

**Features Affecting the Quality of Sustainability Reporting:
Theoretically-Informed Insights and Empirical Evidence from
the Global Fortune 100 (2011-2015)**

Thesis submitted in Partial Fulfillment of the Requirement for the Doctorate of
Philosophy

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Abstract

Sound *Corporate Governance (CG)* requires business entities to take responsible regard for the equitable interests of all stakeholders and appropriately align their individual concerns. Given that society generally is one significant stakeholder, it then becomes relevant to determine how such entities take regard for and report upon the social and environmental issues that currently threaten the sustainability of our globe. Accordingly, this research focuses on such sustainability issues and how they are reported, through *Sustainability Reporting (SR)*. Verifying corporate social and environmental activities to stakeholders through Sustainability Reporting (SR) tends to gain and maintain corporate social *Legitimacy* and continuity in the market. This is because, SR is an effective and efficient tool for measuring and communicating the corporate social and environmental performance, in conjunction with its economic performance to stakeholders.

Despite the critical importance of Sustainability Reporting, academics and professionals claim that the Quality of Sustainability Reporting is poor. Given this poor quality, it is recognized that several Sustainability Reports do not fulfill the needs of stakeholders. Consequently, based on the theoretical foundation of Legitimacy Theory and relevant literature, this research aims at hypothesizing and testing the effect of four features on the *Quality of Sustainability Reporting (QSR)*. These features are *Adherence to Regulation (ATR)*, *External Assurance of Report (ASR)*, *Independence of Board (IOB)* and *Type of Information (TOI)*. QSR is determined via the Index of the *Global Reporting Initiatives (GRI)*. The GRI is regarded as the international proxy for Sustainability Reporting. Its Index identifies the performance indicators that should be included within the Sustainability Report, in order to fulfill the needs of stakeholders. The relationship between these features and QSR are tested/evaluated within 500 reports. These 500 are the Sustainability Reports of the Global Fortune 100 (G100) companies over the five-year period 2011-2015. Employing an ordinal dependent variable (QSR), the research applies an *Ordinal, Logistic Regression (OLS)* to statistically test hypothesized relationships. The

SPSS statistical software package is used to implement that regression and to statistically analyze the collected data.

The research concludes that *Adherence To Regulations, External Assurance of Report, Independence of Board and Type of Information* significantly affect, (representing 37.1% - 41% of the change in) the *Quality of Sustainability Reporting*. It also concludes that, Adherence to Regulations and External Assurance of Report have an *Extremely Significant and Positive*, relationship with the Quality of Sustainability Reporting. Moreover; there is a *Significant and Positive*, relationship between the Type of Information and Quality of Sustainability Reporting. Regarding the Independence of Board, two main phenomena are identified from the empirical results. The results identify that, there is a *Non-significant* relationship between Independence of Board Members and the Quality of Sustainability Reporting. However; there is a *Significant, Positive*, relationship between the Independence of Board Chair and the Quality of Sustainability Reporting. Therefore, *Adherence to Regulations, External Assurance of Report, Independence of Board Chair and Type of Information* are significant influencing factors that should be seriously considered by reporting firms in order to improve the *Quality of Sustainability Reporting*.

Keywords:

Corporate Governance (CG); Quality of Sustainability Reporting (QSR); Adherence to Regulations (ATR); External Assurance of Report (ASR); Independence of Board (IOB); Type of Information (TOI); Global Reporting Initiatives (GRI).

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List of Publications

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Chapter 1

The Research Introduction

Chapter 1: The Research Introduction

"Sustainable development recognizes that eradicating poverty in all its forms and dimensions, combatting inequality within and among countries, preserving the planet, creating sustained, inclusive and sustainable economic growth and fostering social inclusion are linked to each other and are interdependent."

(Transforming our world: The 2030 Agenda for Sustainable Development – Paragraph 13)

"We need to start cooperating and sharing the remaining resources of this planet in a fair way. We need to start living within the planetary boundaries, focus on equity and take a few steps back for the sake of all living species."

(Greta Thunberg, then a 15-year old Swedish environmental and sustainability activist)

While the words “Corporate Governance” are not contained within either of the above quotations, in fact they significantly embrace the tenets and ethos of sound Corporate Governance. Indeed, it is within Corporate Governance that this research thesis is grounded. In particular, the thesis focuses on disclosure of the corporate sustainability dimension in governance and, importantly, the quality of its reporting within a pre-identified set of 100 companies (corporations¹) across the world. Thus, the *background* of the thesis and its fundamental base lies in the domain of *Corporate Governance*. While many definitions/explanations of governance prevail, a synthesis of some of them suggest sound governance requires organizations to take responsible regard for the *fair alignment* of the varying legitimate, equitable, current and *long-term* interests of all stakeholders. This should be reflected not only in terms of the company and its present share/stakeholders, but also in terms of its diverse “stakeholders” of tomorrow (i.e. future generations).

In other words, sound governance must take regard for inter-generational equity and fairness. Moreover, in doing so, companies have no alternative but to take good regard for the sustainability of resources within their control and ownership and make

¹ This is the term for limited liability incorporated entities (conducting mainly business) in the United States. However, as the thesis is presented in the United Kingdom and (primarily) for U.K. and Egyptian readership, the comparable U.K. term - companies has been consistently used within it.

high quality related reporting. Indeed, in some countries, the boards of companies are specifically charged with a duty to promote the long-term success and sustainability of the company. This is particularly true of the United Kingdom where per the Companies Act 2006, directors are required to “*promote the success*” of the company while taking regard for the likely consequences of any decision in the *long term*. In other words, directors must be conscious of, and take due regard for, matters relating to **Sustainability** – not only in terms of the company itself but also of the wider community and the societal interests it serves and with which it engages.

As society is usually one important form of stakeholder, it is pertinent to determine how companies take regard for and report upon issues of *sustainability* while assessing how these are reported upon and the reports are possibly assured. In many instances, companies convey such sustainability issues via “**Sustainability Reports**”. The precise contents and overall quality of these reports, and the manners in which they are assured (or not) are of much consequence and link in with the empirical aspects of the thesis. Taking regard for the above and being conscious that *Sustainability* is not an individual country-specific concern. Thus, over a span of five consecutive years (2011 to 2015), the research examines the practices and overall quality of Sustainability Reporting in a set of 100 companies registered across 19 individual countries (primarily U.S.A, China, Germany, France, Japan and U.K.) with activities across a few business sectors. These 100 companies are the Global Fortune 100 (G100), all of whom participate in the Global Reporting Initiative - GRI (see next page for more on the GRI). These Global Fortune 100 companies constitute the precise **context** of the research.

The Global Reporting Initiative (known as the GRI) is a non-governmental organization headquartered in Amsterdam, The Netherlands. Through the application of an appropriate framework, its purpose is to encourage and foster increasing and more meaningful communication of Sustainability Reports (also known as Corporate Social Responsibility [CSR] Reports and/or Environmental, Social & Governance [ESG] Reports) by companies all over the world. It is affiliated with the OECD, The Global Compact, the International Standards Organization (ISO) and several like-purposed

organizations. Given the fundamental importance of the GRI to the research, the thesis itself provides much more comprehensive details about it. However, at this juncture one should merely note that the GRI encompasses the network of the thousands of companies across the globe that create the framework itself, use it when communicating and/or reporting their sustainability performance, call for its use as the basis for sustainability information disclosure and actively promote the improvement of reporting standards. The GRI framework enables reviewers of Sustainability Reports to assess environmental impact (environmental indicators) from the activities of the company (performance indicators) and its supply chain.

The preceding paragraphs are but a brief resume of the overall thinking behind this research thesis. The paragraphs that now follow consider much (and many of) the same issues – but in slightly more detail.

1.1. Research Background and Context

Scientific awareness of the environmental damage currently threatening the whole globe is growing. Businesses certainly have much responsibility for that environmental damage. In addition, public pressure exerted by corporate stakeholders on companies nowadays increases. Stakeholders have become more aware of the environmental and social issues that are a consequence of decisions taken by companies. Thus, stakeholders become more requesting for companies to hold their responsibility for the society and environment (Daub, 2007; Roca and Searcy, 2012; Joseph, 2012; Iatridis, 2013; Dissanayake et al., 2016).

The mid-1990s saw the real commencement of a global trend in corporations to integrate information about their corporate social and environmental aspects in the annual reports. Circa 1998, corporations started to publish separate environmental reports, with 35% of the Fortune 250 (largest 250) companies publishing environmental reports. The International Corporate Governance Network (ICGN) reminded the business community that, the environment is an important criterion upon which stakeholders base their

decisions when evaluating a company's value, current and future risks and investment opportunities (Daub, 2007; Raiborn et al., 2011).

Raiborn et al., (2011), claim that, when assessing the performance of an organization, two performance perspectives should be considered. These are economic performance and environmental performance. If an organization's performance is assessed based on only one of these perspectives, the decision will likely be taken based on incomplete assessment. It may also be misleading because both economic performance and environmental perspectives are usually interrelated.

In due course, the concept of Corporate Social Responsibility (CSR) started to evolve and in many cases became a requirement for organizations. Complying with CSR means companies take into consideration the needs of all corporate stakeholders when taking decisions. Such consideration will likely require undertaking voluntary actions over and above mere legal compliance in order to address stakeholders' needs. Further, Corporate Social Responsibility began to be recognized by companies as a motivation for attracting employees, investors and customers to socially responsible organizations (Garrison et al., 2010; Garrison et al., 2011; Roca and Searcy, 2012). However, the concept of Sustainability was explicitly addressed in 1987 with the release of the Brundtland Report. This report not only sets out the fundamental understanding for the concept of Sustainability, but also it contributes, after years of its publishing, towards operationalizing the concept mainly within a business setting. The report argues that, firm sustainable performance should be assessed based on environmental and social values added to stakeholders; -in much, the same way as corporate economic value is added to them (Brundtland, 1987; Baumgartner and Rauter, 2017).

Over time, the concept of sustainable development began to evolve and became of considerable concern within the international and business communities. Accordingly, both groups did much to raise awareness of CSR and sustainability and its development concepts (Eugenio et al., 2013; Dissanayake et al., 2016). Essentially, *Sustainable Development (SD)* addresses the needs of present stakeholders without compromising or

affecting negatively the needs of future stakeholders. In other words, it is that development that considers, not only the economic, but also the environmental and social dimensions of sustainability of any relevant activity (Brundtland, 1987; Gray et al., 1993; Horngren et al., 2006; Hansen and Mowen, 2007; Jackson et al., 2008; Farneti and Guthrie, 2009; Williams et al., 2011; Hubbard, 2011; Hilton and Platt, 2011; Roca and Searcy, 2012; Joseph, 2012; Ahmed and Sundaram, 2012; Lozano, 2013; Hansen and Mowen, 2013; Dissanayake et al., 2016).

In terms of the international community, it is likely that the most influential, international organization is the United Nations (UN). usually comes to minds. The UN plays and has played a pivotal role in promoting the concept of Global Sustainable Development (SD). The UN governments, institutions and individuals. Where, the year 2015 witnesses an important contribution by the UN towards this regards, with the development and issue of its document “Sustainable Development Goals (SDGs) for the year 2030”. The UN perceives the SDGs as a global action plan to achieving sustainable development. It contends that such development would help overcome several critical sustainability issues that threaten the future of the globe. This faithfully taking intense regard for 17 goals that implicitly include 169 objectives. These 17 goals embrace various sustainability issues facing our planet. They range from overcoming poverty to engaging in partnerships for achieving these goals (United Nations General Assembly, 2015; Rosati and Faria, 2019).

In terms of the business community, it is extensively asserted that such community in general and companies in particular have a key role to play in achieving the SDGs goals. In an attempt to engage business to recognize this role, one relevant initiative launched by the UN is their issue of the “Principles for Responsible Management Education (PRME)”. PRME is a UN supported program aiming at integrating the sustainability concept within the educational programs of the business schools. The principles are predicated on the participative role played by business and business school in promoting SDGs, through developing an awareness of, and sensitivity towards, corporate sustainability. While concurrently, some of the thinking underlying

the PRME principle is the view that, business is responsible for much environmental and social damage, they should also take some responsibility for limiting and remedying such damage. Consistent with such thinking, some business managers began to set sustainable performance as a business strategic goal to be implemented through performing sustainably accountable activities and practices. Reasons behind such managers' focus on sustainability, these reasons are their perception of the interaction between value creation and sustainable development, together with the increased financial benefits and/or consequences of sustainable practices (Eugenio et al., 2013; Dissanayake et al., 2016; Rosati and Faria, 2019; <https://www.unglobalcompact.org/take-action/action/management-education>; <https://www.unprme.org>).

Thus today, the concept of Sustainable Development has become a significant issue of focus and concern. There is a growing recognition by firms to achieve the objectives of Sustainable Development, through referring to the concept of Eco-efficiency. Eco-efficiency refers to producing useful practices that embrace competitively priced goods without negatively affecting the relevant environment. This would also require improve their environmental performance. Such performances would complement and serve sustainable development objectives by focusing on reduction of the environmental costs (Gray et al., 1993; Horngren et al., 2006; Hansen and Mowen, 2007; Jackson et al., 2008; Hilton and Platt, 2011; Hansen and Mowen, 2013). This enables some limited consideration of the issue of environmental costs.

Environmental costs are costs incurred to produce, market or deliver a product and/or service that have a negative impact on the environment. These costs ultimately result in a reduced environmental quality. Thus, Ecoefficiency is not to be considered as a matter of charity, luxury or goodwill. Rather, it is a requirement for corporate competitiveness in the market (Gray et al., 1993; Horngren et al., 2006; Hansen and Mowen, 2007; Jackson et al., 2008; Hilton and Platt, 2011; Hansen and Mowen, 2013).

Concurrent with a growing awareness of Sustainability, there has been an insistent requirement for the reporting of that sustainability. This has been particularly so of

corporate stakeholders. Indeed, because of becoming more aware of the importance of sustainable performance, stakeholders have become more demanding of high quality of reporting relevant information, in terms of corporate sustainable performance, based on which they take relevant decisions. Understandably, overtime, the concept of Environmental, Social and Governance (ESG) disclosure started to evolve. These disclosures require firms to report on the non-financial (environmental, social and governance) dimensions of their performance, in a manner that is similar to their annual financial reports (Carels et al., 2013; Brusca et al., 2018).

While a very positive move towards full disclosure of sustainability information, ESG disclosure presently does not totally integrate reporting of comprehensive corporate performance. ESG disclosure in isolation does not enable stakeholders to recognize the link between corporate financial and non-financial performances and thus value creation. This feature sparked an evolution of Sustainability Reporting. Such developments sought to enable an explicit link between accounting and the concept of sustainability. This link has evolved in the early 1990s, more specifically in 1993 by the work of Gray and then in 2002 after the release of the Sustainability Accounting Guidelines at the World Summit on Sustainable Development, that are all yield the concept of *Sustainability Accounting* or *Sustainability Reporting (SR)*. Since then, significant efforts have been exerted in this regards and an important one of them is that by the King committee on Corporate Governance of South Africa. In this context, four main reports are issued by this committee that promoted the Triple Bottom Line (Sustainability) reporting. These reports are King I (1994), King II in (2002), King III in (2009) and King IV (2016) (Lamberton, 2005; Carels et al., 2013).

Sustainability Report can be defined as that public report disclosed to both internal and external corporate stakeholders. It presents a comprehensive picture about the corporate economic, social and environmental effectiveness and efficiency in a balanced way. This definition complies with those of World Business Council for Sustainable Development (WBCSD) and the definition of the KPMG as stated in its

International Survey of Corporate Sustainability Reporting, with the latter emphasizing the balanced reporting of the three sustainability aspects (Daub, 2007).

Sustainability Reports require firms to report on its economic, environmental and social performance to its stakeholders. An organization should report on its environmental and social performance regardless of their impact on the economic position of the organization. Hence, Sustainability Reporting is also occasionally referred to as *Triple Line Reporting (TLR)*. Where, it is concerned with the three dimensions of reporting which are the economic, environmental and social dimensions (Lamberton, 2005; O'Connor, 2006; Daub, 2007; Farneti and Guthrie, 2009; Rowbottom and Lymer, 2009; Hubbard, 2011; Williams et al., 2011; Gond et al., 2012; Joseph, 2012; Roca and Searcy, 2012; Comyns et al., 2013; Eugenio et al., 2013; Lozano, 2013; Lambrechts et al., 2019).

1.2. Problem and Motivation

Having presented the background and context of the essential research issue it is now appropriate to consider the underlying problem that forms the main research motivation. There is a large consent between the companies' managers and stakeholders that the environmental impact of the business operations is linked with the company's profitability. Where, information about the business environmental impact helps the companies' stakeholders to decide on the estimated risks, the firm's value and investment opportunities. There is a robust settlement that, the corporate financial performance is much associated with corporate sustainable performance (Raiborn et al., 2011; Iatridis, 2013; Nobanee and Ellili, 2016; Son-Turan, 2017; Lambrechts et al., 2019).

Regrettably, despite the importance of reporting on the environmental activities of the companies, the best business cases include only partially reported environmental information in their financial statements or in the environmental disclosures. Failing to provide a robust report on the environmental considerations, may well inhibit the

stakeholders' decisions to the short-term financial benefits, rather than taking into consideration long-term benefits and costs (Raiborn et al., 2011; Iatridis, 2013).

Although the concept and importance of sustainability reporting becomes well known among academics and practitioners nowadays, its practice among corporations is still in its infancy and involves confusing issues. The vast majority of the researches, implemented in the area of Sustainability Reporting, are qualitative studies and there are only few empirical studies focused on Sustainability Reporting. Moreover, the empirical studies measuring the sustainability performance of organizations are very few (Bebbington, 2009; Ane, 2012; Roca and Searcy, 2012; Eugenio et al., 2013; Dissanayake et al., 2016; Brusca et al., 2018).

Given the increasing attention afforded to sustainability performance and its reporting, research interest has started to grow in the latest years in these areas within both academia and practical fields. However, most of the studies focus on the quantity of the disclosed sustainability information with less consideration to its related quality (Farneti and Guthrie, 2009; Roca and Searcy, 2012; Rupley et al., 2012; Nobanee and Ellili, 2016). This may have led to deterioration in the quality of the reported information, with many companies disclosing adequate detailed information in terms of quantity but still not reflecting the actual sustainability performance.

Accordingly, there is an insistent requirement for future research on improving and assessing the quality of sustainability reporting. Whereas, given its importance of measuring and communicating sustainable performance, the sustainability reporting, and more specifically its quality level, becomes today a focus subject for research and benchmarking studies. There is a general consensus on that although the number of sustainability reports is increasing, their quality remains poor. It is claimed that, the current quality of *“sustainability reporting is unsustainable”*. Corporations adopt a lower level of quality for sustainability reporting than that adopted by quality assessors and academics (Gray et al., 1993; Hammond and Miles, 2004; Lamberton, 2005; Hubbard, 2011; Rupley et al., 2012; Salama et al., 2012; Comyns et al., 2013; Iatridis,

2013; Abd El-Rahman, 2018; Abd El-Rahman, 2019). This rises question as to, what are the reasons behind the increase in the number of the sustainability reports, which is not associated with a parallel increase in their quality?

Moreover, sustainability and its reporting has been applied, studied and assessed much more in the developed countries than that in the developing countries. In this context, it is found that, the vast majority of the sustainability studies are focused in the countries in Europe and North America. It should be highlighted here that, not surprisingly, these two continents commanding the field of Sustainability Reporting field, are also comprising the largest share the of the Global Fortune 100 (G100) companies, which are the largest companies worldwide. However; on the contrary, application of sustainability practices and more specifically Sustainability Reporting is found to be in very low levels in developing economies, like Sri Lanka and India. In these countries, voluntary, sustainability reporting is still emerging and then found to be disclosing very few information about sustainability practices. An important reason for this could be that, most sustainability rules and regulations are released from European and North American countries (Shamil et al., 2014; Dissanayake et al., 2016; Fritz et al., 2017; Abd El-Rahman, 2018).

