128	-0.38201	-1.34689	0.75926	-1.10296	-0.47157	1.83085	2.5508
141	278	-2.95642	-2.48333	-1.31291	0.61558	0.74246	-0.31409	-0.3582	-2.14862	0.6389	-0.92297	-0.95815
142	279	-0.62072	0.69607	0.82643	0.61558	-0.38201	-0.31409	0.75926	-0.0573	0.6389	0.91291	-0.95815
143	280	0.54713	0.69607	-0.24324	0.61558	-1.50649	0.71872	0.75926	0.98836	0.6389	-0.92297	-0.95815
144	282	-0.62072	-0.36373	-0.24324	0.61558	-0.38201	0.71872	-0.3582	-1.10296	-0.47157	-0.92297	0.2115
145	283	0.54713	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-2.14862	0.6389	-0.00503	-0.95815
146	285	-0.62072	0.69607	0.82643	0.61558	-0.38201	-1.34689	-0.3582	-0.0573	0.6389	-0.92297	0.2115
147	288	0.54713	0.69607	-0.24324	-1.63128	-1.50649	-2.3797	0.75926	-0.0573	1.74938	-1.84091	0.2115
148	294	0.54713	0.69607	0.82643	-0.50785	-0.38201	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
149	295	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	-0.00503	0.2115
150	296	0.54713	-0.36373	-0.24324	-0.50785	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	0.2115
151	297	0.54713	-1.42353	-1.31291	-1.63128	-0.38201	0.71872	0.75926	-2.14862	-0.47157	-0.92297	-0.95815
152	298	-0.62072	-0.36373	-1.31291	-1.63128	-0.38201	-0.31409	-0.3582	-0.0573	-1.58205	-0.92297	1.38115
153	301	0.54713	-2.48333	-1.31291	-0.50785	-1.50649	-1.34689	-1.47567	-2.14862	-1.58205	-1.84091	-0.95815
154	304	-0.62072	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
155	305	-0.62072	-0.36373	-1.31291	-0.50785	-0.38201	0.71872	-0.3582	-1.10296	-0.47157	-1.84091	-0.95815
156	306	-1.78857	0.69607	0.82643	-0.50785	-1.50649	0.71872	-1.47567	0.98836	-0.47157	-0.00503	1.38115
157	310	0.54713	1.75587	-0.24324	-0.50785	-0.38201	0.71872	1.87673	2.03403	1.74938	1.83085	-0.95815
158	311	-0.62072	0.69607	0.82643	0.61558	-0.38201	0.71872	0.75926	-0.0573	0.6389	1.83085	-0.95815
159	312	0.54713	0.69607	1.89611	0.61558	0.74246	-0.31409	-0.3582	0.98836	1.74938	1.83085	-0.95815
160	313	-0.62072	-1.42353	-0.24324	-1.63128	-1.50649	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	0.2115
161	314	0.54713	0.69607	0.82643	0.61558	-0.38201	-0.31409	0.75926	0.98836	-0.47157	0.91291	0.2115
162	320	0.54713	-0.36373	1.89611	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	0.91291	-0.95815
163	322	1.71498	1.75587	0.82643	1.739	0.74246	0.71872	-0.3582	0.98836	1.74938	0.91291	-0.95815
164	323	0.54713	0.69607	1.89611	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
165	332	1.71498	-0.36373	-0.24324	-0.50785	0.74246	1.75152	1.87673	2.03403	0.6389	-0.00503	-0.95815
166	335	0.54713	0.69607	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	0.6389	-0.00503	-0.95815
167	337	-0.62072	0.69607	-0.24324	-0.50785	0.74246	0.71872	0.75926	-0.0573	-0.47157	0.91291	1.38115
168	339	-0.62072	-1.42353	1.89611	0.61558	0.74246	0.71872	-0.3582	-0.0573	-0.47157	-0.00503	-0.95815
169	340	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	-0.47157	0.91291	1.38115
170	341	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
171	342	-0.62072	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	0.2115
172	345	0.54713	0.69607	0.82643	0.61558	0.74246	-0.31409	-0.3582	-0.0573	0.6389	0.91291	0.2115
173	347	1.71498	1.75587	-0.24324	0.61558	-0.38201	0.71872	-0.3582	0.98836	0.6389	0.91291	-0.95815
174	349	0.54713	-1.42353	-1.31291	-0.50785	-1.50649	0.71872	0.75926	-2.14862	0.6389	-0.92297	-0.95815

175	352	-0.62072	0.69607	-0.24324	-0.50785	-0.38201	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
176	355	1.71498	1.75587	0.82643	0.61558	1.86694	1.75152	0.75926	0.98836	1.74938	1.83085	-0.95815
177	356	-0.62072	-1.42353	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	-0.0573	-1.58205	-0.00503	0.2115
178	360	-1.78857	-0.36373	-0.24324	-0.50785	-1.50649	-1.34689	-1.47567	-0.0573	-0.47157	-0.92297	-0.95815
179	366	-0.62072	-1.42353	0.82643	-0.50785	-1.50649	0.71872	-0.3582	-1.10296	0.6389	-0.92297	0.2115
180	367	-0.62072	0.69607	-0.24324	-1.63128	-0.38201	0.71872	0.75926	-0.0573	-0.47157	-0.00503	0.2115
181	368	-0.62072	0.69607	0.82643	1.739	0.74246	-0.31409	-0.3582	0.98836	1.74938	0.91291	0.2115
182	369	0.54713	0.69607	-0.24324	0.61558	0.74246	0.71872	-0.3582	-0.0573	0.6389	0.91291	0.2115
183	370	-0.62072	0.69607	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	0.6389	-0.00503	-0.95815
184	376	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	0.75926	-0.0573	0.6389	-0.92297	0.2115
185	379	-0.62072	-0.36373	-0.24324	0.61558	-0.38201	-0.31409	0.75926	-0.0573	-0.47157	-0.00503	1.38115
186	380	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	-1.47567	-0.0573	-0.47157	-0.92297	1.38115
187	384	-0.62072	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-2.59313	-2.14862	-2.69252	-1.84091	0.2115
188	388	-1.78857	-0.36373	-1.31291	-0.50785	-0.38201	-0.31409	-1.47567	-1.10296	-1.58205	-1.84091	1.38115
189	390	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	0.75926	-1.10296	-0.47157	-0.92297	1.38115
190	391	-1.78857	-1.42353	-1.31291	0.61558	-1.50649	-0.31409	-1.47567	-0.0573	-0.47157	-0.92297	1.38115
191	392	-0.62072	-1.42353	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	-1.10296	-0.47157	-0.92297	-0.95815
192	395	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-1.34689	-1.47567	-0.0573	-1.58205	-0.00503	-0.95815
193	397	0.54713	-1.42353	-1.31291	-1.63128	-1.50649	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
194	400	0.54713	-0.36373	-1.31291	0.61558	0.74246	0.71872	-1.47567	-0.0573	-1.58205	-0.92297	-0.95815
195	403	0.54713	0.69607	-0.24324	-0.50785	0.74246	0.71872	-1.47567	-0.0573	0.6389	-0.00503	0.2115
196	405	0.54713	0.69607	1.89611	-0.50785	-0.38201	0.71872	1.87673	0.98836	0.6389	0.91291	0.2115
197	415	-0.62072	-0.36373	-0.24324	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
198	416	0.54713	-0.36373	0.82643	1.739	-0.38201	1.75152	0.75926	2.03403	0.6389	1.83085	0.2115
199	418	1.71498	1.75587	1.89611	0.61558	1.86694	0.71872	0.75926	2.03403	1.74938	1.83085	-0.95815
200	419	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
201	421	-2.95642	0.69607	-2.38259	-2.7547	-1.50649	-1.34689	-1.47567	-1.10296	-0.47157	-0.00503	-0.95815
202	422	-0.62072	0.69607	-1.31291	-1.63128	-0.38201	-2.3797	-1.47567	-0.0573	-2.69252	-1.84091	2.5508
203	424	0.54713	0.69607	0.82643	0.61558	1.86694	1.75152	0.75926	0.98836	1.74938	1.83085	-0.95815
204	425	0.54713	-0.36373	-0.24324	0.61558	-0.38201	0.71872	-0.3582	-0.0573	-0.47157	0.91291	1.38115
205	426	-0.62072	-1.42353	-0.24324	-1.63128	-0.38201	-1.34689	-0.3582	-1.10296	-0.47157	-0.00503	0.2115
206	427	-0.62072	-1.42353	-1.31291	0.61558	-1.50649	-1.34689	-0.3582	-1.10296	0.6389	-0.92297	0.2115
207	428	-0.62072	0.69607	-0.24324	-0.50785	-0.38201	-1.34689	-0.3582	-0.0573	-1.58205	-0.00503	-0.95815
208	430	0.54713	0.69607	-0.24324	0.61558	-0.38201	0.71872	-0.3582	0.98836	0.6389	0.91291	1.38115
209	432	-0.62072	0.69607	-0.24324	0.61558	0.74246	0.71872	-0.3582	0.98836	-0.47157	0.91291	1.38115
210	433	-0.62072	0.69607	-0.24324	-0.50785	0.74246	0.71872	-0.3582	0.98836	-0.47157	0.91291	1.38115
211	436	0.54713	-0.36373	-1.31291	-0.50785	-0.38201	-0.31409	0.75926	-0.0573	-0.47157	0.91291	0.2115
212	439	-0.62072	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-1.84091	-0.95815
213	441	0.54713	-0.36373	-0.24324	-0.50785	0.74246	-0.31409	-1.47567	-1.10296	-1.58205	-0.92297	2.5508
214	442	-1.78857	-1.42353	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	-0.95815
215	443	-1.78857	-2.48333	-1.31291	-0.50785	-0.38201	-2.3797	-0.3582	-1.10296	-1.58205	-0.92297	1.38115
216	445	-0.62072	-0.36373	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.92297	0.2115
217	446	-0.62072	-1.42353	-1.31291	-1.63128	-0.38201	-2.3797	-0.3582	-2.14862	-1.58205	-0.00503	1.38115
218	447	0.54713	0.69607	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	0.6389	-0.00503	-0.95815
219	448	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-1.10296	-0.47157	0.91291	0.2115