Based on the preceding, two insights can be deducted. First, this adds an additional requirement for consideration and assessment of the sustainability practices within developing countries that lag behind the developed countries to a large extent. Second and more importantly, developed countries offer a fertile environment for studying and assessing the quality of sustainability reporting and more specifically the possible factors affecting that poor quality level of sustainability reporting. Whereas, since the vast majority of these countries are already aware of and applying the sustainability reporting, therefore it is more scientifically feasible to assess that reporting and its influencing features. This is unlike the situation of the developing countries, where the main concern currently is an initial awareness and prevalence of the sustainability reporting practices. That is why; the research chooses the G100 companies

that are mostly developed countries to be its empirical domain for testing proposed factors affecting the quality of sustainability reporting, (as detailed in chapter 5).

As being concerned with the “*Quality*” of Sustainability Reports, the research refers to the meaning of that concept as defined by the most considerable party in this regards that is the International Organization for Standardization (ISO). Where, according to the ISO, “*Quality*” of an object, product or service means the set of aspects (elements) that mostly meet the needs of most of its customers and all its users. Based on that definition, the research reviews the literature relevant to its problem claiming that the quality of sustainability reporting is poor/deficient, by presenting evidences that Sustainability Reporting is not meeting the needs of its targeted stakeholders, as follows (ISO, 2018; Anttila and Jussila, 2019).

It is revealed that, corporate stakeholders in the Gulf region are in need of sustainability information that can enable them to take appropriate corporate decisions. Indeed, in some instances, organizations are not providing this information in their annual reports to their stakeholders. Additional evidence points a low level of corporate sustainability disclosures is for all the companies listed in the Gulf Cooperation Council (GCC) financial markets. Similarly, the Abu Dhabi Sustainability Group (ABSG) concludes that, the quality of the corporate sustainability reports is poor in the UAE and that the reports’ content needs to be improved in terms of content and depth. Moreover, the overall level of sustainability disclosures in the commercial banks in Bangladesh is moderate, with more qualitative rather than quantitative information being provided (Momin and Parker, 2013; Dissanayake et al., 2016; Nobanee and Ellili, 2016).

Several weaknesses exist in the corporate reporting on related sustainability issues that lead to the deterioration in the quality level of sustainability reporting. The research examines the most influential weaknesses on the quality of sustainability reporting as follows. Most researches conducted, that studied the quality of the sustainability reporting, focused on the quality of reporting one sustainability dimension only, specifically the environmental dimension. Such a limiting focus does not enable

consideration of the comprehensive sustainability perspective with its three dimensions that are economic, environmental and social. This assures the agreed on loophole existed in the sustainability reporting that is, the conceived excellence in the corporate environmental reporting, without disclosing its related social and economic impacts, e.g. a positive environmental policy that may have negative social and economic impact (Hubbard, 2011; Iatridis, 2013; Samudhram et al., 2016). A further consideration for this issue is given in Chapter 4.

In addition, this issue is assured in the real life, as several corporate stakeholders, both internal and external, seem to place more emphasis on the environmental aspects of sustainability. In a related context, Nobanee and Ellili, (2016) analyze the type of information in the corporate sustainability reports of commercial banks in Nigeria. They find that, those banks are more likely to disclose information about the social dimension of sustainability, like human resources and community services, with a less consideration being given to the economic and environmental dimensions of sustainability Arnold, (2017).

In a similar context, the Asian countries have been much criticized for lacking of both quantity and quality within their corporate sustainability reporting, and China received the largest share of this criticism. In this context, the quality of the environmental reporting in China between 2007 and 2009. The evaluation assessed based on the relevance, reliance, comparability and understandability of the environmental reporting disclosures. The study finds that the quality of the environmental reporting in China is still very lacking, especially in relation to reliance and comparability. The study reveals that out the 110 tested firms in China (across varying sectors); only 5% report environmental information in quantitative form and 17% are reporting environmental information in both quantitative and qualitative forms. These low percentages are very low in terms of quantitative reported information that is more required for quality information within Sustainability Report as it facilitates understanding and evaluation by the corporate stakeholders (Baughn and McIntosh, 2007; Ane, 2012; Dissanayake et al., 2016).

Unfortunately, it is found that the situation is even worse in relation to the educational sector. In the same context, it has been also demonstrated that, the adoption and application of the Sustainability Reporting in universities sector is in its infancy stages and needs significant developments. Ceulemans et al., (2015) find that, the sustainability reports and/or disclosures provided by the universities worldwide is very lacking, in terms of not only quality but also quantity, for example German and Austrian universities. Few universities follow relevant reporting guidelines, mainly the Global Reporting Initiatives (GRI); -relevant details are included in Chapter 2-, particularly in relation to Australian and Italian universities. Moreover; those few universities following the guidelines, are found to be achieving low levels of quality in terms of their Sustainability Reporting, based on the guidelines party (Alonso-Almeida et al., 2015; Brusca et al., 2018).

Providing Sustainability Reports provokes the question as to whether they are being used and relied on. A 2008 study (Raiborn et al., 2011) finds that most of the environmental and social disclosures in the annual report are ignored by analysts, as they viewed them as irrelevant. Moreover, it was reported in 2010 by the United Nations Conference on Trade and Development (UNCTD) that the decisions taken by the stakeholders had become more sophisticated because of the methods used to report on sustainability issues. So, why the sustainability related information disclosed by organizations is not providing the required guidance and assistance to stakeholders to take appropriate decisions?

A survey conducted in 2003 (Iatridis 2013) reveals that 50% of investors surveyed in addition to all the study analysts view sustainability reporting as poor. Modest results have been reached in the Islamic region, regarding its sustainability reporting. Here the evidence suggests that, corporate Sustainability Reporting disclosed by the Islamic banks is inconsistent. Moreover, reports including sustainability disclosures in Malaysia have been found to be very poor, in which they are general, narrative in nature and lack quantitative indicators to a large extent. As being a country located in the Islamic region, Malaysia is still in a developing stage of Sustainability Reporting. Where, evidence finds

that, most Malaysian firms are disclosing sustainability information within their annual reports, with only few firms separately disclosing sustainability reports (Sawani et al., 2010; Salama et al., 2012; Nobanee and Ellili, 2016; Abd El-Rahman, 2018).

Moreover, the sustainability reporting is found to be in a poor position within one of the crucial sectors affecting the sustainable development worldwide that is the transport and logistics sector, in both the academic and practical sides (Lambrechts et al., 2019). On one side, the authors confirmed limited research implemented on the Sustainability Reporting in this vital sector, with most practical illustrations focusing only on the environmental dimension. On the other side, it is demonstrated that, the Sustainability Reporting practice is very lagging behind in the transport and logistics sector. The transport and logistics sector is considered as one of the important sectors. It affects the global sustainability issues, mainly environmental depletion and climate change, and based on that importance, the Global Reporting Initiative (GRI) organization, (the largest, international regulator for the sustainability reporting, as will be explained in the Chapter 2), published a special pilot release for this sector. Despite of these facts, it is found that the sustainability reports from this sector still reflects much ambiguity and inconsistent issues, in addition to being conflicting to some extent with the daily activities of the companies. The researchers find that, only 13% of transport and logistics companies provide sustainability disclosures, which is very low percentage, given its considerable involvement in the sustainability field (Lam and Dai, 2015; Piecyk and Bjorklund, 2015; Björklund et al., 2016; Garza-Reye et al., 2016; Yu et al., 2016;).

Dawkins and Lewis (2003) find that, 54% of investors and 43% of analysts believe that the quality of the information disclosed in the corporate sustainability reports is highly deficient. Several results are revealed in tourism sector (Wijk and Persoon, 2006; Rowbottom and Lymer, 2009). Hooks and Staden (2011) find that, a considerable number of companies in the Centre for Business and Sustainable Development (CBSD) database report poor quality sustainability disclosures. These worrying low levels of Sustainability Reporting rise question as to, what are the corporate features/factors that

lead to the very poor quality level of sustainability reporting among organizations despite of its agreed massive importance?

In a nutshell, it could be concluded that there is a kind of general agreement among academics and practitioners on the deprivation and deteriorating level of the sustainability reporting quality. This leads the corporate stakeholders to take inappropriate decisions, which in turn harm the corporate investment opportunities, profitability and market value. In accordance with the pragmatic approach of research planning and research questions evolved, the research seeks answers to such questions while searching for the reasons behind them. It does so applying appropriate research methods to empirically test/evaluate hypothesized solutions.

1.3. Aim and Objectives

Having regard for all the above, the research seeks to contribute to knowledge by identifying-evaluating features that tend to affect the quality of sustainability reporting. Identification and consideration of such features would point to possible reason(s) behind deterioration in the quality level of Sustainability Reporting and so that highlights areas where improvement should be made. Thus, the research attempts to evaluate the possible impact of particular features (*independent variables*), taking into consideration the existence of other features (*control variables*) –as suggested by literature, on the quality of sustainability reporting (*dependent variable*). Further details for all these variables are given in Chapter 5. Achieving this aim will add to the body of relating knowledge to the assessment of Sustainability Reports.

The research aim is achieved through the following research objectives:

- 1- Developing a Theoretical Foundation for the Quality of Sustainability Reporting (QSR) and the relevant, affecting factors.

- 2- Testing the effect of the Adherence to Regulation (ATR) on the Quality of the Sustainability Reporting (QSR).
- 3- Testing the effect of the External Assurance of Report (ASR) on the Quality of the Sustainability Reporting (QSR).
- 4- Testing the effect of the Independence of Board (IOB) on the Quality of the Sustainability Reporting (QSR).
- 5- Testing the effect of the Type of Information (TOI) on the Quality of the Sustainability Reporting (QSR).
- 6- Conducting a Comparative Analysis between the G100 companies in relation to the Quality of Sustainability Reporting (QSR) and the relevant affecting factors.

1.4. Significance

As the importance of Sustainability issues continues to increase overtime that is particularly true for companies, which hold a major responsibility in this context, the significance of Sustainability Reporting is increasing as well. Such reports are the only channel for comprehensively evaluating the sustainable performance of an organization. However, despite of this significance, there continues to be considerable confusion about and a very poor quality level attached to the Sustainability Reports offered by companies. Consequently, this research seeks to provide insights and possible solutions towards this critical problem by building a conceptual framework for the features that could lead to an improvement of the quality of Sustainability Reporting. In doing so, the research aims to provide an original contribution towards setting objective criteria for evaluating the quality of Sustainability Reports. Having such an objective framework, would contribute to scientific knowledge by developing a relatively robust and objective measure for the degree of the sustainable development worldwide. Such measurement is fulfilled through “Quality” Sustainability Reporting.

1.5. Thesis Outline

In order to achieve the previously mentioned goals of this research, the thesis proceeds as follows:

- Chapter 2: Sustainability, Sustainability Reporting and Global Reporting Initiatives (GRI).
- Chapter 3: Corporate Governance (CG) and Relevant Theories.
- Chapter 4: Hypotheses Development and Relevant Literature Contributions.
- Chapter 5: The Research Methodology and Design.
- Chapter 6: The Empirical Results and Related Discussion.
- Chapter 7: The Research Conclusions, Policy Contributions and Suggestions for Future Research.

The following paragraphs offer an extremely concise description of the contents of each of the above chapters.

Chapter 1 of the thesis “*The Research Introduction*” gives initial exposure to most of the matters exposed above. However, as stated previously, *prior* to conducting the empirical exercises and evaluations, the four identified categories of relevant literature are comprehensively examined, reviewed and evaluated. No meaningful evaluation of Sustainability and/or the quality of Sustainability Reporting should be undertaken without a good appreciation of these matters. So **Chapter 2** of the thesis “*Sustainability Reporting and Global Reporting Initiatives*” is devoted to a robust examination of the concepts of Sustainability and Sustainable Development. The chapter also considers several issues relating to the GRI and IR.

Coupled with the issue of Sustainability Reporting, one must also consider the issue of *Integrated Reporting (IR)*. It envisages active consideration by an organisation of the relationships between its operating/functional units and the (various forms of) capitals it uses or affects. IR envisions a world in which such thinking is embedded in mainstream business practice across all sectors of the economy and is concurrently facilitated by such

reporting. The ultimate intention is that the cycle of integrated thinking and reporting will result in a more efficient, equitable and productive capital allocation, such that it then commences to act as a force for financial stability and *long-term sustainability*. And therein lies the connection between Integrated Reporting and the focus of this thesis. Both these issues are assessed in terms of Sustainability Reporting as it offers an effective and efficient tool for measuring, verifying and assuring corporate, social, environmental and economic performance, and then reporting these on to relevant stakeholders.

Taking regard for the preceding, Chapter 2 provides a discussion of the nature of both “*Sustainability*” and “*Sustainability Reporting*” - particularly the latter which is fundamental to the present research. In part, as stated previously, this is because Sustainability Reporting offers an effective and efficient tool for measuring, verifying and assuring corporate, social, environmental and economic performance, and then reporting them on to relevant stakeholders. In this context, the thesis also considers the UN Global Compact in conjunction with the UN 2030 Agenda for Sustainability Development Goals (2015). Significantly engaging with relevant literature, Chapter 2 also offers some insights into the role professional accounting might play in the research context. Equally, insights as to the challenges relating to the varying qualities of real-world sustainability reporting are sought. Some of these challenges provide the motivation for this research.

However, as indicated earlier, no meaningfully robust discussion of the topic of sustainability reporting and its associated quality could be implemented without referring to the *Global Reporting Initiatives (GRI)* – a feature that is integral to the present research. The GRI was initially developed in 1997 by non-profit organizations with the active support of the United Nations Environment Programme. Today, it is the most globally accepted set of guidelines applied to the reporting of sustainability for companies. Strict adherence to these guidelines certainly helps improve and maintain higher standards of quality of sustainability reporting. Some limited examples of the range of literature evaluated in Chapter 2 include the Sustainable Development Goals (2015) as enunciated by the United Nations, the “*2030 Agenda for Sustainable*

Development” and more importantly for this research: the October 2016 version of the “**Global Reporting Initiative Standards**”. Such standards, in contrast to its earlier versions, now have a modular structure, making them easier to update and adapt. Taking regard for the immediately preceding, Chapter 2 provides a related discussion and is more conceptually based. It helps establish a useful conceptual base and understanding of matters later empirically examined within the thesis.

Theories and theoretical considerations should play an appropriately significant part in the execution of most empirical research. This research is no exception. Thus, the thesis first undertakes and presents a relatively detailed examination of Agency Theory, Stakeholder Theory, Institutional Theory and Legitimacy Theory. Thus, Chapter 3 “Corporate Governance and Relevant Theories” is devoted to an in-depth consideration and examination/discussion of theories that provide a foundation to corporate governance, in general, and to sustainability reporting, in particular. Accordingly, within the frame of governance generally and sustainability reporting particularly, this chapter first discusses and undertakes a relatively detailed evaluation of Agency Theory - often regarded as the principal theory of governance with its emphasis on explaining the principal-agent problem and possibly identifying/justifying the critical need for sound corporate governance.

This is followed by a similar comprehensive discussion and evaluation of three other highly relevant theories – i.e. **Stakeholder Theory**, **Institutional Theory** and **Legitimacy Theory**. In turn, each of these theories are dissected and evaluated within Chapter 3. This is done in an attempt to see how they may offer potential explanations as to why the quality of Sustainability Reporting might vary and what might provoke such variability. Based upon these discussions, it is concluded that **Legitimacy Theory** appears to be the most appropriate and comprehensive theory in terms of explaining variability in practices and standards of corporate Sustainability Reporting. This is because on the one hand, Legitimacy Theory overcomes the main criticism suffered by Institutional Theory i.e. it takes little regard for the quality of disclosed information and tends to focus more on the mimetic action of “copying” assumed best practices of institutional peers. However, on the other hand, Legitimacy Theory subsumes key aspects of Stakeholder

Theory when it takes regard for the needs and concerns of all stakeholders - not only those of shareholders.

Taking regard for the preceding, it would appear that Legitimacy Theory suggests that companies provide fulsome and duly assured sustainability reports, in order to satisfy the needs of all corporate stakeholders and, in so doing, seek corporate social legitimacy in return. Further, much of that theory's thinking accords well with the sentiments of Sustainability Reporting, which itself tends to earn and maintain *Corporate Social Legitimacy* - so helping ensure the entity's continuity in the market place. Accordingly, the thesis adopts *Legitimacy Theory* as the most appropriate and relevant theoretical explanation/justification for variable behavior in terms of corporate Sustainability Reporting and employs it as the basis of its empirical endeavors. As stated, prior to undertaking any hypotheses development and/or statistical analysis or evaluation, the research informs itself via an examination of some relevant theories, as to those features that might help explain, or be associated with, the quality of Sustainability Reports. In doing so, the later empirical exercises become theoretically informed.

The thesis then embarks upon the development of the relevant hypotheses tested, all of which have their argumentation/genesis within *Legitimacy Theory*. This is because, upon due consideration, that theory is selected as the most fruitful operative research theory. Thus, based on relevant theoretical, contextual and professional literatures reviewed – particularly in relation to *Legitimacy Theory* - four research hypotheses are developed. They are developed in order to test four sets of corporate features for their potential association with their quality of sustainability reporting. These theoretical reviews and the development of the evaluated hypotheses are the main issues of **Chapter 4, “Relevant Literature Review and Hypotheses Development”**. These four sets of corporate features are:

1. *Adherence to Regulations (ATR)*
2. *Assurance of Report (ASR)*
3. *Independence of Board (IOB)*
4. *Type of Information (TOI).*

Legitimacy Theory suggests that firms seek out opportunities to signal their “good” corporate citizenship and, in so doing, earn their “social legitimacy”. In general, they take such opportunities to so signal to all their various stakeholders. One obvious means to so signal, would be through the company’s Sustainability (or any similar) Report. As companies are sometimes unable (or in some cases unwilling) to use direct signals of such “good” corporate citizenship, they would do so by injecting particular aspects or features of such “good” corporate behavior and/or nature into their Sustainability (or similar) Reports. The question then arises as to what might be such corporate features and/behaviours? The present research premises its empirical efforts in the belief and expectation that there would be at least four of these i.e. the four sets identified in the previous page. Thus, in turn, the research generates an individual hypothesis for each of these features and/or corporate behaviors. Respectively, these hypotheses are briefly explained in the immediately following paragraphs.

There is some empirical evidence to suggest that firms adhering to regulations (mainly the GRI regulations) while preparing their sustainability reports/disclosures, disclose higher quality sustainability reports than firms not adhering to relevant regulations. Therefore, the *first* research hypothesis is:

H1: That Adherence to Regulations (ATR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

Similar logic applies to the assurance of the Sustainability Report. Here it is argued that corporate sustainability reports assured by an independent, third party, would be of a higher quality than those that are not independently and professional assured. Therefore, the *second* research hypothesis is:

H2: That Assurance of the Sustainability Report (ASR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

In terms of the independence of board, two related measures are used to test this feature. These features are the Independence of the Board members (IOB) and the Independence of the Chair (IOC). There are empirical studies that demonstrate a positive

relationship between the independence of board and the quality of corporate sustainability reports. With reason, it is contended that independent members/directors tend to impose pressure on the managers when reporting on corporate sustainability activities. Further, independent board members tend to be more conscious of, and sensitive to, corporate sustainability opportunities and challenges. Accordingly, there is some basis to argue that an Independent Chairperson will have a positive affect/impact on the quality of that company's Sustainability Report. If so, when there is a duality of office-holding in terms of the positions of the Chairperson and CEO, this may well impair/reduce quality of Sustainability Reporting. Taking regard for such arguments, the *third* set of research hypothesis is divided into two sub-hypotheses:

H3a: That the Independence of the Board (IOB) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

H3b: That the Independence of the Chair (IOC) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

The last feature tested for its association with the quality of sustainability reporting is the type of information disclosed within the report. Based on the relevant literature, this feature is measured through the inclusion of the quantitative information within the report, and not only qualitative, narrative information. In this context it is argued that stakeholders prefer quantitative information as it is more easily understandable, verifiable and comparable. Therefore, the *fourth* set of hypothesis is:

H4: That the Type of information (TOI) conveyed has a significant affect/association on the Quality of the Sustainability Reporting (QSR).