220	454	0.54713	0.69607	0.82643	-0.50785	-0.38201	-0.31409	-1.47567	-1.10296	-0.47157	0.91291	-0.95815
221	456	0.54713	0.69607	0.82643	-0.50785	0.74246	0.71872	0.75926	0.98836	-0.47157	-0.00503	-0.95815
222	457	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
223	458	-1.78857	-2.48333	-1.31291	-0.50785	0.74246	-0.31409	0.75926	-2.14862	-0.47157	-0.00503	-0.95815
224	460	-0.62072	-0.36373	-2.38259	-0.50785	-1.50649	0.71872	-0.3582	-0.0573	-0.47157	-0.00503	-0.95815
225	461	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
226	463	1.71498	0.69607	0.82643	0.61558	0.74246	-0.31409	0.75926	-1.10296	-1.58205	-0.00503	1.38115
227	466	-1.78857	0.69607	-0.24324	-0.50785	0.74246	0.71872	0.75926	-1.10296	0.6389	0.91291	-0.95815
228	471	1.71498	-0.36373	0.82643	0.61558	0.74246	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	0.2115
229	477	1.71498	0.69607	0.82643	1.739	-0.38201	0.71872	0.75926	-0.0573	0.6389	-0.92297	-0.95815
230	481	-0.62072	-0.36373	-0.24324	-0.50785	0.74246	0.71872	-0.3582	-0.0573	0.6389	-0.00503	0.2115
231	483	0.54713	0.69607	-1.31291	0.61558	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	0.2115
232	484	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
233	485	0.54713	0.69607	0.82643	-0.50785	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	-0.95815
234	486	-0.62072	1.75587	1.89611	1.739	0.74246	1.75152	1.87673	2.03403	1.74938	-0.00503	-0.95815
235	488	-1.78857	-1.42353	-0.24324	0.61558	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	-0.95815
236	491	-0.62072	-0.36373	-0.24324	0.61558	0.74246	-0.31409	-1.47567	-0.0573	-0.47157	-1.84091	0.2115
237	495	-0.62072	-1.42353	-1.31291	-1.63128	-0.38201	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	-0.95815
238	497	0.54713	-0.36373	0.82643	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.92297	-0.95815
239	498	-2.95642	-2.48333	-2.38259	-2.7547	-2.63096	-2.3797	-2.59313	-2.14862	-2.69252	-1.84091	-0.95815
240	502	-0.62072	-0.36373	-0.24324	-0.50785	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.92297	-0.95815
241	503	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
242	504	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	-0.95815
243	505	-0.62072	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	-0.95815
244	506	-0.62072	-1.42353	-0.24324	-0.50785	-0.38201	-1.34689	-1.47567	-1.10296	-0.47157	-0.92297	0.2115
245	509	-0.62072	0.69607	-1.31291	0.61558	-0.38201	-0.31409	-1.47567	-2.14862	-1.58205	-0.92297	-0.95815
246	510	-0.62072	-0.36373	-0.24324	-1.63128	-1.50649	-1.34689	-0.3582	-0.0573	-0.47157	-0.92297	0.2115
247	512	-0.62072	-1.42353	-0.24324	-0.50785	-1.50649	-0.31409	-1.47567	-0.0573	-1.58205	-0.00503	1.38115
248	514	-0.62072	-1.42353	-0.24324	-1.63128	-0.38201	-1.34689	-0.3582	-1.10296	-1.58205	-0.92297	-0.95815
249	516	-0.62072	-0.36373	0.82643	-0.50785	-1.50649	-0.31409	-0.3582	-1.10296	-0.47157	0.91291	1.38115
250	517	-1.78857	-1.42353	0.82643	-0.50785	-0.38201	-0.31409	0.75926	0.98836	-0.47157	-0.00503	1.38115
251	518	-1.78857	-0.36373	-1.31291	-1.63128	0.74246	-1.34689	-1.47567	-1.10296	-0.47157	-0.92297	-0.95815
252	522	0.54713	0.69607	-0.24324	0.61558	0.74246	1.75152	0.75926	0.98836	0.6389	-0.92297	1.38115
253	524	-1.78857	-1.42353	0.82643	0.61558	-0.38201	-1.34689	1.87673	0.98836	1.74938	0.91291	-0.95815
254	527	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-1.47567	-0.0573	-1.58205	-0.00503	-0.95815
255	529	0.54713	1.75587	1.89611	1.739	1.86694	1.75152	0.75926	0.98836	1.74938	1.83085	-0.95815
256	531	-0.62072	-2.48333	-1.31291	-1.63128	-2.63096	-0.31409	-1.47567	-2.14862	-1.58205	-1.84091	-0.95815
257	533	0.54713	0.69607	0.82643	0.61558	1.86694	1.75152	1.87673	0.98836	0.6389	1.83085	0.2115
258	534	0.54713	0.69607	0.82643	-0.50785	-1.50649	0.71872	-0.3582	-0.0573	0.6389	-0.00503	1.38115
259	536	-0.62072	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
260	537	0.54713	0.69607	0.82643	1.739	-0.38201	-1.34689	-0.3582	0.98836	-0.47157	-0.92297	-0.95815
261	539	0.54713	-1.42353	-0.24324	0.61558	0.74246	-0.31409	0.75926	-1.10296	0.6389	-0.92297	-0.95815
262	540	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	-0.3582	0.98836	0.6389	-0.00503	0.2115
263	541	-1.78857	-1.42353	-1.31291	-0.50785	-0.38201	-2.3797	-2.59313	-2.14862	-0.47157	-1.84091	-0.95815
264	542	0.54713	-0.36373	-0.24324	-0.50785	0.74246	-0.31409	0.75926	-0.0573	-0.47157	-0.92297	1.38115

265	546	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	-0.95815
266	547	-0.62072	-1.42353	-2.38259	-0.50785	-0.38201	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	0.2115
267	548	-0.62072	-0.36373	0.82643	-0.50785	0.74246	1.75152	0.75926	-0.0573	0.6389	-0.00503	0.2115
268	550	0.54713	-0.36373	-0.24324	-1.63128	0.74246	-0.31409	-1.47567	-0.0573	-0.47157	-1.84091	-0.95815
269	552	1.71498	-0.36373	-0.24324	-0.50785	0.74246	0.71872	-0.3582	-0.0573	0.6389	-0.92297	1.38115
270	553	-1.78857	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-1.47567	-1.10296	-2.69252	-1.84091	0.2115
271	555	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	-1.10296	-0.47157	-0.00503	1.38115
272	556	-0.62072	-1.42353	-2.38259	-2.7547	-2.63096	-2.3797	-1.47567	-2.14862	-2.69252	-0.92297	-0.95815
273	557	-1.78857	-1.42353	-1.31291	-0.50785	-0.38201	-0.31409	-0.3582	-1.10296	-0.47157	-0.00503	-0.95815
274	559	1.71498	-0.36373	-0.24324	1.739	-1.50649	-1.34689	-1.47567	-0.0573	1.74938	0.91291	0.2115
275	560	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	2.5508
276	561	0.54713	-0.36373	-1.31291	0.61558	-1.50649	-0.31409	-0.3582	-1.10296	0.6389	-0.00503	1.38115
277	562	0.54713	0.69607	-0.24324	-1.63128	0.74246	-0.31409	0.75926	-0.0573	0.6389	-0.00503	-0.95815
278	563	0.54713	-0.36373	0.82643	-0.50785	0.74246	-1.34689	-0.3582	-1.10296	-0.47157	-0.92297	1.38115
279	565	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	-0.95815
280	573	-1.78857	-1.42353	-1.31291	-1.63128	-0.38201	0.71872	-1.47567	-0.0573	-0.47157	-0.92297	-0.95815
281	574	-2.95642	-2.48333	-2.38259	-2.7547	-2.63096	-0.31409	-0.3582	-1.10296	-0.47157	-1.84091	0.2115
282	578	0.54713	1.75587	0.82643	0.61558	1.86694	-0.31409	0.75926	-0.0573	0.6389	0.91291	-0.95815
283	579	-0.62072	-1.42353	-1.31291	-1.63128	-0.38201	1.75152	-1.47567	-0.0573	-0.47157	-1.84091	-0.95815
284	582	0.54713	-0.36373	0.82643	0.61558	-0.38201	0.71872	0.75926	2.03403	1.74938	0.91291	1.38115
285	583	-1.78857	-0.36373	-1.31291	-1.63128	-1.50649	0.71872	0.75926	-0.0573	-0.47157	-0.00503	-0.95815
286	586	-0.62072	-0.36373	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	-0.47157	-0.00503	1.38115
287	588	-1.78857	-0.36373	-0.24324	0.61558	0.74246	-0.31409	0.75926	0.98836	-0.47157	0.91291	0.2115
288	590	-0.62072	0.69607	-0.24324	0.61558	0.74246	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	0.2115
289	591	1.71498	1.75587	1.89611	1.739	1.86694	1.75152	1.87673	2.03403	1.74938	1.83085	-0.95815
290	595	-0.62072	-0.36373	0.82643	0.61558	-0.38201	-0.31409	0.75926	-0.0573	0.6389	-0.00503	-0.95815
291	600	-0.62072	0.69607	0.82643	0.61558	1.86694	-0.31409	-0.3582	-0.0573	-0.47157	-0.92297	0.2115
292	601	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	0.71872	1.87673	0.98836	-0.47157	-0.00503	-0.95815
293	603	0.54713	0.69607	-0.24324	0.61558	0.74246	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	0.2115
294	604	0.54713	1.75587	0.82643	1.739	1.86694	1.75152	-0.3582	0.98836	1.74938	-0.00503	-0.95815
295	605	1.71498	1.75587	0.82643	1.739	1.86694	0.71872	-0.3582	-0.0573	0.6389	-0.92297	-0.95815
296	610	0.54713	0.69607	0.82643	-0.50785	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
297	611	-0.62072	-2.48333	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-1.58205	1.83085	-0.95815
298	612	0.54713	1.75587	0.82643	0.61558	-0.38201	0.71872	1.87673	-0.0573	0.6389	0.91291	0.2115
299	616	-0.62072	-0.36373	0.82643	0.61558	1.86694	0.71872	-0.3582	-0.0573	0.6389	-0.92297	-0.95815
300	618	0.54713	-0.36373	0.82643	-0.50785	-0.38201	-0.31409	-0.3582	0.98836	0.6389	-0.00503	0.2115
301	621	0.54713	0.69607	-0.24324	0.61558	0.74246	0.71872	-0.3582	0.98836	-0.47157	0.91291	0.2115
302	622	0.54713	0.69607	-0.24324	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	-0.95815
303	624	0.54713	0.69607	-0.24324	0.61558	0.74246	0.71872	0.75926	-0.0573	-0.47157	-1.84091	-0.95815
304	626	1.71498	0.69607	-0.24324	-0.50785	0.74246	0.71872	0.75926	-0.0573	1.74938	0.91291	0.2115
305	627	0.54713	0.69607	1.89611	0.61558	-0.38201	-0.31409	0.75926	-0.0573	0.6389	1.83085	0.2115
306	628	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	-0.47157	-0.00503	-0.95815
307	631	1.71498	0.69607	0.82643	-2.7547	-1.50649	-0.31409	1.87673	0.98836	-1.58205	-0.00503	1.38115
308	632	-0.62072	-1.42353	-1.31291	-1.63128	-0.38201	-1.34689	-1.47567	-0.0573	-1.58205	-0.92297	-0.95815
309	633	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	0.91291	0.2115