Having developed the preceding research hypotheses taken benefit from relevant contextual, theoretical and professional literatures, the thesis then sets out, in ***Chapter 5: "The Research Methodology and Design"***, to test the preceding hypotheses using a research methodology merely highlighted in the immediately following paragraphs. The empirically focused set of objectives of the research primarily give expression to a ***positivist research philosophy*** together with its associated ontological and epistemological issues. In terms of the empirical set of objectives, the research approach is ***deductive*** – as it generates testable deductions and uses hypotheses to do so. The

research strategy is fundamentally *archival*, with it extracting research data from appropriate reports stored within electronic archives and repositories. The *research method* is primarily *mono-methodical* and *quantitative*. In terms of *research time (frames) horizons*, the research is both *Cross-Sectional* and *Longitudinal*. The five individual year-by-year analyses are conducted at single points in time (and so are *cross-sectional*), while the analyses across the five years straddle the same research cases over several points in time (and so are *longitudinal*).

Some details relating to the collection and analysis of the research data for the empirical evaluation are certainly warranted and these are briefly conveyed in the immediately following paragraphs but are much more comprehensively revealed in the thesis itself. In order to conduct the research, relevant and appropriate (quantitative and qualitative) details are called from a few integral sources. Such sources are primarily (but not exclusively) the actual electronic Sustainability Reports of the relevant companies themselves and their corporate filings resident within a few electronic databases² and those at the offices of GRI.

The empirical analyses are undertaken using primarily *Ordinal Multiple Regressions* where the *Dependent Variable* is the *Quality of Sustainability Reporting* as determined by the individual self-declared scores centrally registered (centrally with the GRI offices) in accordance with the terms of the Global Reporting Initiative. The *Independent Variables* are from the series of potentially relevant variables (as suggested by literature). As previously indicated, these variables spawn linked hypotheses. The variables include relevant degrees of particular governance features, particularly in relation to *Adherence to Regulations*³, *Assurance of Report*⁴, *Independence of Board*⁵ and

² Fortune.com, globalreporting.org, - CorporateRegister.com - and Bloomberg.com

³ Adherence to regulation variable, measured as whether the firm adheres to the GRI standards or not.

⁴ Assurance of report, measured as whether the firm's sustainability report assured by an independent, third party or not.

⁵ Independence of the board variables, measured as the percentage of the independent members within the board of directors.

that of *the Chairperson*⁶ and the precise nature of the *Type of Information*⁷ being reported. Together, all these variables constitute *the research variables*.

Accordingly, using the ordinal dependent variable of the “Quality of Sustainability Reporting (QSR)”, the research applies an *Ordinal Logistic Regression (OLS)* to statistically test the hypothesized relationships. SPSS statistical software is employed to implement these regressions and to statistically analyze and present both the *descriptive* statistics and the *inferential* statistics that are generated from the relevant quantitative data. In addition, in order to develop further insights into the applicability of the research variables across the 19 identified G100 countries, further sets of analyses are conducted.

The empirical results are conveyed in *Chapter 6, “The Empirical Results and Related Discussion”*. Overall, the statistical results conclude that, *Adherence to Regulations, Assurance of Report, Independence of Chair and Type of Information* are significantly associated with the “*Quality of Sustainability Reporting (QSR)*”.

The results indicate that these four factors explain a significant percent of the variability/change in the quality of Sustainability Reporting. These results are obtained while controlling for company size (via *Total Assets*) and company profitability (via *Return on Assets*). The research also confirms that adherence to regulations and the assurance of the Sustainability Report have a highly *significant, positive* relationship with the quality of sustainability reporting.

The statistical analysis also confirms that, as adherence to regulations or the presence of assurance of the SR increases, the quality of sustainability reporting also increases. Furthermore, there is a *significant, positive* relationship between the type of

⁶ Independence of the chairperson variables, measured as whether the separation between the chairman and the CEO exists or not.

⁷ Type of information variables, measured as the percentage of the quantitative information within the firm’s sustainability report.

information and the quality of sustainability reporting. The statistical analysis confirms that, as the type of information increases, the quality of sustainability reporting increases. In terms of independence of the board, two key empirical results emerge. *Firstly*, it is determined that the relationship between the independence of the board members and the quality of sustainability reporting is *not significant*. *Secondly*, it is determined that there is a *significant, positive* relationship between the independence of the board chair and the quality of sustainability reporting. The analysis suggests that, as the independence of chair increases, the quality of sustainability reporting increases. Given these empirical results, adherence to regulations, assurance of the sustainability report, independence of the chair and type of information are all significant factors that must be duly regarded by companies in order to improve the quality of their sustainability reports. That accomplished, each of the empirically focused objectives referred to in the previous paragraphs (Objectives and Methodology), are achieved. In addition, the literature-focused set of objectives, as explained earlier are also accomplished.

Finally, as an overall concluding methodological exercise, the research seeks to acquire a measure of endorsement and validation of its empirical results. This it does within the pages of **Chapter 6, “The Empirical Results and Related Discussion”**. It does so through a discussion with senior corporate governance practitioners in Cairo (from a reputed bank in Cairo), and an appropriate desk-evaluation and comparison of some significant reporters in the UK and other countries of the G100. The Cairo practitioners indicate their views accord with the results of the research and recommend further regulatory procedures to govern corporate sustainability reporting practices in Egypt. In relation to that country, their collective view is that the quality sustainability reporting is patchy and, on occasions, confusing.

Other suggestions that the practitioners offer is a requirement that companies in Egypt **consistently** adopt recognized standards (possibly those of the GRI) when preparing corporate sustainability reports. This should help ensure a minimum quality level for all such reports. They emphasize that these regulations must include the requirement of an external audit in order to add credibility to the sustainability report, as is the case for the traditional annual financial statements. Additionally, they suggest that

an Egyptian regulating body or a branch of the GRI organization in Egypt could regulate this requirement. Interestingly, all these suggestions are very consistent with the conclusions of this research, which strongly suggest that adherence to regulations and the assurance of the report have an enhancing association upon the quality of the sustainability reporting.

In *Chapter 7, “The Research Conclusions, Policy Contributions and Suggestions for Future Research”*, the research provides insights to two sustainability-related dimensions - the *Theoretical Framework* and the *Literature Paradox* of Sustainability Reporting. In terms of the *Theoretical Framework*, the research provides a new contribution to the theoretical literature and framework for sustainability reporting. A scientific upgrading is enabled in the research via an increased understanding of corporate behavior in terms of sustainability reporting practices. In addition, this behavior is evaluated through the theoretical lens of Legitimacy Theory. Indeed, Legitimacy Theory appears to provide some good support and rationale behind the corporate reporting practices of companies and their adherence to the GRI regulations when preparing and presenting their Sustainability Reports. Part of such adherence appears to be linked in and/or associated with the external assurance of those reports and the independence of the board chairperson. Stakeholders now consider such features/practices highly desirable. Thus, a firm seeking to gain and/or exhibit its legitimacy may well wish to adhere to them. For, in the long run, these features/practices may well affect or impact upon its continuity within its surrounding society and environment.

The second dimension of sustainability-related, knowledge value-added in the *Literature Paradox* is also addressed. These efforts suggest good evidence as to Legitimacy Theory pointing towards a significant role being played by the four identified sets of research features, with them assuming the role of research (predictor) variables. To recall, these are:

1. Adherence to Regulations
2. Assurance of Sustainability Report

3. Independence of Board Chair Type of Information
4. Type of Information

Further, in relation to the *Literature Paradox* of Sustainability Reporting, this is reinforced by its wide applicability in various settings, countries and economic conditions. These four factors are confirmed in terms of their significant effect on the quality of sustainability reporting for the G100 companies that operate across countries in the world. As such, the research provides an original contribution in terms of pointing companies towards adopting features that could significantly improve the quality of their SR. In addition, when a good number have done so, this should enhance the quality of SR worldwide.

Drawing on the results of each of the objectives of the research, policy implications and suggestions emerge. This enables one to take reward of that theoretical and value-adding knowledge – an outcome of the research. This is accomplished in ***Chapter 7 “The Research Conclusions, Policy Contributions and Suggestions for Future Research”***.

Firstly, the conformed significant effect of the adherence to the GRI regulations, and part of it is the inclusion of the quantitative measures within the sustainability report, on the quality of corporate sustainability reporting. Given the previous, it is required that following the GRI regulations to be a compulsory requirement by law on the companies while preparing their sustainability reports, at least on those companies listed in the stock exchange market. This requirement can be enacted by an international, professional body of sustainability reporting, like the GRI organization.

Secondly, an international, professional body of sustainability reporting, like the GRI, could also enact the requirement to implement an external assurance for the corporate sustainability reports, at least for those companies listed in the stock exchange market.

Thirdly, the research has implications related to the internal corporate governance. In this context, company management should include within their internal governance and control policies, the requirement for a separation between the two roles of the chair and the CEO. This separation should help ensure the independence of the chair and avoid the

potential conflicts of duality. Equally, this should help maintain increased integrity and legitimacy of the management in terms of their stakeholders, who will likely ascribe more credibility to the reports (particularly the Sustainability Report) that they provide.

Chapter 7 also enables a set of suggestions for further research that flow from the results of the present research. Given the main aim of this research – i.e. to determine features that appear to affect the quality of sustainability reporting, there is certainly potential for further research. Although, the present research uncovers the potential rationale behind a considerable element of the variability in the quality of Sustainability Reporting, there is still a more considerable quantum of that variability that remains unexplained. Accordingly, the following suggestions emerge. *Firstly*, to continue to fill the existing gap of knowledge through the testing of features/factors, other than those that considered in the present research. *Secondly*, it is recommended that future research re-test the relationship between the company size and quality of sustainability reporting, using statistical techniques other than those used in this research. In particular, this is true of the control variable of company size (total assets) because, for this variable, the inferential results seem to contradict results that would be expected from the relevant literature.

Taking regard for the previous presentations, this chapter has provided some introductory thoughts and comments relating to the substance and form of the thesis. The next chapter devotes itself to a detailed consideration of some of its key issues, -i.e. Sustainability, Sustainability Reporting and the Global Reporting Initiative (GRI).

Chapter 2

Sustainability, Sustainability Reporting (SR) and Global Reporting Initiatives (GRI)

Chapter 2: Sustainability, Sustainability Reporting and Global Reporting Initiatives (GRI)

2.1. Chapter Introduction

After setting an introductory background for the topic of interest (Sustainability Reporting), it is appropriate to review the nature of sustainability reporting and associated topics. And that is the purpose of this chapter. Thus, the main aim of this chapter is to provide a conceptual background for sustainability reporting associated fields. To do that, the chapter builds on three main pillars, which are **Sustainability, Sustainability Reporting (SR)** and **Global Reporting Initiative (GRI)**. In which, a review for the broad concept of sustainability is devoted, before going specifically through the reporting on it through the review and explanation of the pivotal concept of sustainability reporting. Furthermore; the concept and practice of sustainability reporting cannot be well discussed and sufficiently understood without, not only referring to but also explaining in details, the GRI body. Where, this body acts as the most internationally recognized reference for sustainability reporting.

Accordingly, the later sections are devoted to a detailed explanation for the evolvement of the GRI organization (**GRI Organization**), followed by an overview for the GRI reporting around the world (**GRI Reporting: An Overview**). Then, an explanation for the five main components that should be included within the sustainability report according to the GRI regulations (**GRI Reporting: Five Main Components of Sustainability Report**). Then, a detailed explanation is provided for the fifth and most important component within the sustainability report that is the performance indicators (**GRI Reporting- Performance Indicators for Sustainability Reporting (SR)**). Finally, the **Chapter Summary** reviews what has been handled within the chapter and, based on the output of this chapter, introduces the next chapter.

Since the focal point of the thesis is Sustainability Reporting, and its empirical aspects are highly inter-linked with them. It is important to be able to identify/appreciate both of these issues. This chapter is an attempt to do so while enabling a better understanding of Sustainability, Sustainable Development and Sustainability Reporting.

2.2. Sustainability

As it is generally held that, economic development increases, the level of environmental deterioration, depletion and climate change increases as well. Managing these environmental issues is increasingly a matter of concern and focus by companies. Additionally, it takes attention of the academics in recent decade. Not only are environmental issues increasingly, but also so are the associated social ones. The growing overconsumption of and inequality in distributing natural resources, while performing economic activities, have led to observed social and environmental crises. This imbalanced performance has induced an interest in and the need for sustainability. For a respect for sustainability, can help towards a balanced economic, social and environmental performance (Ane, 2012; Lam and Dai, 2015; Björklund et al., 2016; Allais et al., 2017; Lambrechts et al., 2019).

Sustainability issues have become part of political agendas both at national and international levels over circa the 30 years. Additionally, sustainability has become a central issue in business and society. Thus, businesses and social institutions had to shift from conventional, economic business models to more comprehensive, sustainable business models that involve not only an economic perspective but also environmental and social perspectives. Despite of a plethora of definitions and approaches for sustainability that have evolved in recent years, the concept of sustainability is still criticized for its vagueness. Consequently, research studies conclude there is still need to remove that vagueness and to develop a clear definition for the concept of sustainability (Glover et al., 2014; Azevedo and Barros, 2017; Missimer et al., 2017; Lambrechts et al., 2019).

When the rate of economic, environmental and social development is low, this result tends in slow progress towards sustainable development. Businesses must bear some responsibility for this slow progress. Such progress calls for clearer guidance and more robust plans set out in a way that allows a highly sustainable performance by businesses' stakeholders across all corporate activities and operations. Again, this emphasizes again the need for a clear identification for the meaning of sustainability, given the varying evolving meanings and guidelines (Henri and Journeault, 2008; Dissanayake et al., 2016; Baumgartner and Rauter, 2017).

Some scholars and practitioners argue that businesses bear the greater responsibility of the sustainability issues and therefore they have the greater role in achieving the objectives of sustainable development. The reason for this claim is that, businesses or companies are involved in the process of manufacturing products and/or services in a direct and indirect ways. So providing resource depletion and deterioration, thus they can achieve sustainable manufacturing and, more comprehensively, achieve a sustainable utilization of resources. As a consequence, this should help towards sustainable performances of the environment and society. Moreover; businesses would be the main beneficiary of the development of the sustainability guidelines and regulations are required to monitor their activities (Hubbard, 2009; Dissanayake et al., 2016).

The word “*Sustainability*” embraces the view that an individual or an entity considers future and others' needs while satisfying today's needs. Sustainability could be considered as the integration of the long-term economic, social and environmental objectives of society. In corporate terms, “Sustainable Development” (SD) is often referred to in a “*Triple Bottom Line*” (*TBL*) context that was originally formulated by Elkington in year 1998. It embraces the process of developing business while considering three sustainability related aspects, i.e. economic, social and environmental issues. In doing so, it targets the needs of present corporate stakeholders without compromising their future and others' needs. Sustainability issues are also referred to as the *three Ps*-**P**rofit, **P**eople and **P**lanet. In this context, Profit refers to the economic side, People refers to the social side and Planet refers to the environmental side (Brundtland, 1987;

Elkington, 1998; Farneti and Guthrie, 2009; Ridley et al., 2011; Roca and Searcy, 2012; Iatridis, 2013; Krechovská and Procházková, 2014; Abd El-Rahman, 2016; Dissanayake et al., 2016; Arnold, 2017; Fritz et al., 2017; Junior et al., 2017; Pope et al., 2017; Abd El-Rahman, 2018; Elkington, 2018; Lambrechts et al., 2019).

Generally, Natural capital of the planet has to be preserved while economic operations are undertaken, -i.e. provided by nature-. Thus, economic activities undertaken should not exceed the maximum limits preventing environment deterioration and the minimum limits for maintaining society acceptance (Pope et al., 2017). However, Allais (2017) claims that, sustainability is not just about preservation of natural resources, but it is also concerned with prohibiting the systematic degradation of the world socio-ecologic (environmental) system and social harmony.

Taking regard for the above, Missimer et al., (2017) states sustainability regarded as the system and the infra-structure preservation, responsible for the elimination of the systematic degradation for the social and environmental systems of the world. This requires a restructuring of these unsustainable social and environmental systems that currently exist. Such restructuring should be done in terms of both the systems' design and the way of operations, so that allowing the targeted innovation and flexibility.

More specifically, a company has to be able to restore and even more importantly to develop the resources it uses in its current and future operations. Thus, sustainability requires that a company has to achieve a balance between the consumption and the preservation of its required natural resources. Achieving this balance will help a sustainable development organizational behavior. This meaning of sustainability is reflected in the concept of eco-capacity of an organization. This concept conveys that a company should have the capacity to save the environment while improving its own operational performance (Dissanayake et al., 2016; Amui et al., 2017).

In terms of the environmental dimension, one could observe that, a robust environmental performance will likely have several positive consequences on an

organization. Accordingly, a strong environmental practices tend to result in reducing environment related risks and liabilities, better access to resources, reduction of the operational and litigation costs and reduction in the cost of capital. Consequently, this leads to an improved financial performance and corporate social image.

Despite of highlighting the importance of maintaining the earth's socio-ecologic system, sustainability does not overlook the significant role of the economic dimension. This dimension as a tool for achieving social and environmental welfare and at the same time, is a result of this welfare. In other words, on the corporate level, economic operations have to be implemented in order to satisfy the needs of the different stakeholders in the society and the environment. At the same time, satisfying the needs of the corporate stakeholders creates a competitive advantage for an organization, attracts financial institutions, investors, customers and other potential users and reduces the probable costs and risks of being unsustainable. A study finds that, 76% of surveyed CEOs estimated an increase in their revenues as a result of integrating sustainability in the core business process (Allais et al., 2017).

Arnold (2017) claims that, Sustainable Development is mainly entitled with establishing a flexible system to the extent that, it allows the maintenance and regeneration of the Earth's Environmental, Social and Economic resources. Such a flexible system should be able to withstand and positively react to differing fluctuating circumstances, and help towards continuous fulfillment of environmental, social and economic duties.

The terms of Sustainability and Sustainable Development are occasionally interchangeably used. According to Brundtland Report, published by the World Commission on Environment and Development (WCED) in 1987, sustainability or sustainable development embraces intergenerational development that meets the needs of the current generations without compromising the needs of the future generations. Thus, both concepts are highly interlinked. In the same context, the scientific term of sustainability is used to represent the situations in which the principles of sustainable

development are put into effect and consequently its goals are achieved. Sustainable development addresses the surrounding social and environmental challenges and develops sustainable solutions to overcome these challenges (Glover et al., 2014; Dissanayake et al., 2016; Samudhram et al., 2016; Baumgartner and Rauter, 2017; Junior et al., 2017; Missimer et al., 2017; Pope et al., 2017).