310	634	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
311	638	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	0.2115
312	640	1.71498	1.75587	0.82643	1.739	-0.38201	0.71872	-1.47567	-0.0573	0.6389	-0.92297	-0.95815
313	643	-0.62072	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	1.38115
314	645	0.54713	-0.36373	-0.24324	0.61558	0.74246	-0.31409	-0.3582	0.98836	0.6389	-0.00503	0.2115
315	646	0.54713	0.69607	1.89611	0.61558	-0.38201	0.71872	0.75926	0.98836	-0.47157	-0.92297	-0.95815
316	648	0.54713	0.69607	1.89611	-0.50785	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	-0.95815
317	653	0.54713	-0.36373	-0.24324	-0.50785	0.74246	0.71872	-0.3582	-0.0573	0.6389	-0.00503	-0.95815
318	655	0.54713	0.69607	0.82643	0.61558	0.74246	-1.34689	-1.47567	-1.10296	0.6389	-0.92297	-0.95815
319	657	0.54713	0.69607	-0.24324	-0.50785	-0.38201	-0.31409	0.75926	0.98836	-0.47157	0.91291	-0.95815
320	658	-2.95642	-1.42353	-2.38259	-0.50785	-2.63096	-2.3797	0.75926	-2.14862	-0.47157	-1.84091	-0.95815
321	659	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	-0.3582	0.98836	0.6389	0.91291	0.2115
322	663	0.54713	1.75587	0.82643	1.739	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	-0.00503	-0.95815
323	665	-0.62072	-0.36373	0.82643	1.739	1.86694	0.71872	-0.3582	0.98836	0.6389	0.91291	-0.95815
324	667	0.54713	-0.36373	0.82643	0.61558	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	-0.95815
325	668	-0.62072	-0.36373	-1.31291	-0.50785	-0.38201	-1.34689	-0.3582	-1.10296	-1.58205	-1.84091	-0.95815
326	670	-0.62072	0.69607	-1.31291	-0.50785	1.86694	-1.34689	-0.3582	-2.14862	0.6389	0.91291	-0.95815
327	671	1.71498	0.69607	0.82643	0.61558	-0.38201	0.71872	0.75926	-0.0573	-0.47157	0.91291	-0.95815
328	672	-0.62072	-0.36373	0.82643	0.61558	-0.38201	0.71872	0.75926	-0.0573	-0.47157	0.91291	0.2115
329	676	1.71498	1.75587	1.89611	1.739	0.74246	0.71872	1.87673	2.03403	1.74938	1.83085	-0.95815
330	677	0.54713	0.69607	0.82643	0.61558	-0.38201	1.75152	0.75926	0.98836	-0.47157	0.91291	1.38115
331	678	0.54713	-0.36373	-0.24324	0.61558	0.74246	0.71872	0.75926	-0.0573	0.6389	-0.00503	-0.95815
332	679	0.54713	1.75587	0.82643	0.61558	-0.38201	0.71872	0.75926	2.03403	1.74938	1.83085	0.2115
333	680	0.54713	0.69607	-1.31291	-1.63128	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	0.91291	0.2115
334	681	1.71498	0.69607	-0.24324	0.61558	0.74246	0.71872	-0.3582	0.98836	0.6389	0.91291	-0.95815
335	683	0.54713	-0.36373	-0.24324	0.61558	0.74246	-0.31409	-0.3582	-0.0573	0.6389	0.91291	-0.95815
336	684	0.54713	0.69607	0.82643	1.739	1.86694	1.75152	1.87673	0.98836	1.74938	0.91291	0.2115
337	685	0.54713	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
338	687	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	0.75926	0.98836	0.6389	0.91291	0.2115
339	690	-0.62072	0.69607	-0.24324	0.61558	0.74246	-0.31409	-1.47567	0.98836	-0.47157	-0.92297	-0.95815
340	691	0.54713	-0.36373	-0.24324	0.61558	0.74246	-0.31409	0.75926	-0.0573	-0.47157	-0.00503	-0.95815
341	693	0.54713	-1.42353	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	0.6389	1.83085	-0.95815
342	694	1.71498	1.75587	1.89611	1.739	1.86694	1.75152	1.87673	2.03403	1.74938	1.83085	-0.95815
343	696	0.54713	0.69607	0.82643	0.61558	0.74246	-0.31409	0.75926	0.98836	-0.47157	0.91291	0.2115
344	697	-0.62072	-1.42353	-1.31291	-0.50785	-0.38201	-0.31409	0.75926	-0.0573	-1.58205	-0.92297	-0.95815
345	702	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	0.71872	-0.3582	0.98836	-0.47157	-0.00503	1.38115
346	704	0.54713	0.69607	0.82643	0.61558	0.74246	0.71872	-0.3582	-0.0573	0.6389	-0.00503	0.2115
347	705	1.71498	1.75587	1.89611	0.61558	-0.38201	1.75152	0.75926	2.03403	1.74938	0.91291	-0.95815
348	706	-0.62072	-0.36373	-0.24324	-0.50785	0.74246	-0.31409	-0.3582	-1.10296	0.6389	-0.92297	0.2115
349	709	0.54713	0.69607	-0.24324	1.739	0.74246	-0.31409	0.75926	-0.0573	-0.47157	-0.00503	0.2115
350	710	-0.62072	1.75587	0.82643	0.61558	-0.38201	-0.31409	1.87673	-0.0573	0.6389	1.83085	0.2115
351	712	0.54713	0.69607	0.82643	1.739	0.74246	-0.31409	0.75926	0.98836	1.74938	0.91291	0.2115
352	713	-0.62072	0.69607	-1.31291	-0.50785	-0.38201	0.71872	-1.47567	-1.10296	0.6389	-0.92297	0.2115
353	715	0.54713	-0.36373	-0.24324	-0.50785	-0.38201	-0.31409	-0.3582	-0.0573	-0.47157	-0.00503	1.38115
354	716	-0.62072	0.69607	1.89611	-0.50785	0.74246	-0.31409	0.75926	-0.0573	-0.47157	-0.92297	0.2115

355	717	-1.78857	-1.42353	-1.31291	-0.50785	-1.50649	-1.34689	-1.47567	-1.10296	-1.58205	-0.92297	1.38115
356	718	-0.62072	0.69607	0.82643	1.739	1.86694	1.75152	-0.3582	-0.0573	0.6389	0.91291	0.2115
357	720	0.54713	-0.36373	-0.24324	-0.50785	0.74246	-1.34689	-1.47567	-2.14862	-0.47157	-1.84091	-0.95815
358	721	1.71498	1.75587	-1.31291	0.61558	0.74246	-0.31409	-0.3582	-1.10296	-1.58205	-0.92297	-0.95815
359	722	0.54713	0.69607	-0.24324	-1.63128	-0.38201	-0.31409	-0.3582	-1.10296	0.6389	-0.92297	-0.95815
360	723	0.54713	0.69607	0.82643	-0.50785	0.74246	-0.31409	0.75926	0.98836	-0.47157	0.91291	0.2115
361	725	0.54713	1.75587	1.89611	1.739	1.86694	0.71872	1.87673	2.03403	1.74938	1.83085	0.2115
362	727	0.54713	0.69607	-2.38259	0.61558	-0.38201	0.71872	-0.3582	-2.14862	-0.47157	-1.84091	-0.95815
363	728	1.71498	-0.36373	1.89611	0.61558	0.74246	0.71872	0.75926	-1.10296	0.6389	-0.00503	-0.95815
364	729	-0.62072	-1.42353	-2.38259	-0.50785	-0.38201	-1.34689	-1.47567	-1.10296	-1.58205	-1.84091	0.2115
365	730	-1.78857	-1.42353	-1.31291	-1.63128	-1.50649	-1.34689	-0.3582	-1.10296	-1.58205	-0.92297	2.5508

Appendix 4.7

Normality assessment results (PLS Stage, N=360)