From the corporate perspective, sustainability could also be considered as a current managerial trend nowadays. From this perspectives, an organization should have those capabilities that enable it to embed sustainability as an integral part of its organizational strategy. This would enable the organization to adapt to dynamic market demands and situations that, in turn, call for the application of innovative practices. This way, sustainability is considered as, not only as competitive advantage, but also a considerable asset that holds remarkable future benefits and the potential to create value for an organization. According to Ernst and Young (2002), senior managers of the Global 1000 companies ascribe to the notion that, the corporate social and environmental performances can have a significant impact on the corporate market value (Samudhram et al., 2016; Amui et al., 2017).

Interestingly, innovation could also be considered as a fruitful result of employing sustainability in an organization. For an organization must apply innovative practices and solutions in order to respond to the fluctuating market situations and continuously changing global stakeholders' needs. Lacking innovation in corporate operations and processes should be seen as a threat to the competitiveness and continuity of the organization in the surrounding environment (Amui et al., 2017).

Sustainability affords several benefits for internal and external corporate stakeholders. For the internal stakeholders, sustainability encourages the hard working, creates an innovative work environment and thus improves the managerial system. Accordingly, sustainability management is responsible for handling all corporate activities that have environmental, social or economic impacts. For the external stakeholders, sustainability increases corporate transparency and accountability of its

activities. In turn, this often leads to an increase in the long-term investments and an increase in the corporate financial value (Nobanee and Ellili, 2016; Arnold, 2017).

In an organization, sustainability aspects should be integrated in the process of setting the corporate strategies and objectives. More specifically, sustainability requires that all corporate value chain activities should fulfill sustainability standards while being implemented. It is important that sustainability be integrated at the early stages of product/service development, because once the design of a product or a service is completed, it will be highly difficult to be altered later on. Based on a global survey, 96% of the CEOs worldwide recommend that sustainability aspects are fully integrated in the corporate strategy (Arnold, 2017; Hallstedt, 2017; Junior et al., 2017).

And since sustainability should be a substantial constituent of the corporate strategy, such strategic reason(s) should justify and more importantly motivate sustainable behavior. These strategic reason(s) should be well-communicated to the corporate stakeholders. Strategic reasons for pursuing a sustainability strategy can be classified as involuntary and voluntary reasons. On one hand, an organization can be driven by normative considerations to follow sustainability strategy. Whereas, an organization can involuntarily be obliged to follow a sustainability strategy as a response to the requirement of the organization shareholders, the requirements of other stakeholders, the requirement to gain and maintain its social legitimacy and/or any other imposed market pressures (Baumgartner and Rauter, 2017).

On the other hand, an organization can totally voluntarily follow a sustainability strategy. And this behavior is mainly based on two motives or reasons. The first strategic reason for having a corporate sustainability-based strategy is the ethical dimension. In this context, sustainability guarantees corporate activities that preserve the environment and comply with social norms. The second strategic reason for having a corporate sustainability-based strategy is the economic dimension. Thus, sustainability results in several economic benefits like cost reductions- in terms of the corporate main

product/service process and the avoided legal penalties-, increased competitive advantage and gaining and maintaining corporate legitimacy (Baumgartner and Rauter, 2017).

Businesses should integrate sustainability not only in their operations, but also in the whole business process. Sustainability aspects should be reflected in all the supply chain activities, both on the organizational level and the product level. This is called sustainability supply chain management (SSCM) or green supply chain management (GSCM). On the organizational level, the assessment process of the organizational activities should be implemented based on sustainability criteria. On the product/service level, sustainability criteria should be considered in the implementation of the whole process, starting from the product/service design process till reach the after-sale customer services (Fritz et al., 2017; Lambrechts et al., 2019).

To reach this stage of full sustainability integration in all corporate activities, an organization has to develop its product/service innovation process based on sustainability criteria. Some companies use creative ideas in order to encourage the sustainability performance, like developing a sustainability-related web community for sharing sustainable issues and arranging a sustainability-related competition for challenging sustainable ideas (Arnold, 2017; Hallstedt, 2017).

While setting the requirements list for a product/service, sustainability requirements should get the same weight as the traditional requirements, like cost and quality. This can help ensure, to a large extent, avoiding or even reducing future negative consequences and costs, resulting from unsustainable activities. Moreover, much time and effort will be saved, that would have been wasted on developing solutions and corrective actions to respond to any corporate negative social or environmental impacts (Hallstedt, 2017).

It is agreed that, the higher the level of involving corporate stakeholders in the sustainability integration process, the better the level of corporate sustainability performance. An important factor that significantly enables in the achievement of the

sustainability objectives in an organization is the engagement of corporate stakeholders', mainly corporate suppliers and customers. In particular, this would be in the process of developing a sustainability-based strategy. Involving corporate suppliers and customers helps companies to efficiently respond to the evolving market needs in a sustainable way and maintain sustainability knowledge (Arnold, 2017).

Although knowledge is not a sufficient guarantee for a sustainable corporate performance, it is a basic requirement for establishing sustainability-based operating system. Whereas the first step in the development of a sustainable operating system is to define the meaning of the sustainability for the company, this meaning has to be well understood by the corporate staff. A good identification and understanding of the sustainability concept for the company offers the base for the further determination of the techniques to be used to implement it and the convenient measures, i.e. indicators, to be used to measure and evaluate its implementation (Hallstedt, 2017).

Organizations should hire and maintain staff who are sufficiently knowledgeable so as to be able to establish, project, implement, monitor and analyze sustainability strategies and objectives. Corporate staff has to be proactive in terms of sustainability issues and willing to be involved in new ideas and innovative approaches. They should also have the ability to evaluate activities after their implementation. Another important function for sustainability knowledgeable staff members is the communication/reporting of sustainability-related corporate issues to both internal stakeholders and external stakeholders, especially customers and suppliers (Baumgartner and Rauter, 2017; Hallstedt, 2017).

Measurement of sustainability performance requires the usage of a sustainability evaluation tool that can maintain a sustainable performance, especially the development of sustainable product or service. Newly evolving frameworks and techniques for sustainability assessment aims not only at evaluating the corporate activities after they have been implemented to provide feedback and take corrective actions if required. But also, those sustainability assessment frameworks and techniques aim at predicting the

potential impacts of different activities before their implementation on the corporate sustainability aspects. This function of pre-implementation sustainability assessment is called, sustainability appraisal (Arnold, 2017; Pope et al., 2017).

The preceding sections have dwelt primarily on the nature of sustainability and its application within a corporate context. The next section focuses on the twin issue of sustainability reporting.

2.3. Sustainability Reporting (SR)

Traditionally, the financial accounting approach states that firms are concerned with their capital providers, mainly investors and creditors. Thus, among all their stakeholders, a firm is continuously working on satisfying the needs of its capital providers. Capital providers are interested in the economic activities that affect the firm's capital position and tend to disregard the impact of these economic activities on the surrounding society and environment. Based on that approach, the firm provides traditional financial reports that include adequate information about the firm's economic activities and performance, in a way that satisfies the needs of its capital providers (Samudhram et al., 2016).

The technological development that is rapidly evolving in recent decades has led to the remarkable economic growth witnessed, specifically in the developing countries. However, this economic growth has resulted in considerable environmental and social issues, mainly because of the consequent environmental destruction, degradation and global warming. Several authors agree that, in order to handle these environmental and social issues at the macroeconomic level, they have to be firstly handled at the microeconomic level, which is in this situation the firm level (Dissanayake et al., 2016; Samudhram et al., 2016).

Within the firm level, sustainability reporting that is reporting within the TBL context, discussed in a previous section of this chapter, can offer an effective solution that

is capable of dealing with the firm economic, social and environmental performances and issues. According to the systems approach, handling sustainability issues at the activity level fosters their handling of these issues at the firm/micro level, in turn this then enables handling these issues at the national/macro level. Consequently, the sustainable development will be potentially achieved on the global level. This can be summed up by the fact that, integrated, sustainability reporting provides the foundation for all the factors that enables a firm to create value to its stakeholders over time. Therefore, it can be concluded that, sustainability reporting is the end-point of the mechanism that encourages, helps, achieves and reports activities in terms of the global goals of sustainable development (Adams, 2015; Samudhram et al., 2016; Brusca et al., 2018).

There has been a recent belief within the business environment that, financial information does not adequately reflect the different dimensions/impacts of all corporate activities. So, additional, non-financial measures are required to provide a comprehensive picture about a company's performance. In order to do so, companies disclose information in their relevant reports about social and/or environmental concerns. Such reports are known as sustainability reports. Although this non-financial information is often not required by regulations, companies voluntarily seek to disclose it, in the belief that such disclosures improve the accuracy and therefore the usefulness of the corporate performance information (Ballesteros, et al., 2017; Dissanayake et al., 2016). Not to mention other tangible and intangible benefits.

Awareness of reporting in terms of corporate sustainability performance has increased in the last decade. Indeed, in the last few years, companies are increasingly seeking to provide social and environmental disclosures to their stakeholders. In part, this is a response to stakeholders' demands regarding corporate performance aspects, when they take their corporate decisions. And since stakeholders should be nuanced by sustainability matters and at the core of the corporate strategy, their demands have to be satisfied. Consequently, social and environmental aspects of sustainability have become important indicators of the corporate performance, together with the economic factor, that all should be disclosed. This increased interest in sustainable development has led them

to the adoption of sustainability reporting on its three dimensions, instead of mere “social and/or environmental” reporting (Farneti and Guthrie, 2009; Shamil et al., 2014; Junior et al., 2017).

Generally speaking, an effective corporate reporting should clearly represent a corporate strategy and its implementation through certain objectives that should in turn be based on the current market condition and demands. Market demands are currently affected by economic settings that are involved in the social settings that are also limited with the environmental settings. Then, a robust report should be a reflection of the corporate performance in regards to those three market factors. More specifically, these requirements of corporate reporting should be disclosed to the stakeholders in the form of performance indicators of the previously mentioned three market settings, representing sustainability. The performance indicators should be readily understandable and measurable, and be supportive of the decision making process (Dissanayake et al., 2016; Junior et al., 2017).

The existence of performance indicators is a fundamental cornerstone of reporting on corporate economic, social and environmental performances to the stakeholders for particular reasons. As stakeholders seek corporate transparency, performance indicators increase transparency about the corporate internal processes, so that increases understandability of and facilitates analyzing the corporate sustainability performance. Moreover; sustainability performance indicators overcome the shortcomings claimed by the stakeholders regarding the traditional financial reporting. They fulfill the stakeholders’ demand for the non-financial information about an organization, as well as they provide the link between these performance indicators and the corporate strategic objectives, which is missing in the traditional reporting (Perrini and Tencati, 2006; Adams and Frost, 2008; Eljido-Ten, 2011; Dissanayake et al., 2016; Junior et al., 2017).

Sustainability performance indicators show and magnify the link between sustainability inputs, efforts exerted by an organization and the outputs achieved. They demonstrate the relationship between corporate financial and non-financial performances,

indeed, that financial success should likely mirror the results of non-financial, sustainable activities. Curiously, despite the fact that some performance indicators could be considered to be non-financial in nature, they lead to the achievement of the corporate financial outcomes. Performance indicators may focus on the lead in measures, for example required number of products, which is a non-financial measure. While the lead out is a financial measure, for example the net profit. Accordingly, sustainability performance indicators provide a continuous monitoring and assessment of corporate sustainable performance. This format of corporate reporting embraces sustainability reporting (Braam and Nijssen, 2004; Davis and Albright, 2004; Roca and Searcy, 2012; Dissanayake et al., 2016; Son-Turan, 2017; Lambrechts et al., 2019).

Sustainability Reporting (SR) requires that an entity reports meaningfully on its economic, environmental and social performance to its internal and external stakeholders, regardless of their impact on its economic position. Sustainability reporting is a way to hold an organization accountable for its activities so that improves its sustainable development performance. In other words, sustainability reporting helps the organization in strategically managing the three components of sustainability (Comyns et al., 2013; Abd El-Rahman, 2016; Calabrese et al., 2016; Baumgartner and Rauter, 2017; Abd El-Rahman, 2019).

Managing the three components of sustainability requires the existence of a robust tool that is capable of developing strategies to link across the corporate economic, social and environmental activities and the strategic objectives of the company. Such a tool is found in sustainability performance indicators, explained previously. They are an essential building block and the main feature that distinguishes sustainability reporting from traditional reporting. The employment of sustainability performance indicators insures the balance across the corporate financial stability, eco-efficiency and socio-efficiency (Cohen et al., 2012; Dissanayake et al., 2016).

As an important prevailing and widespread practice in the corporate field, SR has been grasping attention in both fields of research and the practical application. In terms of

practical application, the practice of sustainability reporting is growing among firms worldwide, in terms of the number of companies adopting and applying it and the comprehensiveness of the information included within its structure (KPMG, 2013; European Commission, 2014; Dissanayake et al., 2016; Thijssens et al., 2016).

SR is mostly considered to be a voluntary corporate practice, as even today there is mostly no obligation by law in most countries to provide a sustainability report. Despite the absence of obligatory requirements to disclose sustainability reports (even in the presence of some governmental interferences in some countries, especially in the region of the European Union), a fair number of firms are reporting voluntarily, to a large extent, on their sustainability activities. And, inspired by that appealing performance from the corporate (practical) side, the research field in SR has been flourishing in the last decade (KPMG, 2013; European Commission, 2014; Dissanayake et al., 2016; Thijssens et al., 2016).

As such, it is not usual that corporate managers usually provide the sustainability disclosures voluntarily. This behavior is justified by the managers, believing in their considerable role in increasing attention and fostering a positive attitude towards the company. This is partly achieved through enhancing the transparency and accountability of its operations towards current and potential corporate stakeholders. Transparency when communicating corporate sustainability practices to stakeholders through sustainability reporting leads to increasing the credibility of the corporate social and environmental commitments, as well as enhancing the long term process of value adding (Calabrese et al., 2016; Nobanee and Ellili, 2016; Arnold, 2017; Junior et al., 2017). It is this reporting that, in essence, forms the contextual background for the intended research.

SR is occasionally used by organizations as a tool to gain legitimacy and acceptance by the society and to respond to the concerns of the different stakeholders. Thus, sustainability reporting is seen as a response to the pressure exerted by society on firms to implement their activities in a way that is accepted by and in accordance with the norms of that society. So, corporate activities and practices meet the social expectations

required to gain and/or maintain legitimacy (Daub, 2007; Roca and Searcy, 2012; Comyns et al., 2013; Iatridis, 2013; Shamil et al., 2014).

The objective of high quality sustainability reporting should be to provide accurate and credible information about the environmental and social activities of the organization regardless of their impact on the economic position of the organization (Comyns et al., 2013; Lanis and Richardson, 2013). For example, the sustainability disclosure by the oil companies increased after the case of Exxon Valdes oil spill and the sustainability disclosure by the chemical companies increased after the case of Bhopal leak.

Organizations offer sustainability disclosures as a measurement of their contribution towards sustainable development. As stated, such sustainability disclosures involve reporting on corporate economic, social and environmental activities. And, as also stated, these activities form the three dimensions of sustainability reporting. Such comprehensive sustainability information helps in better decision making for all corporate stakeholders, as sustainability disclosures are reported to both corporate internal and external users. Moreover, reporting on those three dimensions of sustainability determines the extent of the sustainability reporting quality as they are the measure for the quality of the corporate sustainability performance (Nobanee and Ellili, 2016). And it is this quality that is a focal point of the present research.

In addition to assessing the current sustainability performance of the corporation, SR is a responsible way for communicating information about the corporate sustainability performance and progress to corporate stakeholders. In this context, the various corporate stakeholders are engaged in achieving the common goal of sustainable development through the practice of sustainability reporting. Thus, sustainability reporting should be viewed by both scholars and stakeholders as a means and not a goal. For the objective of the SR is not the reporting practice itself, but that practice is a means for achieving the broad goal of value creation for stakeholders, and in turn, sustainable development is

achieved (Ahmed and Sundaram, 2012; Gond et al., 2012; Iatridis, 2013; Lozano, 2013; Dumay, 2016; Fritz et al., 2017; Brusca et al., 2018).

It is appropriate to recall that, the goal of value creation is well embedded within the firm's everlasting doctrine, i.e. the financial value creation, through the achievement of profits. Nevertheless, SR broadens the notion of firm value creation to include social and environmental values, as opposed to mere financial value. SR intends to change the way of thinking for the managers and board members towards the concept of value creation, away from the excessive concentration on financial value and satisfying only the needs of the financial stakeholders (investors), and instead add to the social and environmental values while satisfying the needs of all corporate stakeholders. SR may be considered as the basis for planning changes required to improve the sustainability performance of the organization. SR may also be regarded as a competitive advantage for the reporting organization. Where, stakeholders are more likely to trust and to invest in such organizations that report on business environmental and social issues (Gray et al., 1993; Ahmed and Sundaram, 2012; Gond et al., 2012; Iatridis, 2013; Lozano, 2013; Adams, 2015; Flower, 2015; Dumay, 2016; Fritz et al., 2017; Brusca et al., 2018).

As previously explained in the previous part of sustainability, focusing on the environmental and social aspects, sustainability does not overlook the economic aspects and its importance in enabling a sustainable performance. Based on that, sustainability reporting is a crucial aspect of sustainability. Indeed, sustainability reporting should reflect all sustainability related issues, including corporate financial benefits, such as financial stability, profitability and liquidity. Where, it should be emphasized that, financial benefits should be the result of engaging with and applying corporate sustainability activities (Baumgartner and Rauter, 2017).

In the same vein, several empirical evidences have been reached, in relation to the association between corporate sustainability practices, -mainly SR, and the improvement in the corporate financial performance (Son-Turan, 2017; Lambrechts et al., 2019). For example, it is found that, the increase in rate of the sustainability reporting disclosed by

conventional banks listed in the UAE financial markets, as opposed to listed Islamic banks, leads to a considerable improvement in the performance of these banks. More specifically, a positive association between the corporate sustainability reporting and the corporate financial performance is clearly identified (Nobanee and Ellili, 2016).

Despite the massive benefits of SR, as previously explained, its diffusion is variable among countries. Where, it is found that, sustainability reporting is largely and rapidly diffused in developed countries. However; although they comprise the vast majority of the world's sustainability issues, developing countries still lag behind the developed countries in terms of sustainability practices (Burritt and Schaltegger, 2010; United Nations, 2013; Dissanayake et al., 2016).

As developing countries contain most of the world's population, it is not surprising that they also contain most of the economic, social and environmental problems. These reasons increase the need for the rapid application of a robust sustainability that is in turn guaranteed by a robust sustainability reporting. Moreover, this relation, existed between sustainability and its reporting has been reflected in the research field. Where, several sustainability reporting researches have been undertaken in developed countries, as opposed to developing countries (Burritt and Schaltegger, 2010; Dissanayake et al., 2016).

More specifically, there is a remarkable observation by both the research and practical fields regarding the diffusion of SR in the Asian countries. This observation finds that the application of the SR practices is very low and still in its infancy among most Asian companies, with few exceptions, such as Malaysia, India, China and Bangladesh. Within these few countries, SR is practiced to some extent, with them being generally restricted to specific fields, such as, steel, oil and chemical industries (Baughn and McIntosh, 2007; Sawani et al., 2010; Fifka, 2012; Dissanayake et al., 2016).

It is also found that, most of the SR applied in these industries is in the form of sustainability disclosures integrated within the corporate annual report, rather than a

standalone sustainability report. The dominant justification claimed by these companies' managers for that behavior is the cost required to be incurred by their companies in order to acquire the additional information required to prepare that separate report. Thus, as a general conclusion, the application of SR in the Asian countries is much lower than that in the European countries (Baughn and McIntosh, 2007; Md. Habib-Uz-Zaman et al., 2011; Fifka, 2012; Dissanayake et al., 2016).

This section devoted attention to the practice and nature of sustainability reporting. It also considered particular aspects relating to research across particular countries. The next section focuses on the global regulations that mainly govern the practice of sustainability reporting. These global regulations are the Global Reporting Initiative (GRI).

2.4. Global Reporting Initiative (GRI)

Based on the sustainability assessment mentioned in the first section of this chapter and its importance in evaluating the different activities, for their achievement of the corporate targeted sustainability objectives, both before and after implementation, reporting on sustainability performance in accordance with the *Global Reporting Initiative (GRI)* is considered as the core of that assessment. Whereas, corporate sustainability performance has to be reported and evaluated against certain sustainability criteria that should be globally accepted, and this is represented in the GRI guidelines. Currently, GRI is the international reference and proxy of sustainability corporate performance and its evaluation for organizations worldwide (Brown et al., 2009; Adams, 2015; Dissanayake et al., 2016; Thijssens e al., 2016; Farooque and Ahulu, 2017; Junior et al., 2017; Pope et al., 2017; Brusca et al., 2018; Lambrechts et al., 2019).

2.4.1. GRI Organization

However, merely referring to criteria is not sufficient when implementing the sustainability assessment process, in which, criteria include desired objectives towards

achieving certain sustainable performance without providing a quantifiable measurement for those objectives that can indicate their level of achievement. Consequently, the existence of performance indicators is a substantial requirement when assessing the corporate sustainability performance. *Performance Indicators* include quantifiable measures for the fulfillment of desired criteria, in order that corporate sustainability performance can be projected, measured, compared and analyzed for each accounting period. Such sustainability performance indicators are key features within the GRI that are widely accepted as sustainability performance measurements worldwide (Baughn and McIntosh, 2007; Brown et al., 2009; Dissanayake et al., 2016; Farooque and Ahulu, 2017; Hallstedt, 2017; Lambrechts et al., 2019). Section 2.4.4. later in this chapter is dedicated to a detailed explanation of the performance indicators, in the last part of this chapter.

The GRI is considered to be the most generally and globally accepted and applied guidelines for corporate sustainability reporting. Moreover, GRI acts as the most credible reference base applied for disclosing any sustainability information (Wijk and Persoon, 2006; Brown et al., 2009; Farneti and Guthrie, 2009; Hubbard, 2011; Joseph, 2012; Roca and Searcy, 2012; Iatridis, 2013; Lozano, 2013; Calabrese et al., 2016; Dissanayake et al., 2016; Thijssens et al., 2016; Nobanee and Ellili, 2016; Farooque and Ahulu, 2017; Junior et al., 2017; Zenya and Nystad, 2018; Lambrechts et al., 2019).

Although, it is not a compulsory requirement for firms to adhere to the GRI while providing their corporate sustainability reports, -but it is a voluntary behavior-, the GRI has the widest spread in the world among both theoretical and practical fields. According to KPMG (2008), the GRI index, more specifically the **G3** version of the GRI released in 2006, was adhered to by 79% of the top global 250 (G250) companies and 69% of the top 100 (G100) companies worldwide, that are increasing by time. In addition, the GRI is currently applied in more than 40 countries and endorsed by more than 24 Stock Exchange markets worldwide, -with them being as the regulating guidelines for any sustainability disclosure. Moreover, beside its practical application, GRI is applied as a proxy in the academic and research contexts while studying the sustainability

performance of the organizations in different sectors (Hubbard, 2011; Dissanayake et al., 2016; GRI, 2016; Junior et al., 2017; Lambrechts et al., 2019).

As an independent, non-profit organization, GRI started its working in 1997 in Boston, in USA, when it emerged from the coalition of two US non-profit organizations, which are the Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute. Where, these two organizations have been primarily responsible for funding and administering the GRI project. As targeting all types of organizations, GRI is an international independent organization that aims at helping business and governmental organizations show the impacts of their activities in terms of certain critical sustainability issues, like climate change and human rights. Based on the GRI database, GRI includes Universal standards and Topic-specific standards. Where, universal standards include general reporting guidelines that could be followed and applied by almost all corporate types and forms. In addition to such general corporate sustainability initiatives, the GRI comprises also instructions that are customized for specialized industry fields, taking particular regard for industry specific components to be included within their reports (Dissanayake et al., 2016; Junior et al., 2017; <http://www.globalreporting.org>).

The GRI is considered as the most comprehensive repository of SR guidelines and regulations. Whereas, prior to the development the GRI in its current entire form, there have been earlier efforts exerted towards SR by different parties worldwide. These efforts have resulted in the development of some relevant guidelines and regulations, such as the Kyoto Protocol, the Montreal Protocol, International Organization for Standardization's (ISO) and the World Business Council on Sustainable Development Greenhouse Gas Protocol (WBCSD GHG Protocol). Many of these protocols are already referenced within the GRI guidelines, in a way that compliance with GRI ensures compliance with these protocols as well. In other words, adherence to the GRI leads to achieving the objectives of both the previously developed sustainability guidelines, in addition to other guidelines uniquely developed by the GRI (Hedberg and von Malmborg, 2003; Dissanayake et al., 2016).

By providing the criteria and performance indicators required for a qualified SR that reflects the relevant performance, GRI notably assists in pinpointing the deficient areas in terms of the corporate sustainable activities. Samudhram et al. (2016) argue that, in order to overcome a certain problem, the problem itself has to be well determined firstly. By requesting and evaluating the implementation of particular economic, environmental and social standards, GRI reveals the corporate deficiencies in terms of its economic, environmental and social performances. These deficiencies could not have been revealed without reference to certain standards. Whereas, when a corporate develops an appropriate plan to overcome these deficiencies. This consequently leads to an improvement across the three dimensions of the sustainability performance of the corporation.

Understandably, the GRI claims that, it aims at increasing the transparency of the organizations in terms of their business environmental and social impacts. The GRI believes that improving the quality of this information leads to shifting the organizations into more sustainable ones. The objective of SR is to provide information that enables the corporate stakeholders to evaluate the organization's sustainability performance and the GRI provides the set of the qualitative attributes for much accounting information that are capable of measuring the sustainable performance of the organization. As, in addition to the economic metrics included, the GRI offers a wide range of environmental and social metrics from which a firm could select those metrics that enable it to meaningfully report on its specific environmental and social activities (Lamberton, 2005; Hubbard, 2011; Joseph, 2012; Roca and Searcy, 2012; Samudhram et al., 2016).

Despite that the GRI's main function is describing the economic, social and environmental impacts of the corporate activities. This function is implemented to achieve the overall goal of the GRI, which is to improve the quality of the SR on a global level. Whereas, establishing a unified reference for sustainability reporting enhances the robustness of the report components, the consistency among the reporting companies and consequently maximizes the utilization of the report (Junior et al., 2017).

2.4.2. GRI Reporting: An Overview

According to the KPMG 2011 benchmarking report on SR, a significant number of the companies are following the GRI in preparing their sustainability reports. In comparison, the KPMG study in 2008 revealed that, many of the companies in risk sectors suffer a great tardiness in reporting on the climate change risk, although it is one of the greatest environmental problems worldwide. However, the study realized that, more than three quarters (79%) of the top global 250 (G250) companies were providing sustainability reports. In addition, Corporate Register database, the largest store of sustainability reports, includes more than 78,000 sustainability reports, and that number is expected to increase over time. Furthermore, according to the GRI database, 92% of the largest 250 companies worldwide are reporting their related sustainability issues (Sherman and DiGuilio, 2010; Hubbard, 2011; Dissanayake et al., 2016; <http://www.globalreporting.org>; <http://www.corporateregister.com/>).

Information reported in the sustainability reports must serve the needs of the external stakeholders specifically and help them to take proper decisions. External stakeholders are mainly concerned about the comprehensive picture of the company in dealing with the sustainability impacts of the business operations. This would include the related future strategies and plans in addition to the current and past operations. According to the GRI, information disclosed in the sustainability reports must be understandable to moderately intelligent readers, consistent, and comparable between different periods inside the same company and between different companies. Moreover, information included in the sustainability report has to be relevant to the decisions of the stakeholders, who need such information on a timely basis and reliable, which is accurate and unbiased (Gray et al., 1993; Hooks and Staden, 2011; Hubbard, 2011; Raiborn et al., 2011; Ane, 2012; Iatridis, 2013).

Based on the GRI standards, the sustainability report should fulfill certain purposes. Mainly, the sustainability report is the tool that assesses and discloses the accountability of an organization for its activities, towards both internal and external

stakeholders, regarding the achievement of the sustainable development goal. In doing so, the sustainability report should provide a balanced view on the corporate performance in relation to the three sustainability aspects (economic, social and environmental), with the highest transparency. This required transparency consequently entails the disclosure of both positive and negative corporate contributions towards sustainability (GRI, 2000; GRI, 2006).

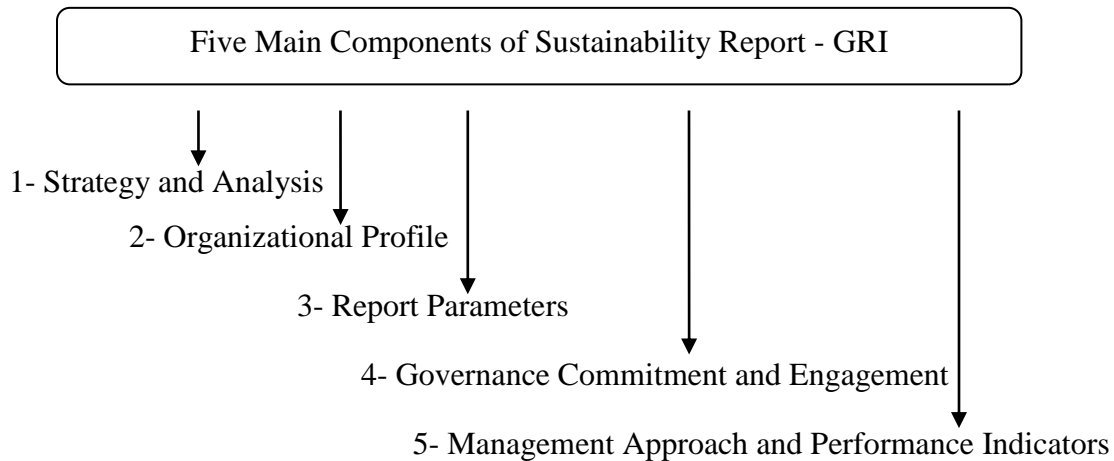
Among the other main purposes that the GRI requires to be achieved by the sustainability report are the following three purposes. Firstly, the sustainability report should allow the benchmarking, and thus the evaluation of, the corporate sustainable performance against relevant laws, standards or even voluntary sustainability initiatives. Secondly, the sustainability report should demonstrate the mutual influences between an organization and the expected goals of sustainable development, in a way that shows how an organization's performance is influenced by these expectations on one side, and how the organization influences these expectations on the other side. Thirdly, the sustainability report should enable the comparison of sustainable performance within an organization and with its peers over time (GRI, 2000; GRI, 2006).

2.4.3. GRI Reporting: Five Main Components of Sustainability Report

In order to achieve the previously explained objectives of the GRI, and more specifically to fulfill the required characteristics of the sustainability information reported by firms, the GRI establishes a set of guidelines for corporate SR. Whereas, there are several versions of reporting guidelines have been released by the GRI since its inception, as each version is intended to cover a new aspect(s) of sustainability that has not been covered in the previous version and/or handle a problem(s) that is evolved in the previous version. However; as a common guideline in all the GRI versions, the sustainability report should generally cover five main categories of information, which are: 1. *Strategy and Analysis*, 2. *Organizational Profile*, 3. *Report Parameters*, 4. *Governance Commitment and Engagement*, 5. *Management Approach and Performance Indicators*, as shown in Figure 2.1. Given that, these categories involve a wide range of aspects,

therefore a sustainability report includes several types of information (GRI, 2000; GRI, 2006; Daub, 2007; Comyns et al., 2013; GRI, 2016).

Figure 2. 1 Five Main Components of Sustainability Report- GRI Content Index



1- Strategy and Analysis

The first component, that is the *Strategy and Analysis*, is concerned with the high strategic level of the organization's perception towards sustainability, preceding to the detailed sections of reporting in the rest of the report. This category is intended to focus on the strategic sustainability topics for the organization, rather than simply summarizing the contents included within the report. Two main elements should be included in this category according to the GRI. The first element is the statement of the top management, represented in the senior decision makers, like the chairman or the CEO. The statement includes the firm's vision and mission towards achieving the sustainability goals, together with relevant strategies, to manage key challenges faced to achieve those goals over the short-term, medium-term and long-term (GRI, 2006; Comyns et al., 2013; GRI, 2015).

The second element describes the key sustainability impacts, risks and opportunities, which are viewed from two perspectives, as follows. From one perspective, there are key impacts, risks and opportunities evolving from the influence of the organization on the relevant sustainability aspects. On the top of them are the impacts of the organization on the stakeholders, such as the stakeholders' rights according to both

the national and international laws. This second element should present the approach of the organization in handling these issues, as well as the progress achieved (whether positive or negative) by the organization throughout the reporting period (GRI, 2000; GRI, 2006; GRI, 2015).

From the other perspective, there are key impacts, risks and opportunities evolving from the influence of the sustainability trends on the organization. Where, this perspective focuses on the key impacts on the long-term potentials and the financial performance of an organization. A description for the sustainability trends is presented, in addition to a prioritization for these trends, risks and opportunities according to their extent of relevance to the organization's long-term strategies, competitive advantage(s) and more importantly the financial value drivers (quantitative and/or qualitative). Moreover; this element should also present a summary for the organization's performance regarding these issues throughout the reporting period and the future goals set to improve the performance in the next reporting period (GRI, 2000; GRI, 2006; GRI, 2015).

2- Organizational Profile

The second component that is the *Organizational Profile*, which mainly includes ten elements, as follows. First, includes the Name of the Organization. Second, includes the Primary Brands, Products and/or Services, in which the organization should mention the extent of its role in providing that product and/or services and the extent to which it depends on outsourcing for that purpose. Third, includes the Operational Structure of the Organization, in which the organization should present its organizational chart in a way that shows its main departments and divisions, operating entities and subsidiaries and joint ventures, if any. Fourth, includes the Location of the Organization's Headquarters. Fifth, includes the Number of Countries where the organization has Operations, as well as the names of the countries that comprise the major operations of the organization in general or specifically in relation to the sustainability aspects covered in the report (GRI, 2006; Comyns et al., 2013; GRI, 2015).

Sixth, includes the Nature of Ownership of the organization and its Legal Form, for example a sole proprietorship, partnership or corporation. Seventh, includes the Markets Served by the organization, which consists of the geographic distribution of the organization markets, the sectors in which it is operating and the types of customers it serves. Eighth, includes the Scale of the Organization and this section can be divided into two types of information that are required and additional, as follows (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

Whereas, an organization is required to provide information about its number of employees, its quantity of products and/or services, the net sales achieved in case of private organization and the net revenues achieved in case of public organizations and amounts of equity and debt in case of private organizations. In addition, it is preferred, but not required, to provide additional information about the scale of the organization, such as, total assets, shareholders with the highest ownership percentage and information broken down by region and/or country regarding net sales or revenues, costs and employees (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

Ninth, includes the changes happened in the organization during the reporting period. These changes are related to the location and/or the nature of the operations, such as new expansions, openings and closures, and the changes related the capital or ownership structure, such as the change in the share percentage structure, and the raise of other capital formations. The tenth and last element within the organizational profile includes the awards received by the organization during the reporting period (GRI, 2000; GRI, 2006; GRI, 2015).

3- Report Parameters

The third component, that is the *Report Parameters*, mainly includes four categories, which are the Report Profile, the Report Scope and Boundary of coverage, the adherence to a GRI Content Index and the Report Assurance. Where, the Report Profile states the reporting period for which the information is disclosed, the length of the

reporting cycle within the organization, such as annually, semiannually, quarterly, etc., the date of the most recent previous sustainability report disclosed by the organization, if any and the contact reference in case of any required questions regarding the contents of the report. The Report Scope and Boundary of coverage offer guidance on the contents of the report through prioritizing the topics included, the potential stakeholders who use the report information, the boundaries covered by the report, in terms of countries, subsidiaries, joint ventures and suppliers (GRI, 2006; Comyns et al., 2013; GRI, 2015).

The report scope and boundary also provides information in relation to the techniques applied by the organization for the measurement of the data disclosed in the report, together with the bases of quantitative data calculation. This category of the report should disclose any changes happened from the previous reporting periods, in terms of the report scope, boundaries and data measurement techniques. Moreover; any limitations faced by the organization while preparing its sustainability report regarding its scope and/or boundary, should also be disclosed to the stakeholders (GRI, 2000; GRI, 2006; GRI, 2015).

4- Governance, Commitment and Engagement

The fourth component, that is the *Governance, Commitment and Engagement*, mainly includes the governance practices followed and stakeholders' engagements committed. Whereas as it is obvious that, this component consists of the three main categories of Governance, Commitment and Engagement, as follows. The first category of *Governance* provides information on the overall governance structure of the organization, including the different regulating committees responsible for specific tasks. The composition of these committees is also stated, in which the number of the independent and/or executive members should be mentioned. This is also the case in regards to the organization's chairman, for whom the extent of responsibilities and level of independence is clarified (GRI; 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

In the same context, this category refers to the mechanisms applied in the organization in order to choose the members within the highest regulatory governance body, through targeting members with certain qualifications, and how continuously improve and maintain these qualifications, in a way that achieves the organizations' overall sustainable strategies and objectives. It is also referred to the system of compensation followed in the organization and more specifically the relationship between the compensation of the members in the highest governance body, executives and senior management and the organization's performance in relation to the three aspects of sustainability, i.e. economic, social and environmental (GRI, 2000 GRI, 2006; GRI, 2015).

In a parallel vein, the governance category refers to the mechanisms applied to govern the relationship between the organization and its shareholders and employees and the extent of their contribution to the organization's main strategies and policies. For instance, the mechanisms pursued by the organization for allowing the minority shareholders to express their opinions. In addition, the approached pursued to inform, and consult, the employees with the important topics and issues related to the economic, social and environmental performance of the organization during the reporting period, as well as the contribution of both the shareholders and employees to improve and/or maintain that performance in the next periods (GRI, 2000 GRI, 2006; GRI, 2015).

Given the critical role played by the highest governance body within the organization in governing the different aspects especially those related to sustainability, the governance category provides an explanation for the main functions of that body, which are as follows. The highest governance body is greatly responsible for setting and developing the codes of conduct and the principles of the economic, environmental and social performance of the organization. In doing so, the body has to ensure the compliance of these codes of conduct and principles with the relevant, internationally agreed standards. Consequently, the body controls and monitors the application of these codes and principles in the various departments and divisions of the organization, as well as any managing accompanied risks and opportunities. A final important point to be

mentioned in this category is the mechanism used for assessing the performance of that highest governance body itself (GRI, 2000; GRI, 2006; GRI, 2015).