Figure A
Histograms of normality

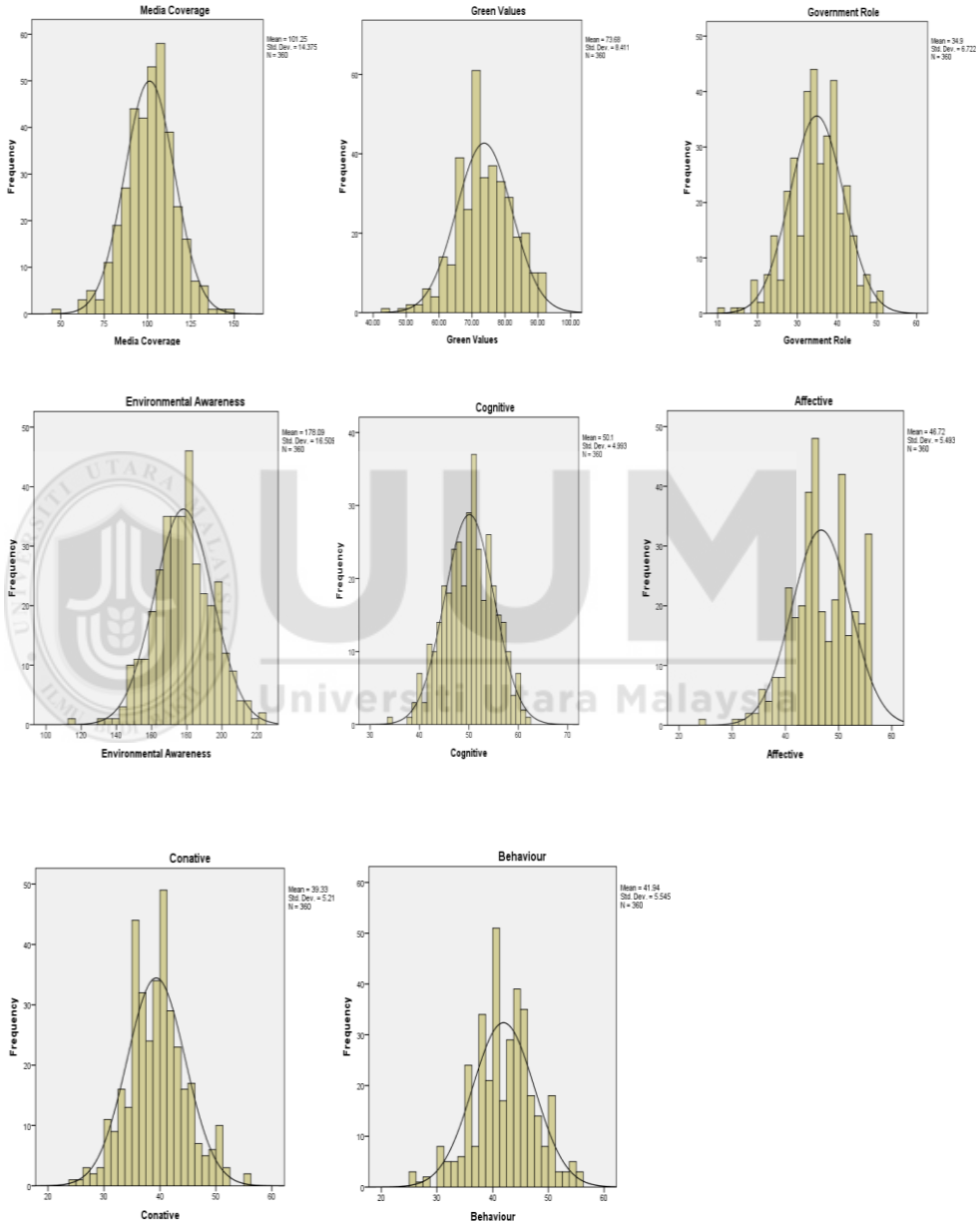
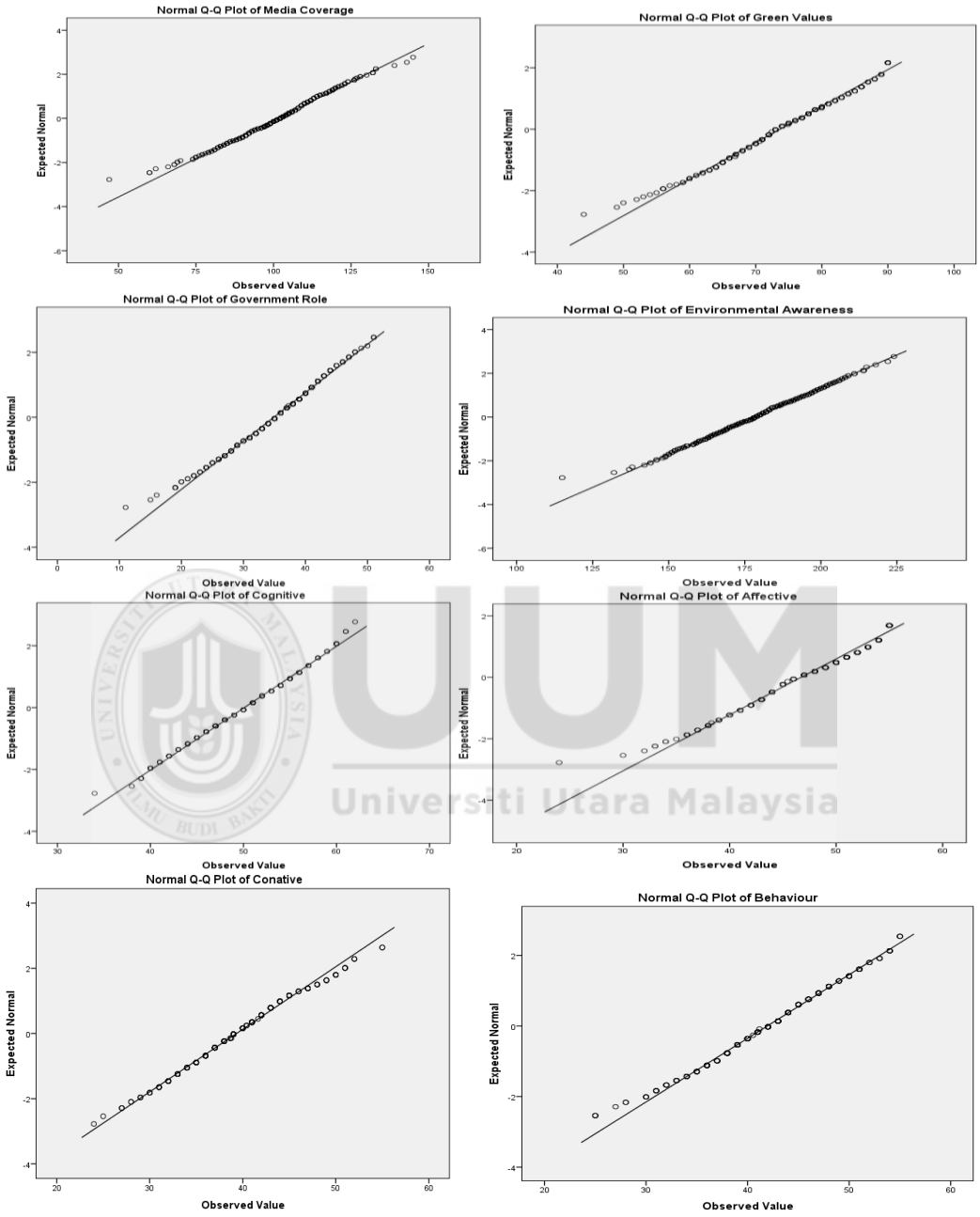
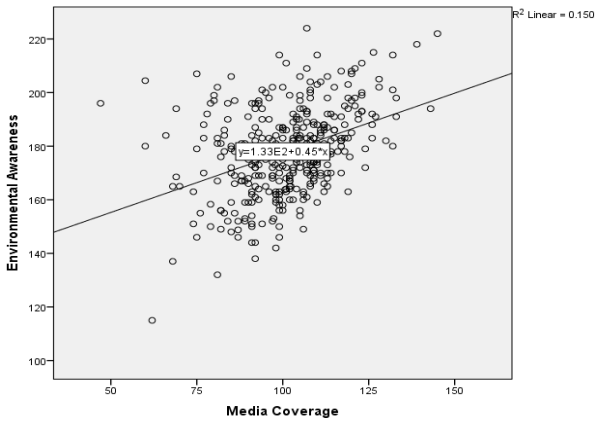