The second category of *Commitment* is mainly concerned with the external, sustainability initiatives and principles. In this context, the organization can be a member of, committed to or even endorsing externally developed initiatives and principles in relation to the economic, environmental and social aspects of the sustainable performance. An organization can also be a member in an industry association and/or advocacy organization, both on the national and international levels (GRI, 2015; GRI, 2006; GRI, 2000). Regardless of the type of external initiative or association that is related to the organization, it should be stated that, when the organization joined these initiatives or associations, where they are applied and the extent of the organization's contribution in their development and governance. However, it should be highlighted that, there are two levels of commitment an organization can adopt. Whereas, there are obligatory initiatives and principles to which the organization is obliged to apply and there are voluntary initiatives and principles to which the organization is not obliged to apply, but is just an advocate (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

The third category of *Engagement* provides information on the engagement the organization allows to its stakeholders in the sustainability activities of the organization throughout the reporting period. This engagement behavior requires the organization to firstly identify the targeted groups of the stakeholders, such as customers, employees and their labor unions, suppliers, communities and shareholders and other capital providers. Then, the criteria based on which these groups are selected and the nature of their engagement in the related sustainability topics, for example, key topics raised during in these engagements, which groups are engaged in which topics and the frequency of engagement by each group. And, it should be emphasized that, GRI does not require an organization to report on the stakeholders' engagement conducted for the purpose of the preparation of the sustainability report only, but all stakeholders' engagements conducted (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

5- Management Approach and Performance Indicators

The fifth, last and possibly most important component that should be included in the sustainability report, is the *Management Approach and Performance Indicators*. It mainly includes the management approach, as well as, goals and policies employed against the economic, social and environmental performance indicators. Then, it is obvious that, this component can be divided into the two categories of *Management Approach* and *Performance Indicators* (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

Regarding the first category of the *Management Approach* and referring back to the first two components of the sustainability report, which are the Strategy and Analysis and the Organizational Profile. These components provide an overview and summarized information on the opportunities and risks faced by an organization, while achieving their sustainability goals and the approaches followed by the organization for managing them. Whereas, the Management Approach provides the detailed version of these information on the management approaches followed by the organization for facing the sustainability opportunities and risks. Whereas, this category should disclose the approach(es) employed to fulfill each aspect of the several sustainability performance indicators, as will be detailed in the next section (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2015).

Regarding the second category of the *Performance Indicators*, given the highest importance and the critical role played by this category in measuring the sustainable performance of an organization, the next section is solely dedicated for explaining this category.

2.4.4. GRI Reporting- Performance Indicators for Sustainability Reporting (SR)

The Performance Indicators are developed by the GRI for the purpose of providing an objective, quantitative measurement for the sustainable performance of any

organization. Whereas, they are intended to readily understandable, indicators for measuring every aspect required within each of the social, environmental and social performances of an organization. Thus, these user-friendly indicators facilitate the measurement and assessment of the sustainable performance of the organization by any of its stakeholders. Accordingly, it worth mentioning that, the application of these performance indicators is encouraged and used by the GRI organization for assessing the quality of Sustainability Reporting (SR) of the different organizations worldwide. Where, the organization that reports on all these sustainability performance indicators, is the most one reflecting its actual sustainability performance and then is considered the one with highest quality of SR, and vice versa (GRI, 2000; GRI, 2006; Baughn and McIntosh, 2007; Dissanayake et al., 2016; Hallstedt, 2017). Based on that, these GRI-G3 performance indicators are mainly applied by this research for the same purpose, i.e. assessing the quality of SR, as detailed in the following empirically focused chapters of this research.

Before proceeding in the detailed explanation of the performance indicators, there are five guidelines that are set by the GRI organization while reporting on these indicators, have to be considered, as follows. The first guideline is the *Reporting on Trends*, which requires an organization to report on the current reporting period and at least, two previous periods. Moreover; an organization has to report on its future goals and objectives that are set for the short and medium terms. The second guideline is the *Use of Protocols*, while reporting on the performance indicators. Where, each performance indicator is accompanied with a protocol that provides an interpretation for the report user on the information included within that indicator (GRI, 2000; GRI, 2006).

The third guideline is the *Presentation of Data*, in which, although the use of ratios and normalized data are considered useful and convenient for reporting, this does not mean that there are sufficient for reporting, but the absolute data has also to be presented. The fourth guideline is the *Data Aggregation*, which is intended to manage the level of aggregating the data about the performance indicators. This guideline is very important because failing to manage the appropriate level of data within the report,

results in losing the required amount of meaning, failing to highlight the efficiencies and deficiencies in specific, sustainability areas and affects negatively on the understandability of the information. The fifth guideline is the *Metrics*, which refers to the usage of the internally agreed metrics (measurement units) for the reported data, for example, tones, kilograms and liters. In addition, there are other internationally applied metrics that are more specifically used for sustainability issues, for example the Greenhouse Gas (GHG) equivalents (GRI, 2000; GRI, 2006).

After introducing the general guidelines for reporting on the performance indicators in the sustainability report, it is now appropriate to provide a detailed explanation for the elements of these performance indicators, as follows. However, doing so requires highlighting the context within which these indicators have been developed. In this context, there are five milestone dates throughout the life of the GRI organization till today, regarding the sustainability reporting standards, which are the **G1 Release in 2000**, the **G2 in 2002**, the **G3 in 2006**, the **G4 in 2013** and **GRI-Standards in 2016**, as follows (Roca and Searcy, 2012; Fernandez-Feijoo et al., 2014; GRI, 2015; Lambrechts et al., 2019).

Firstly, the GRI **Release in 2000** that is called **G1**, is the first version of guidelines published by the GRI organization for sustainability reporting. The G1 requires that organizations should report on their economic, social and environmental performance, as well as, the related governance practices employed. The reason behind referring to the corporate governance practices employed is that, similar to the usual needed governance practices employed to monitor the corporate financial performance, an organization has to monitor its sustainability commitment so that achieving its sustainability objectives. And importantly, this behavior has to be reported to the corporate stakeholders, highlighting to them the critical relationship between the corporate sustainability commitment and its financial success. Firms spreading in more than 90 countries worldwide have applied the GRI (G1) release of 2000. Secondly, the **G2 in 2002**, that is released by the GRI as the second version of the sustainability reporting guidelines

(Fernandez-Feijoo et al., 2014; GRI, 2015; Nobanee and Ellili, 2016; Lambrechts et al., 2019).

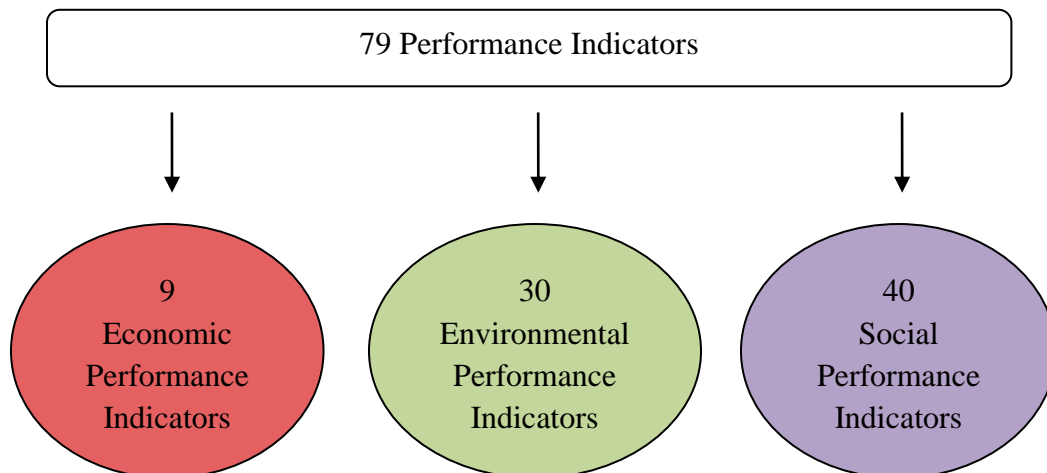
Thirdly, the GRI releases the ***G3 in 2006***; more specifically these guidelines have been released in October, 2006, which are considered as the mostly followed sustainability reporting guidelines by firms worldwide, as explained in the previous section. The main objective for releasing the G3 version of sustainability reporting guidelines is to address the Performance Indicators, which is the fifth and most important category of information that should be included within the sustainability report. Whereas, as previously explained in this chapter, the performance indicators are the real, objective measurements for the corporate performance in relation to the three sustainability dimensions, through employing quantitative measures for each sustainability aspect. Moreover, with the existence of the financial information, these indicators facilitate showing the relationship between the sustainability performance and profitability of the organization (GRI, 2006; Sherman and DiGuilio, 2010; Fernandez-Feijoo et al., 2014; Dissanayake et al., 2016; Lambrechts et al., 2019).

The G3 guidelines comprise ***79 Performance Indicators*** that are covering the three dimensions of sustainability. Out of the 79 performance indicators, 50 indicators are considered as Core Indicators (CORE), while the remaining 29 indicators are considered as Additional Indicators (ADD). Core Indicators (CORE) means that these indicators are considered relevant and material to most of the stakeholders and/or the organizations, which should report on these core indicators, unless it is deemed otherwise, based on the GRI principles. In order to develop the Core Indicators, the GRI goes through a multi-stakeholder' process, to ensure the development of indicators that are generally applicable to most of the organizations. On the other side, the Additional Indicators (ADD) means that these indicators are relevant and material to some of the stakeholders and/or the organizations only and not the majority of them. These additional indicators are developed by the GRI with the purpose of handling emerging practices and/or addressing specific topics that are faced by some stakeholders and/or the organizations

and that have an impact on their sustainability performance (GRI, 2000; Willis, 2003; GRI, 2006; Dissanayake et al., 2016).

It is self-evident that, the 79 performance indicators of SR are divided between the three dimensions of sustainability. As shown in Figure 2.2., there are 9 indicators for the *Economic* performance, 30 indicators for the *Environmental* performance and 40 indicators for the *Social* performance. Under each dimension of sustainability, the performance indicators are categorized by the aspects, which are measured by certain group of indicators. Each indicator can be either a CORE or ADD one, as explained in the previous paragraph (GRI, 2000; GRI, 2006). And it worth mentioning here that, the 79 performance indicators are used by the GRI to assess the quality of the sustainability reports released by firms and so that these indicators are at the core of this research. Whereas, these are indicators are applied by the research as well, in order to measure the quality of the sustainability reporting, which the main objective of the research. Accordingly, and based on this importance, the next parts in this section of the chapter provide a detailed presentation for the performance indicators under each of the three sustainability dimensions, as follows.

Figure 2. 2 Dimensions of 79 Performance Indicators of SR- GRI Content Index



1- Economic Performance Indicators

There are 9 performance indicators for the economic dimension of sustainability that are responsible for measuring and assessing three economic aspects, which are the *Economic Performance*, *Market Presence* and *Indirect Economic Impacts*, as shown in table 2.1. Whereas, in this economic performance section of the sustainability report, an organization should provide concise information on the management approaches followed in order to manage those three aspects. Where, the economic indicators measure the impact of the organization on the economic situation on its stakeholders and any relevant issues, for example the capital flow among the stakeholders. Moreover, the indicators should show the organizations impact on the larger economic system, both nationally and internationally, for example the impact of the organization on the economic wellbeing of the surrounding social communities (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2016).

And, it should be noted here that, although, the financial performance is at the core of an organization's performance and its sustainability, this financial information is available to the stakeholders through the traditional reporting of the financial statements. However; stakeholders need information about the organization's impact on the macroeconomic system, which is missing in the traditional financial reporting. While disclosing its direct and indirect impacts on the surrounding economic systems, an organization should report on the relevant policies and strategies applied, in order to achieve its economic goals and objectives. Organization-specific indicators can be used, besides the GRI indicators, to verify the achievement of those goals and objectives. In addition to the previous CORE information, an organization can provide additional (ADD) information in relation to its economic performance, such as, any relevant risks or opportunities, and any changes occurred during the reporting period that affect the economic performance (GRI, 2000; GRI, 2006). Table 2.1. presents the information to be reported by an organization in its sustainability report in regards to its economic performance, according to the GRI.

Table 2. 1. Economic Performance Indicators- GRI Content Index

Type Aspect	CORE	ADD
Economic Performance	EC1: Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	
	EC2: Financial implications and other risks and opportunities for the organization’s activities due to climate change.	
	EC3: Coverage of the organization’s defined benefit plan obligations.	
	EC4: Significant financial assistance received from government.	
Market Presence		EC5: Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation
	EC6: Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	
	EC7: Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.	
Indirect Economic Impacts	EC8: Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in kind, or pro bono engagement.	
		EC9: Understanding and describing significant indirect economic impacts, including the extent of impacts.

*Extracted from the GRI database (<http://www.globalreporting.org;>) and restructured by the researcher.

2- Environmental Performance Indicators

The environmental performance section of the sustainability report requires an organization to present its impact on both the living and non-living environmental systems, such as water, air, land and the overall surrounding ecosystem. There are 30 performance indicators for the environmental dimension of sustainability that are responsible for measuring and assessing nine environmental aspects, which are the *Materials, Energy, Water, Biodiversity, Emissions, Effluents, and Waste, Products and Services, Compliance, Transport and Overall*, as shown in table 2.2. Based on these nine aspects, the environmental indicators provide information on both environmental inputs, like material, energy and water, and outputs, like emissions, effluents and waster. In addition, the environmental indicators measure other environmental aspects like those relevant to the products and services and the overall environmental expenses (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2016).

Similar to the case of the economic performance indicators and given their importance to the stakeholders in assessing the organization's sustainability performance, the environmental performance section of the sustainability report, provides concise information on the management approaches followed in order to manage those nine aspects of environmental performance. An organization should also report on the relevant policies and strategies applied, in order to achieve its environmental goals and objectives, or even include a reference of where these policies can be found, such as a web link. Organization-specific indicators can be used, besides the GRI indicators, to verify the actual performance against those goals and objectives (GRI, 2000; GRI, 2006).

As it is important for the stakeholders while assessing an organization's sustainability performance, the environmental section reports on further governance policies and procedures that are practiced in this context. Whereas, the organization discloses information on the responsibility allocation regarding the environmental performance, mainly the most senior position responsible for the organizational environmental performance. Moreover; information is provided about the mechanisms for raising awareness, provide trainings and monitoring that are all implemented to

ensure the fulfillment of the environmental aspects. In addition to the previous CORE information, an organization can provide additional (ADD) information in relation to its environmental performance, such as, any relevant risks or opportunities, and any changes occurred during the reporting period that affect the environmental performance (GRI, 2000; GRI, 2006). Table 2.2. presents the information to be reported by an organization in its sustainability report in regards to its environmental performance, according to the GRI.

Table 2. 2 Environmental Performance Indicators- GRI Content Index

Type Aspect	CORE	ADD	
Materials	EN1: Materials used by weight or volume.		
	EN2: Percentage of materials used that are recycled input materials.		
Energy	EN3: Direct energy consumption by primary energy source.		
	EN4: Indirect energy consumption by primary source.		
		EN5: Energy saved due to conservation and efficiency improvements.	
		EN6: Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	
		EN7: Initiatives to reduce indirect energy consumption and reductions achieved.	
	Water	EN8: Total water withdrawal by source	
			EN9: Water sources significantly affected by withdrawal of water.
		EN10: Percentage and total volume of water recycled and reused.	
Biodiversity	EN11: Location and size of land owned, leased, managed in, or adjacent		

Type Aspect	CORE	ADD
	to, protected areas and areas of high biodiversity value outside protected areas.	
	EN12: Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	
		EN13: Habitats protected or restored.
		EN14: Strategies, current actions, and future plans for managing impacts on biodiversity.
		EN15: Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.
Emissions, Effluents, and Waste	EN16: Total direct and indirect greenhouse gas emissions by weight.	
	EN17: Other relevant indirect greenhouse gas emissions by weight.	
		EN18: Initiatives to reduce greenhouse gas emissions and reductions achieved.
	EN19: Emissions of ozone-depleting substances by weight.	
	EN20: NO, SO, and other significant air emissions by type and weight.	
	EN21: Total water discharge by quality and destination.	
	EN22: Total weight of waste by type and disposal method.	
	EN23: Total number and volume of significant spills.	
		EN24: Weight of transported, imported, exported, or treated waste deemed hazardous

Type Aspect	CORE	ADD
		under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.
		EN25: Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.
Products and Services	EN26: Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	
	EN27: Percentage of products sold and their packaging materials that are reclaimed by category.	
Compliance	EN28: Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.	
Transport		EN29: Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce
Overall		EN30: Total environmental protection expenditures and investments by type.

*Extracted from the GRI database (<http://www.globalreporting.org>) and restructured by the researcher.

3- Social Performance Indicators

The social performance section of the sustainability report is concerned with reporting the organization's impact on the social system within which it operates. As comprising the largest number performance indicators (40 out of 79) relative to the economic and environmental dimensions, as mentioned earlier in this chapter, the social dimension involves two categories of aspects, as follows. There are four key aspects for

the social performance, which are *Labor Practices and Decent Work*, *Human Rights, Society* and *Product Responsibility*. Within each of these key aspects, there are specific aspects for measuring it, as shown in Tables 2.3., 2.4., 2.5. and 2.6. (GRI, 2000; GRI, 2006; Comyns et al., 2013; GRI, 2016).

As shown in Table 2.3., the first key aspect of the *Labor Practices and Decent Work*, includes five measuring specific aspects that are *Employment, Labor/Management Relations, Occupational Health and Safety, Training and Education* and *Diversity and Equal Opportunity*.

These specific aspects are selected based on the globally recognized, international standards for labor practices. Among the main of these standards are United Nations (UN) Universal Declaration of Human Rights and its Protocols, UN International Covenant on Civil and Political Rights, UN International Covenant on Economic, Social, and Cultural Rights, the eight core conventions of the ILO Declaration on Fundamental Principles and Rights, the Vienna Declaration and Program of Action and the Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises (GRI, 2000; GRI, 2006).

The labor practices section of the sustainability report, provides concise information on the management approaches followed in order to manage those five specific aspects of labor practices. An organization should also report on the relevant policies and strategies applied, in order to achieve its labor related goals and objectives, or even include a reference of where these policies can be found, such as a web link. Organization-specific indicators can be used, besides the GRI indicators, to verify the actual performance against those goals and objectives (GRI, 2000; GRI, 2006).

As it is important for the stakeholders while assessing an organization's sustainability performance, the labor practices, social section reports on further governance policies and procedures that are practiced in this context. In this context, the organization discloses information on the responsibility allocation regarding the labor

practices, mainly the most senior position responsible for the organizational labor issues. Moreover; information is provided about the mechanisms for raising awareness, provide trainings and monitoring that are all implemented to ensure the fulfillment of the labor related aspects. In addition to the previous CORE information, an organization can provide additional (ADD) information in relation to its labor practices, such as, any relevant risks or opportunities, and any changes occurred during the reporting period that affect the labor performance (GRI, 2000; GRI, 2006). Table 2.3. presents the information to be reported by an organization in its sustainability report in regards to its labor practices, according to the GRI.

Table 2. 3 Social Performance Indicators (Labor Practices and Decent Work)- GRI Content Index

Type Aspect	CORE	ADD
Employment	LA1: Total workforce by employment type, employment contract, and region.	
	LA2: Total number and rate of employee turnover by age group, gender, and region.	
		LA3: Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.
Labor/Management Relations	LA4: Percentage of employees covered by collective bargaining agreements.	
	LA5: Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.	
Occupational Health and Safety		LA6: Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and

Type Aspect	CORE	ADD
		safety programs.
	LA7: Rates of injury, occupational diseases, lost days, and absenteeism, and number of work related fatalities by region.	
	LA8: Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	
		LA9: Health and safety topics covered in formal agreements with trade unions.
Training and Education	LA10: Average hours of training per year per employee by employee category.	
		LA11: Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.
		LA12: Percentage of employees receiving regular performance and career development reviews.
Diversity and Equal Opportunity	LA13: Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	
	LA14: Ratio of basic salary of men to women by employee category.	

*Extracted from the GRI database (<http://www.globalreporting.org;>) and restructured by the researcher.

As shown in Table 2.4., the second key aspect of the *Human Rights*, includes seven measuring specific aspects that are *Investment and Procurement Practices, Non-*

discrimination, Freedom of Association and Collective Bargaining, Abolition of Child Labor, Prevention of Forced and Compulsory Labor, Complaints and Grievance Practices, Security Practices and Indigenous Right. These specific aspects are selected based on the globally recognized, international standards for human rights. Among the main of these standards are United Nations (UN) Universal Declaration of Human Rights and its Protocols, UN International Covenant on Civil and Political Rights, UN International Covenant on Economic, Social, and Cultural Rights, the eight core conventions of the ILO Declaration on Fundamental Principles and Rights at Work of 1998, the Vienna Declaration and Program of Action and the Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises (GRI, 2000; GRI, 2006).

The human rights section of the sustainability report, provides concise information on the management approaches followed in order to manage those five specific aspects of human rights. An organization should also report on the relevant policies and strategies applied, in order to achieve its human rights related goals and objectives, or even include a reference of where these policies can be found, such as a web link. Organization-specific indicators can be used, besides the GRI indicators, to verify the actual performance against those goals and objectives (GRI, 2000; GRI, 2006).

As it is important for the stakeholders while assessing an organization's sustainability performance, the human rights, social section reports on further governance policies and procedures that are practiced in this context. In this context, the organization discloses information on the responsibility allocation regarding the human rights, mainly the most senior position responsible for the organizational human rights' issues. Moreover; information is provided about the mechanisms for raising awareness, provide trainings and monitoring that are all implemented to ensure the fulfillment of the human rights aspects. In addition to the previous CORE information, an organization can provide additional (ADD) information in relation to its human rights, such as, any relevant risks or opportunities, and any changes occurred during the reporting period that affect the human rights related performance (GRI, 2000; GRI, 2006). Table 2.4. presents the

information to be reported by an organization in its sustainability report in regards to its human rights' practices, according to the GRI.

Table 2. 4 Social Performance Indicators (Human Rights) - GRI Content Index

Type Aspect	CORE	ADD
Investment and Procurement Practices	HR1: Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	
	HR2: Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	
		HR3: Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.
Non-discrimination	HR4: Total number of incidents of discrimination and actions taken.	
Freedom of Association and Collective Bargaining	HR5: Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.	
Child Labor	HR6: Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor.	
Forced and Compulsory Labor	HR7: Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor.	
Security Practices		HR8: Percentage of security personnel

Type Aspect	CORE	ADD
		trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.
Indigenous Rights		HR9: Total number of incidents of violations involving rights of indigenous people and actions taken.

*Extracted from the GRI database (<http://www.globalreporting.org/>) and restructured by the researcher.

As shown in table 2.5., the third key aspect of the *Society*, includes five measuring specific aspects that are *Community; Corruption, Public Policy, Anti-Competitive Behavior, and Compliance*. Whereas, this section mainly focuses on the impact of the organization on the communities in which it interacts with and how to manage any resulting risks, mainly monopoly, bribery and corruption. The society section of the sustainability report provides concise information on the management approaches followed in order to manage those five specific aspects of society. An organization should also report on the relevant policies and strategies applied, in order to achieve its society related goals and objectives, or even include a reference of where these policies can be found, such as a web link. Organization-specific indicators can be used, besides the GRI indicators, to verify the actual performance against those goals and objectives (GRI, 2000; GRI, 2006).

As it is important for the stakeholders while assessing an organization's sustainability performance, the society, social section reports on further governance policies and procedures that are practiced in this context. In this context, the organization discloses information on the responsibility allocation regarding the society, mainly the most senior position responsible for the organizational communities' issues. Moreover; information is provided about the mechanisms for raising awareness, provide trainings and monitoring that are all implemented to ensure the fulfillment of the society aspects. In addition to the previous CORE information, an organization can provide additional (ADD) information in relation to its society, such as, any relevant risks or opportunities, and any changes occurred during the reporting period that affect the communities' related

performance (GRI, 2000; GRI, 2006). Table 2.5. presents the information to be reported by an organization in its sustainability report in regards to its society practices, according to the GRI.

Table 2. 5 Social Performance Indicators (Society) - GRI Content Index

Type Aspect	CORE	ADD
Community	SO1: Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	
Corruption	SO2: Percentage and total number of business units analyzed for risks related to corruption.	
	SO3: Percentage of employees trained in organization’s anti-corruption policies and procedures.	
	SO4: Actions taken in response to incidents of corruption.	
Public Policy	SO5: Public policy positions and participation in public policy development and lobbying.	
		SO6: Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.
Anti-Competitive Behavior		SO7: Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes.
Compliance	SO8: Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.	

*Extracted from the GRI database (<http://www.globalreporting.org>) and restructured by the researcher.

As shown in Table 2.6., the fourth and last key aspect of the *Product Responsibility*, includes five measuring specific aspects that are *Customer Health and*

Safety, Product and Service Labeling, Marketing Communications, Customer Privacy and Compliance. So that, this section mainly focuses on the aspects that have a direct effect on the customers. The product responsibility section of the sustainability report provides concise information on the management approaches followed in order to manage those five specific aspects of product responsibility. An organization should also report on the relevant policies and strategies applied, in order to achieve its product related goals and objectives, or even include a reference of where these policies can be found, such as a web link. Organization-specific indicators can be used, besides the GRI indicators, to verify the actual performance against those goals and objectives (GRI, 2000; GRI, 2006).

As it is important for the stakeholders while assessing an organization’s sustainability performance, the product responsibility, social section reports on further governance policies and procedures that are practiced in this context. In this context, the organization discloses information on the responsibility allocation regarding the products and services provided, mainly the most senior position responsible for the products and services issues. Moreover; information is provided about the mechanisms for raising awareness, provide trainings and monitoring that are all implemented to ensure the fulfillment of the product responsibility aspects. In addition to the previous CORE information, an organization can provide additional (ADD) information in relation to its society, such as, any relevant risks or opportunities, and any changes occurred during the reporting period that affect the products and services related performance (GRI, 2000; GRI, 2006). Table 2.6. presents the information to be reported by an organization in its sustainability report in regards to its product responsibility practices, according to the GRI.

Table 2. 6 Social Performance Indicators (Product Responsibility) - GRI Content Index

Type Aspect	CORE	ADD
Customer Health and Safety	PR1: Life cycle stages in which health and safety impacts of products and	

Type Aspect	CORE	ADD
	services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	
		PR2: Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.
Product and Service Labeling	PR3: Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements.	
		PR4: Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.
		PR5: Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.
Marketing Communications	PR6: Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	
		PR7: Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.
Customer Privacy		PR8: Total number of substantiated

Type	CORE	ADD
Aspect		complaints regarding breaches of customer privacy and losses of customer data.
Compliance	PR9: Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services.	

*Extracted from the GRI database (<http://www.globalreporting.org>) and restructured by the researcher.

After presenting and explaining the performance indicators of SR according to the G3 version of the GRI, it can be considered that there is a solid background for understanding this third (and important) milestone of the SR guidelines, and that form a main building block for assessing the SR quality in this research, as detailed in next chapters. Before shifting to the fourth generation of the GRI guidelines, there was a transitional stage between the third version and the fourth version, which is represented in the *G3.1* version of the GRI guidelines. The G3.1 is released in 2011 as a preface for the expected changes in the fourth version of the guidelines. Fourthly, the GRI launched its fourth generation of sustainability standards that is ***G4 in 2013***, more specifically these guidelines have been released in October, 2006 (Fernandez-Feijoo et al., 2014; GRI; 2015; Junior et al., 2017; Lambrechts et al., 2019; <http://www.globalreporting.org>).

The G4 version of the GRI is mainly characterized by focusing on four issues, which are governance practices, anti-corruption, ethics and integrity and gas emissions. It can also be realized that, this recent version of GRI guidelines is focusing on the stakeholders' inclusiveness, so that it requires that the report should present a balanced comprehensive picture about sustainability elements, on an accurate and a timely basis, which is capable of facilitating the performance comparison among different organizations so that satisfying stakeholders' needs. The G4 guidelines are also used by the research for assessing the SR quality, as detailed in the next chapters. In accordance with the GRI database, besides launching the G4 disclosure principles and standards, the GRI organization published also an *Implementation Manual*. This manual is intended for

the preparation of the sustainability report that could be used by organizations with any size and operating in any sector (Roca and Searcy, 2012; Fernandez-Feijoo et al., 2014; GRI; 2015; Junior et al., 2017; Lambrechts et al., 2019; <http://www.globalreporting.org>).

The GRI organization allows two-year transitional period for firms to shift from applying the G3 version of guidelines to the G4 version. This means that, firms are allowed to follow the G3 version until 31, December 2015, however, any sustainability report issued after that date, have to be prepared in accordance with the G4 guidelines, in order to be under the notion of the GRI and so that recognized by the corporate stakeholders. G4 has also an important objective of providing considerable guidance in relation to the preparation of an integrated report, through instructing the preparation of the sustainability report, other than issuing the traditional financial report solely (Dissanayake et al., 2016; GRI, 2016). It is should be highlighted here, till further explanation in next chapters that, the research applies mostly the G3 version of the GRI guidelines and slightly the G4 in assessing the quality of sustainability reporting.

Fifth and finally, the GRI launched the **GRI-Standards in 2016**, to be the most recent version of the GRI for sustainability reporting to be applied nowadays. There are also some terms launched that represent different levels of adherence to the GRI-Standards. Whereas, there is the term of *Citing-GRI Guidelines*, which means that a firm used the GRI guidelines, for example G3, G3.1, or G4, while preparing and disclosing its sustainability report, however, the firm does not include a GRI Content Index within its report. Accordingly, this situation represents a less adherence to the GRI guidelines. Moreover, there is the term of *non-GRI sustainability reporting*, which means that the firm does not refer to the GRI index or guidelines while preparing or disclosing its sustainability report and even the report is not prepared in accordance with any other sustainability reporting guidelines other than the GRI ones. Accordingly, this situation represents no adherence to the GRI guidelines (Roca and Searcy, 2012; Fernandez-Feijoo et al., 2014; Lambrechts et al., 2019; <http://www.globalreporting.org>).

2.5. Chapter Summary

This chapter is intended to provide the core conceptual explanation for Sustainability Reporting (SR), as being the main topic of interest for this research. Fulfillment of this objective is reached through three main pillars, as follows. Firstly, the chapter presents a review for the concept of Sustainability, in which it represents the input for which the report of concern is provided. Reviewing the concept of sustainability involves mainly a presentation of the development of the concept; its importance; its agreed on meanings, its practice among the different fields and the most exposed challenges. Secondly, the chapter shifts to the explanation of the core topic of SR. Where, the chapter explains the development history for the concept; it's most agreed on definitions and its application levels among the various types of organizations and countries.

Thirdly and finally, the chapter presents a very crucial and relevant topic to the SR that is the Global Reporting Initiative (GRI). Whereas, as being the most globally accepted and applied guidelines for SR, the GRI is considered at the core of the objective assessment of SR, which is in turn at the core of the objective assessment of the sustainability performance, of any organization worldwide. The chapter explains the GRI through four dimensions, which are the history and development of the GRI organization, an overview on the GRI reporting in the various fields, the main components to be included in the sustainability report according to the GRI guidelines and finally and most importantly, the performance indicators of SR. As, these indicators are responsible for measuring the three dimensions of sustainability performance of an organization, i.e. economic, environmental and social performances. Therefore, after the development of the conceptual background for the sustainability reporting, the next logical step is to develop the theoretical basis for that developed concept that is the aim of the next chapter.

Chapter 3

Corporate Governance (CG) and Relevant Theories

Chapter 3: Corporate Governance (CG) and Relevant Theories

3.1. Chapter Introduction

The previous chapter enables an examination and expose of concepts that are important to the research. Thus, after the development of the conceptual background of the research, i.e. Sustainability Reporting and the GRI guidelines that are core to that reporting and the research as well, then this chapter is devoted to developing the theoretical basis for the research.

Scientific exposure to any topic of concern requires a comprehensive view about the origin and reasoning of that topic, prior to an in-depth studying of it. This comprehensive view is required for establishing the scientific reasoning and the conceptual background for the topic of concern. This allows more understanding and appreciation for that topic. Moreover; to complement that understanding, the relevant theoretical foundation has also to be developed, in order to provide a scientific justification of adopting that concept and its consequent practice. Proceeding from this, this chapter provides the conceptual background for the Sustainability Reporting, -the main topic of interest for the research, within the broad frame of Corporate Governance (CG) initially considered through a discussion of the Agency Theory and the agency problem (**Corporate Governance (CG): An Overview within the Context of the Agency Theory**). The chapter then explains the link evolved between the CG concept and practice and the SR. (**CG in the context of Corporate Social Responsibility (CSR) and Sustainability Reporting (SR)**).

Following this conceptual background expose within which Sustainability Reporting (SR) is included, the chapter considers and reviews the most important theories related to the SR (**Relevant Theories to Sustainability Reporting (SR)**). The chapter review then goes on to three main theories that have been mostly adopted and applied by scholars and practitioners as a foundation for these concepts. The three theories are

Institutional Theory, Stakeholders Theory and Legitimacy Theory. Then, the chapter provides an extensive discussion for the proposed relationship between Legitimacy Theory and SR (**Legitimacy Theory and Sustainability Reporting (SR)**). Most importantly, the chapter develops **A Discussion of the Tradeoff between Legitimacy Theory and Other Theories Relevant to Sustainability Reporting (SR)**. Based on this discussion, a final decision is taken regarding the most appropriate and convenient theoretical basis for the concept and practice of Sustainability Reporting. Finally, the **Chapter Summary** concludes with a brief review what has been presented within the chapter. This section and the chapter concludes with a link into the next chapter.

3.2. Corporate Governance (CG): An Overview within the Context of the Agency Theory

In addition to its contribution to the academic field, Theory make an important professional contribution to management and organization science. Theory based knowledge can largely help managers and policy makers to control organizational behavior through not only understanding current behavior but also predicting future organizational behavior and practices. The goals and objectives of an organization are achieved through the behavior of its stakeholders. So, controlling this behavior by theory based knowledge, can most likely lead to achieving an organizational goal (Miles, 2012), that is in this study providing a sustainability report of an appropriate and meaningful quality. And, in this context, this chapter considers four theories and evaluates each in terms of their potential facility vis-a-vis an explanation for the variability within Sustainability Reporting.

However; these previously mentioned aims mostly do not happen in the real life, so that representing one of the well-known paradoxes in the management and organization science. In this context, there is an everlasting problem among the organization's stakeholders, more specifically in the relationship between the managers and owners. This problem is the well-known "*Agency Problem*" that constitutes a significant barrier to controlling the stakeholders' behavior. In order to discuss the

agency problem, the agency relationship between owners and managers should be firstly explained, as follows. The firm's owners, i.e. shareholders, are considered as the (Principal) that represents the ownership/proprietary side and the firm's managers are considered as the (Agents) that represents the control side. The owner (Principal) delegates the management of the firm to the managers (Agents). The expectation is that managers should act in favor of the shareholders (principals) (Shamil et al., 2014; Ballesteros, et al., 2017).

Despite the above (theoretically) assumed relationship, it does not always unfortunately exist in the real life, as mentioned earlier, because of the continuous conflict of interests existing between the organization's owners (shareholders) and its managers. The reason behind this conflict is that, from one side, since shareholders and managers do not have the same interests, then managers act in favor of their own interests. From the other side, shareholders are not able to practice a control over the managers' job. This is because there is a difference asymmetry between the shareholders and the managers in relation to the access to the corporate information (Shamil et al., 2014; Ballesteros, et al., 2017). This asymmetry is only a part of the agency problem.

Much effort has been exerted by scholars and practitioners in order to see how one might resolve this agency problem. These efforts resulted in various developments to the well-known Agency Theory. "*Agency Theory*" would argue that, a firm address the issue of a separation between property (proprietorship) and control, through the adoption and implementation of "*Corporate Governance (CG)*". Agency theory is considered to be one of the main building blocks and a core initiator for the development of the corporate governance field. In other words, it can be said that, the corporate governance is a tool for resolving the agency conflict that consequently might address the agency problem (Brennan and Solomon, 2008; Shamil et al., 2014; Ballesteros, et al., 2017).

A pioneer who did much to conceptualize the concept of Corporate Governance in 1992, is Adrian Cadbury, a former Chairman of Cadbury and Cadbury Schweppes International Company. He did so while researching the reasons for several witnessed

financial failures. As president of the Committee for Corporate Governance Financial Aspects in Great Britain, Sir Cadbury offered several contributions to the Corporate Governance field. In this context, he developed and published the Cadbury Code and Report for CG in 1992. The Cadbury Report simply defines the *Corporate Governance (CG)* as “*the system by which companies are managed and controlled*”. This report forms the first spark in developing the considerable science field of CG as it is known nowadays, as well as it paved the road for significant further efforts for developing this field, as follows (Cadbury Report, 1992; Krechovská and Procházková, 2014; Matei and Drumasu, 2015). It is of relevance to this thesis given the accountability, reporting, transparency and disclosure aspects of good CG. And the thesis is fundamentally focused on disclosures within sustainability reports.

In terms of CG, significant efforts are provided by two main international bodies, which are the World Bank and the Organization for Economic Cooperation and Development (OECD) that have largely contributed to the development of the concept and practice of CG and possibly may have prevented some financial failures, resulted from the agency problem. And it is recognized that, the contributions of the world Bank and the OECD to the CG field, owe much to the considerable financial failures at the beginning of the twenty first century. This era witnessed several financial frauds, managerial misconducts and their consequent huge losses in terms of shareholders' wealth. This leads to the consolidation of the principle that, CG has an indispensable role in protecting the stakeholders' rights and more specifically corporate shareholders (OECD, 1999; OECD, 2001; Baker and Anderson, 2010; Rashwan, 2012; Krechovská and Procházková, 2014; Matei and Drumasu, 2015).

Based on the recommendation of the World Bank, the OECD developed and published its Report for CG in 1999. This report established a group of principles which are considered to be fundamental principles for CG. They are internationally recognized, by the several organizations and cultures over the globe till now. Indeed; the OECD has another important release that entrenched the concept of the CG among its different users including the scholars. This release is the OECD Report on CG that was published in

2001 in Romania, where this report exposes three of CG notions, as follows (OECD, 1999; OECD, 2001; Matei and Drumasu, 2015). As detailed in the next paragraph.

Firstly, CG is a nexus of firm relationships among its managers, board of directors, shareholders and some of the other stakeholders. Secondly, CG comprises the structure set by the firm in order to develop its objectives, the means by which these objectives are achieved and then the performance indicators employed to monitor that performance. Thirdly, CG implements a system that induces the efficient utilization of the firm's resources and that most importantly guarantees the protection of the owners (shareholders) interests, while taking regard to the Agency Theory concept (OECD, 2001; Daily et al., 2003; Rashwan, 2012; Matei and Drumasu, 2015; Ma et al., 2017).

As the dominant theoretical framework for the corporate governance, Agency Theory aims to develop and maintain robust principles of corporate governance. In this context, Agency Theory claims that the existence of an effective board of directors would significantly influence a sufficient corporate disclosure in terms of its performance to stakeholders. This should result in a reduction in the agency costs, which are incurred by stakeholders in order for them to obtain the required information for their decisions toward a certain organization. Consequently, this should lead to a decrease in information asymmetry between the stakeholders and the managers (Brennan and Solomon, 2008; Shamil et al., 2014).

Based on its principles, Agency Theory would suggest that large firms tend to have more agency problems and therefore higher agency costs. In this context, large firms are characterized by a large structure of ownership that is diffused among a large number of owners. Equally the theory would suggest that, unless there are highly robust corporate governance practices, and more specifically, an efficient board of directors, these firms will be suffering from a rapid increase in information asymmetry between that large number of owners and corporate management. If so, owners will be forced to incur high agency costs in order to get the required information for the relevant decision

making (Reverte, 2009; Shamil et al., 2014). And sustainability reports are indeed one such report required by stakeholders.