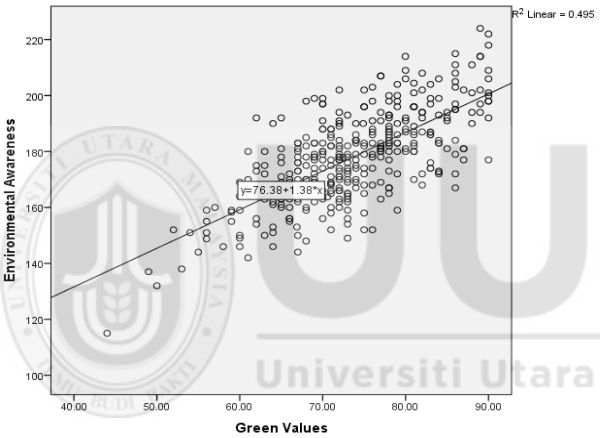
Figure B
Normal Q-Q plots

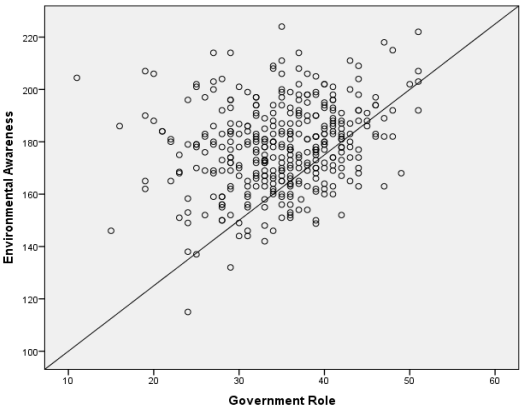


Appendix 4.8

Linearity assessment results (PLS Stage, N=360)

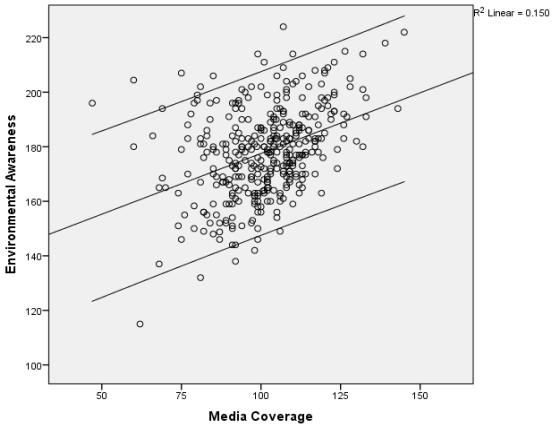


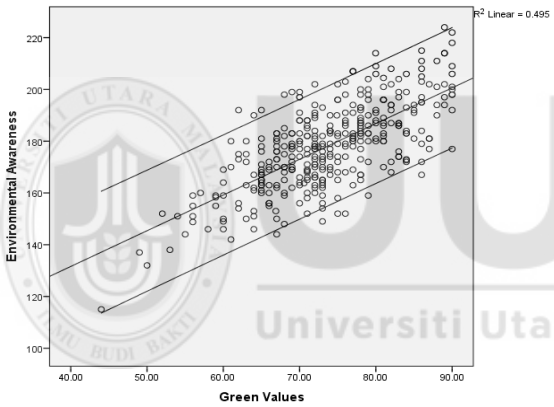


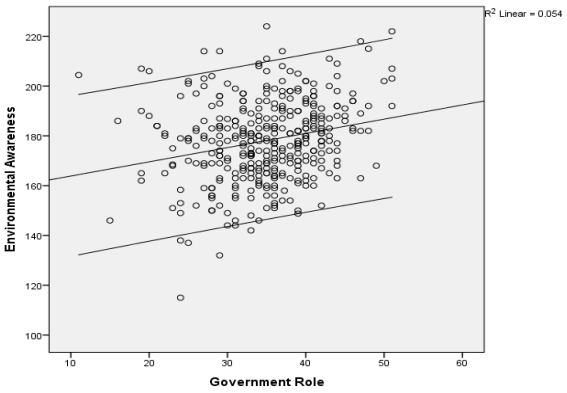


Appendix 4.9

Results of Homoscedasticity assessment (PLS Stage, N=360)







Appendix 4.10

Blindfolding results: Cross-validated redundancy

The Results of Blindfolding for the whole Model

Total	SSO	SSE	1-SSE/SSO
EA	1440.000	1000.539	0.305
Case 1	SSO	SSE	1-SSE/SSO
EA	152.952	126.213	0.175
Case 2	SSO	SSE	1-SSE/SSO
EA	214.763	172.195	0.198
Case 3	SSO	SSE	1-SSE/SSO
EA	196.243	121.073	0.383
Case 4	SSO	SSE	1-SSE/SSO
EA	193.792	127.843	0.340
Case 5	SSO	SSE	1-SSE/SSO
EA	233.169	172.169	0.262
Case 6	SSO	SSE	1-SSE/SSO
EA	275.407	154.646	0.439
Case 7	SSO	SSE	1-SSE/SSO
EA	173.675	126.399	0.272

Blindfolding Results Excluding Media coverage			
Total	SSO	SSE	1-SSE/SSO
EA	1440.000	1025.687	0.288
Case 1	SSO	SSE	1-SSE/SSO
EA	155.286	123.418	0.205
Case 2	SSO	SSE	1-SSE/SSO
EA	158.712	139.183	0.123
Case 3	SSO	SSE	1-SSE/SSO
EA	242.102	167.114	0.310
Case 4	SSO	SSE	1-SSE/SSO
EA	177.478	119.512	0.327
Case 5	SSO	SSE	1-SSE/SSO
EA	193.981	140.953	0.273
Case 6	SSO	SSE	1-SSE/SSO
EA	258.238	177.566	0.312
Case 7	SSO	SSE	1-SSE/SSO
EA	254.203	157.941	0.379

Blindfolding Results Excluding Interaction GR*MC			
Total	SSO	SSE	1-SSE/SSO
EA	1440.000	1025.800	0.288
Case 1	SSO	SSE	1-SSE/SSO
EA	155.286	123.650	0.204
Case 2	SSO	SSE	1-SSE/SSO
EA	158.712	139.207	0.123
Case 3	SSO	SSE	1-SSE/SSO
EA	242.102	166.966	0.310
Case 4	SSO	SSE	1-SSE/SSO
EA	177.478	119.222	0.328
Case 5	SSO	SSE	1-SSE/SSO
EA	193.981	140.814	0.274
Case 6	SSO	SSE	1-SSE/SSO
EA	258.238	178.059	0.311
Case 7	SSO	SSE	1-SSE/SSO
EA	254.203	157.881	0.379

Blindfolding Results Excluding Interaction GV*MC			
Total	SSO	SSE	1-SSE/SSO
EA	1440.000	1014.501	0.296
Case 1	SSO	SSE	1-SSE/SSO
EA	163.143	119.226	0.269
Case 2	SSO	SSE	1-SSE/SSO
EA	185.218	138.863	0.250
Case 3	SSO	SSE	1-SSE/SSO
EA	251.746	169.759	0.326
Case 4	SSO	SSE	1-SSE/SSO
EA	250.149	150.158	0.400
Case 5	SSO	SSE	1-SSE/SSO
EA	169.810	131.725	0.224
Case 6	SSO	SSE	1-SSE/SSO
EA	192.543	136.546	0.291
Case 7	SSO	SSE	1-SSE/SSO
EA	227.391	168.223	0.260

Blindfolding Excluding Government Role			
Total	SSO	SSE	1-SSE/SSO
EA	1440.000	1025.687	0.288
Case 1	SSO	SSE	1-SSE/SSO
EA	155.286	123.418	0.205
Case 2	SSO	SSE	1-SSE/SSO
EA	158.712	139.183	0.123
Case 3	SSO	SSE	1-SSE/SSO
EA	242.102	167.114	0.310
Case 4	SSO	SSE	1-SSE/SSO
EA	177.478	119.512	0.327
Case 5	SSO	SSE	1-SSE/SSO
EA	193.981	140.953	0.273
Case 6	SSO	SSE	1-SSE/SSO
EA	258.238	177.566	0.312
Case 7	SSO	SSE	1-SSE/SSO
EA	254.203	157.941	0.379

Blindfolding Results Excluding Green values			
Total	SSO	SSE	1-SSE/SSO
EA	1440.000	1265.166	0.121
Case 1	SSO	SSE	1-SSE/SSO
EA	250.149	203.354	0.187
Case 2	SSO	SSE	1-SSE/SSO
EA	169.810	151.991	0.105
Case 3	SSO	SSE	1-SSE/SSO
EA	192.543	168.850	0.123
Case 4	SSO	SSE	1-SSE/SSO
EA	227.391	198.619	0.127
Case 5	SSO	SSE	1-SSE/SSO
EA	163.143	152.453	0.066
Case 6	SSO	SSE	1-SSE/SSO
EA	185.218	171.837	0.072
Case 7	SSO	SSE	1-SSE/SSO
EA	251.746	218.061	0.134

Appendix 4.11

Interaction effects of government role and green values

Figure A

The interaction effect of government role

Variable names:	
Name of independent variable:	Media coverage
Name of moderator:	Government role
Standardized Regression Coefficients:	
Independent variable:	0.443
Moderator:	0.09
Interaction:	0.15
Intercept / Constant:	3

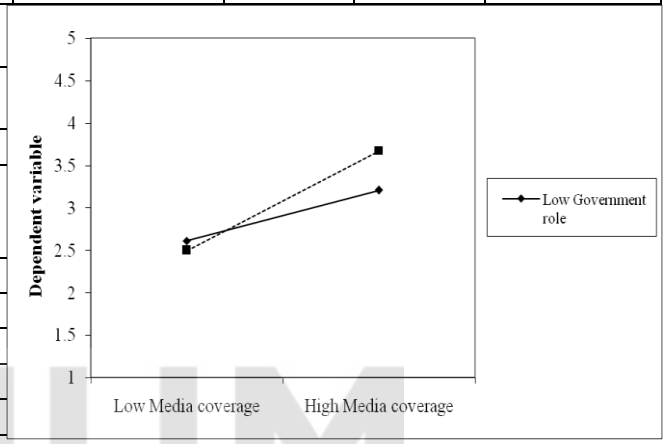


Figure B
The interaction effect of green values

Variable names:	
Name of independent variable:	Media coverage
Name of moderator:	Green values
Standardized Regression Coefficients:	
Independent variable:	0.443
Moderator:	0.69
Interaction:	-0.12
Intercept / Constant:	3