3.3. CG among the prospects of Corporate Social Responsibility (CSR) and Sustainability Reporting (SR)

Taking regard for basic concepts and practices of Corporate Governance (CG), it can be deduced that the main aim of CG is much about maintaining the balance between the interests of all corporate stakeholders. This aim is achieved through several objectives. One very important objective is to protect the rights of the shareholders and ensure the equal treatment for all shareholders, (as explained in the previous section). However; despite the importance of these two objectives, they are alone not sufficient for achieving the main aim of the CG, which is recognizing the needs of all corporate stakeholders, rather than only those of its shareholders (OECD, 1999; Ma et al., 2017).

Given the importance of resources within the CG domain and the fact that it must be mindful of sustainability reporting, it ultimately has, among its main objectives, the objective of the corporate consideration and accountability for social and environmental impacts, resulting from its activities, besides the corporate interest in the economic impacts. This broad view of the required corporate performance, gives rise to the substantive concept of *Corporate Social Responsibility (CSR)*. CSR emerged as a response to the call of CG for firms to hold their responsibility towards the surrounding society, as one of their main corporate stakeholders, so that enhancing governance as a whole. Accordingly, it can be inferred that, CSR is an important tool for attaining CG aims and outcomes (OECD, 1999; Hopkins, 2001; Huse, 2005; Ma et al., 2017). And herein lies its link with the focus of the present research.

As an attribute of CG, CSR has several intersections with CG in terms of the core principles of each of their concepts. They both share three main grounding theoretical aspects. The first theoretical aspect is recognized within the Agency Theory, as both CG and CSR agree on the Principal-Agent relationship that requires corporate managers

(Agents) to protect the interests and rights of corporate owners (Principal), regardless of any potential tension or conflict of interest between these two parties. The second theoretical aspect lies within the Institutional Theory. Pertinent discussion of the theory follows but at this juncture one should note that, both CG and CSR agree on the institutional framework within which a firm is operating. Although it is not obligatory, this institutional framework governs the operations of firms working within its boundaries and most importantly all firms have to abide by the social aspects of this framework, in order to gain their social legitimacy among the peer institutions. The third theoretical aspect is the Stakeholder Theory. Again within this theory, both CG and CSR, not only agree on but also consider to be basic, the principle of protecting the rights of all corporate stakeholders, of which society is a very important one (Ma et al., 2017; Jamali et al., 2008; Sacconi, 2007; Moir, 2001).

Despite approaching CSR as a contemporary positive step towards advancing of the traditional form of CG, this still not sufficient for keeping up with the rapid changes in the requirements of the stakeholders. In this context, CG focuses on the long run interests of the corporate stakeholders, while maximizing corporate value, not only on the economic level (traditional view), or on the economic and social levels (CSR view), but also on the three dimensions of the economic, social and environmental levels. This comprehensive view that includes these three dimensions capture the pivotal view of *Sustainability* and the imperative need for that approach in achieving the goals of the CG. From a CG perspective, *Sustainability* includes the firm's ability to positively affect economic, social and environmental development through the application of the CG practices. In doing so, it sustains and grows corporate value for stakeholders (Kontes, 2004; Tricker, 2009; Krechovská and Procházková, 2014).

The insistent need for the integration of sustainability consideration and sustainability reporting within CG practices is accompanied by a parallel requirement from the side of the stakeholders for the corporate reporting on its sustainability activities. While traditional, financial reporting appears to no longer be sufficient for stakeholders to assess corporate performance, *Sustainability Reporting (SR)* is appears to

be the only useful tool to provide information on the economic, social and environmental aspects and performances of the firm. It enables the stakeholders to conduct a comprehensive assessment of the corporate activities. In turn, this enable them to take better and more appropriate decisions towards that firm. It is that sustainability reporting that represents the focus of this research. Accordingly, on the one hand, SR is seen as the most advanced and comprehensive approach for achieving the goals of the CG. And on the other, a robust set of CG practices assures a robust disclosure of corporate SR. Such practices would encompass CG policies and strategies that plan, implement and monitor an efficient SR disclosure process that satisfy needs of all stakeholders (Krechovská and Procházková, 2014; Jangu et al., 2014; Dumay, 2016; Brusca et al., 2018).

3.4. Theories Relevant to Sustainability Reporting (SR)

After explaining the broad conceptual setting and background from which Sustainability Reporting (SR) has evolved (and appreciated) in the previous sections, this section is dedicated to a review of some theoretical backgrounds relevant to the SR, the main concern of the research. Prior to proceeding in a thorough review of the theoretical basis chosen for this research (i.e. Legitimacy Theory) and its fundamental role in terms of SR, the next section first examines some different relevant theoretical backgrounds, i.e. theories, employed in a similar context. In part, this prior examination is essential, as it partly helps to scientifically justify and validate the selection of the theoretical foundation of the Legitimacy Theory. As the most helpful lens through which to consider the research arena, -i.e. the Quality of corporate Sustainability Reporting.

Three of the most relevant theories are considered in the following three sub sections of the *Institutional Theory*, *Stakeholders Theory* and *Legitimacy Theory* Whereas, *Agency Theory* that has been considered within the more traditional and broad context of governance. Institutional Theory, Stakeholder Theory and Legitimacy Theory are more fruitfully considered in terms of *Sustainability Reporting (SR)*. These theories have varying degrees of relevance to and ability to explain the research arena (Chen and Roberts, 2010; Roca and Searcy, 2012; Hahn and Kuhnen, 2013; Ortas et al., 2015;

Thijssens et al., 2016; Lambrechts et al., 2019). Each of these three theories are, in turn, considered in the immediately following sections.

3.4.1. Institutional Theory

Institutional Theory is mainly concerned with studying the manner in which groups and firms establish and secure their legitimacy and survival within their surrounding institutional society and environment. Normally, this is attained through adherence to the norms prevailing within the surrounding institutional framework together with compliance to the relevant rules and structure. Example would include abiding by relevant laws, social traditions, governmental agencies and regulatory structures. However, this would be while being mindful of the achievement of the economic returns as targeted by the firm. Within such an institutional framework, a firm is continuously exposed to economic, social and environmental pressures that consequently drive and form its sustainability practices. Institutional pressures have a considerable impact on forming the organizational strategy and the associated decision making process that will be both directed towards legitimizing the corporate practices from the perspective of the stakeholders exerting these pressures (DiMaggio and Powell, 1983; Baumol et al., 2009; Glover et al., 2014).

Accordingly, Institutional Theory can also be used to show how changes in social norms and regulatory structures can result in changes in corporate sustainability practices and their reporting. Then, as providing an insight to the researchers in terms of factors influencing several institutional sustainability practices, Institutional Theory has been studied for its relevance to sustainability reporting. This is particularly true in relation to the environmental dimension. The theory contends that; firms are considered to be economic units that operate in the context of a group of institutions that affects the social behavior of those firms. This institutional context determines and controls the firms' social interactions with its stakeholders. Moreover, firms that operate in countries with similar institutional structures are found to be following virtually identical operating techniques. While the above approach has a positive impact on the firm in terms of its

survival, stability and institutional legitimacy, it has a long-term, negative impact on the firm in terms of its social legitimacy, as follows (Bansal, 2005; Glover et al., 2014; Ballesteros, et al., 2017).

A main negative impact envisaged by Institutional Theory lies in the unambitious notion that an institution seeks a mimetic approach. And in doing so, an institution/firm can follow the best practices of sustainability reporting followed by its institutional peers. Despite of seeking a certain standard of reporting, Institutional Theory has been extensively criticized for overlooking the information quality of the reporting provided. This is because institutions often seek to copy/imitate general reporting guidelines that are assumed to be the best practices, without reporting on the firm-specific sustainability activities and practices. This is also reflected in some corporate practices that do not have any apparent resonance or economic reward for the firm or its stakeholders. And while seeking an imitation behavior, institutions face pressures from other organizations and the social and cultural expectations as well, which mostly impairs the corporate social legitimacy. This criticized approach is called Isomorphism (Glover et al., 2014; Fernandez-Feijoo et al., 2016; Samudhram et al., 2016; Ballesteros, et al., 2017).

As a fairly helpful lens, Institutional Theory incorporates three distinctive factors leading to that isomorphism approach, which are coercive, normative and mimic factors. First, Coercive factors are those exerted by authoritative parties that have power over the firm within of the field of activity of that firm, for example within the telecommunications field in case of a telecommunication firm. Second, Normative factors are those exerted by legislative and social parties. In this context, these factors require firms to abide by the relevant sustainability rules and regulations, as well as, abiding by the social values and traditions adopted in the environment and society surrounding a firm. This would be for them to be perceived as legitimate. It is argued within Institutional Theory that, Normative, institutional factors have a positive impact on the sustainability awareness of firms. They drive firms to look for, understand and respond to evolving sustainability guidelines and practices in order to maintain their survival and continuity. Third, mimic factors are those exerted by the firm's institutional peers

(competitors). Whereas, as explained previously, firms imitate practices implemented by the more successful peers in their field, thinking that this is the best sustainable path to gain and maintain legitimacy similar to those successful ones. However; this is not usually the case (DiMaggio and Powell, 1983; Ball and Craig, 2010; Sarkis et al., 2011; Glover et al., 2014).

As a result, such mimic reporting does not always provide an interdependent sustainability reporting in a way that shows the relationship between the economic, social and environmental activities implemented by the relevant institution. For example, an institution could implement a specific policy to protect the environment. This policy would require a certain budget, which is an economic related activity. In turn, this could also require a certain employee training, which is a social related activity. However; this interdependency would not have been revealed under the institutional (mimic) reporting approach. Moreover, institutional sustainability reporting may result in an information overload because of the extra information perceived to be the standard institutional best practice. However; such extra information may not be specifically-related to the institution and would thus not affect its stakeholders' decisions toward it. Consequently, the report will not be fully understandable and meaningfully useful to stakeholders, to an extent it could be even misleading (Samudhram et al., 2016; Ballesteros, et al., 2017).

Despite of this significant mimic weakness of the Institutional Theory in relation to providing qualified sustainability disclosures, there are some situations where institutional factors can have positive influences on the quality level of sustainability reporting. For, in situations of very strong legal systems that guarantees a high protection for the stakeholders' rights, the corporate sustainability performance tends to be more socially responsible and provides highly qualified sustainability disclosures. For it is often the case that, the firms in these situations have a high, social responsibility towards stakeholders far beyond just the maximization of the shareholders' wealth within the firm (Ballesteros, et al., 2017).

Taking regard for the pros and cons of the preceding, it become apparent that, Institutional Theory and its link to the sustainability reporting may not be the most convenient theory with which to justify and explain corporate behavior in terms of disclosing qualified sustainability reports. Indeed, a significant weakness of the theory is that it not targeting the inclusion of qualified information within the sustainability report. This is because the theory focuses on the concept that a company may disclose information that is similar, or at least close, to those disclosed by a company's competitors in the market, regardless of the specific relevance.

3.4.2. Stakeholder Theory

Secondly, *Stakeholders Theory* is considered to be one of the main theoretical foundation within the field of CG generally and more specifically in the SR literature and practice. Initially, the term “stakeholders” referred to any individual, group or firm that affects or affected by the activities of a certain firm and more specifically by the achievement of its objectives. These stakeholders could be internal, -i.e. within the firm-, for example managers and employees. Equally, they could be external to the firm, for example investors (shareholders), customers, external assurers (auditors), governmental agencies, social communities and the surrounding environment. According to Stakeholder Theory, a firm has obligations to fulfill towards all its internal and external stakeholders (Freeman, 1984; Sweeney and Coughlan, 2008; Roca and Searcy, 2012; Lambrechts et al., 2019), with Freeman (1984) being a pioneer contributor in this mode of thinking.

Generally, Stakeholder Theory views any corporate social or environmental behavior as a response to the external and internal pressures imposed on a firm by its corporate stakeholders. Based on that, firms would consider the adoption of the SR concepts within their corporate strategies and objectives. This would embrace the practice of SR disclosures, as a response to the demands of the stakeholders who are currently aware of that power that they have on firms. Accordingly, Stakeholder Theory suggest that, stakeholders exert a continuous pressure on firms in order to maximize the positive

impacts and minimize the negative impacts of their activities on the surrounding society and environment, with all stakeholders being considered within the frame. The theory recognizes that, although firms are potentially affected by the pressure of corporate stakeholders, they would therefore respond to the demands of the stakeholders by providing them with the required sustainability information. However; equal recognition is given to the fact that, by doing so, firms maintain their acceptance and continuity in society and consequently may even gain competitive advantage (Sweeney and Coughlan, 2008; Sarkis et al., 2011; Roy and Goll, 2014; Farooque and Ahulu, 2017; Lambrechts et al., 2019).

Stakeholder Theory has been also evaluated for its relevance to Sustainability Reporting practices. The theory would suggest that, the corporate environmental and social commitment is an effective mechanism to deal with stakeholders' expectations and demands. And since a company has to deal with a broad set of stakeholders in order to gain social acceptance, it evolves unwritten social contract between the company and its stakeholders. Therefore, voluntary sustainability disclosures play an important role in fulfilling the demands of various stakeholders and preserving the social contract. Such disclosures may also have a role in enabling an efficient capital market. Stakeholder Theory recognizes that, there is a range of disparate stakeholders for firms to satisfy. Firms operating in industrial sectors have different stakeholders (and consequently needs), from those operating in (say) the retail sector. Consequently, although there are general SR guidelines to be followed by all firms, firms would also report on particular sector specific matters in terms of sustainability performance indicators to assess their performance, according to the nature of activity of each firm (Roca and Searcy, 2012; Salama et al., 2012; Ballesteros, et al., 2017; Gallego-Álvarez and Ortas, 2017; Lambrechts et al., 2019).

Social and environmental disclosures can be considered as a form of communication or dialogue tool between the firm and its stakeholders. In part, this would be to address the persistent fulfillment of stakeholders claims towards the firm. However, various corporate stakeholders have different, and most importantly conflicting, claims

and needs. So, a firm has to develop a strategy to deal with the challenge of balancing the contradicting needs of the disparate stakeholders. In doing so, firms gain legitimacy and thus strengthens its social legitimacy and welfare. In this context, the existence and continuity of the firm is conditioned by the approval and consent of the stakeholders. And as expectations and demands change, the firm has to adapt in order to fulfill these demands in order to maintain its continuity (Gray et al., 1995; de Villiers and Staden, 2010; Salama et al., 2012; Brusca et al., 2018; Lambrechts et al., 2019).

Stakeholder Theory has been viewed and studied in the SR context through three main perspectives. These are the *descriptive (empirical)* approach, the *instrumental (hypothetical)* approach and the *normative (ethical)* approach. The *descriptive (empirical)* approach is concerned with describing, how firm managers view and react to the interests and needs of the stakeholders, while implicitly giving expression to corporate values and behaviors. The *instrumental (hypothetical)* approach is more concerned with the consequences of ensuring that corporate managers fully satisfy all the needs of all the various stakeholders. The *normative (ethical)* is more concerned with the managers' ability to develop a robust corporate system within an ethical framework. Such a framework would be capable of fulfilling the needs of all stakeholders and at the same time uphold high the moral values (Donaldson and Preston, 1995; Salama et al., 2012).

Stakeholders Theory provides a justification for Sustainability Reporting and disclosures behavior by firms. One such justification would be to develop relationships with their stakeholders. In this context, a firm has to be accountable of its activities for all its stakeholders, as well as considering all their interests before and during implementing their activities. Moreover; firms have to not only consider the interests of their stakeholders, but, to an extent, also to allow their engagement (participation) in the decision making process. This behavior is called stakeholder democracy and is implied under the normative (ethical) approach of the legitimacy theory (Gray et al., 1995; Dhanani and Connolly, 2012; Brusca et al., 2018).

In the same vein, proponents of Stakeholder Theory claim that, it is an effective approach to achieve one of the main objectives of SR, i.e. transparency regarding the firm's performance. This view assumes that, SR will transparently disclose information about the sustainable performance measures of the firm, whether positive or negative performances. Such disclosures would likely include quantitative information about not only the firm economic performance, but also about its social and environmental performances. In doing so, even non-specialist stakeholders could easily understand and assess the firm's overall performance. Indeed, stakeholders could be given the opportunity to provide feedback about the information disclosed. This would be considered as a part of good stakeholder engagement practice. In this context, feedback should be given by both external (e.g. investors) and internal (e.g. managers and employees) stakeholders. Such transparent and mutual communication between the firm and its stakeholders, builds and sustains a solid relationship and loyalty with the firm's stakeholders and concurrently sustains its social legitimacy (Ralph and Stubbs, 2014; Brusca et al., 2018).

Stakeholder Theory would embrace the idea that, stakeholders are a pivotal motive for sustainability reporting for any firm. It would suggest that, the firm's stakeholders play an important role in determining the content to be included within the Sustainability Report. The engaging (participatory) role of the stakeholders can be achieved through the formation of strategic committees that involve both external and internal stakeholders and focus groups for the stakeholders. The role of these committees or groups is to decide on the sustainability issues that is of interest to stakeholders and may affect their decisions toward the firm. Being consistent to that fact, firms would likely include such issues within the content of Sustainability Report. In doing so, the firm will help guarantee its efficiency and effectiveness, in terms of the informational needs of its stakeholders. The presence of such efficiency before the preparation of the report, would be reflected in avoiding the cost of the disclosure for unrequired information and effectiveness is achieved through fulfilling the objective of the sustainability report while satisfying the needs of the stakeholders (Gray et al., 1995; Dhanani and Connolly, 2012; Brusca et al., 2018; Lambrechts et al., 2019).

Furthermore, Stakeholder Theory is concerned not only with the provision of information but also its assurance. The practice of external assurance is an important factor when considering the implementation and improvement of Sustainability Reporting. Where, among the main stakeholders that Stakeholders Theory is concerned about are the external assurers (auditors). As independent specialists, external assurers provide their unbiased, professional opinion about the quality of factual content and possibly the information included by the firm in its Sustainability Report, such assurers confirm the validity of the sustainability report. In addition, external assurers may well suggest to the firm possible changes and/or enhancements that could be done in the sustainability report, in order to improve to its overall quality for the targeted stakeholders. Stakeholder Theory would support that firms consider an external assurer as one of its main stakeholders. Such assurers could likely have a significant impact on other non-specialist stakeholders. Such stakeholders depend on the professional, objective opinion of external assurers against the claims made by the firm (Ceulemans et al., 2015; Brusca et al., 2018).

3.4.3. Legitimacy Theory

Thirdly, *Legitimacy Theory* is the corporate governance theory of present consideration. A part of the objectives of this research calls for the consideration of this “Socio-Economic” theory, which has corporate governance connotations. The importance of a Socio-Economic theory is that, it well considers social issues related to organizational activities together with related economic issues, so that serving all corporate stakeholders. Unlike purely economic theories which focus only on economic practices, and tend to target only financial corporate stakeholders, Legitimacy Theory takes regard for a wide range of stakeholders. It does so on the basis that, an entity’s economic activities cannot be fully evaluated without consideration of its interrelated social as well as environmental activities. Therefore, the three types of an entity’s activities, i.e. economic, social and environmental, representing the main dimensions of sustainability are considered as three dependent components of one unit (Gray et al.,

1995; Fernando and Lawrence, 2014; Abd El-Rahman, 2016; Abd El-Rahman, 2018; Abd El-Rahman, 2019; Lambrechts et al., 2019).

In an initial conceptual contribution, Suchman (1995) explains a *Theory* as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions”. A *Theory* simply contends that, given social structure, norms, values and moral rules determine the appropriateness of organizational behaviors and so that avoid legal sanctions. Legitimacy Theory is a frequent theoretical basis applied in studies of environmental and social disclosures by organizations (Campbell et al., 2003; Tilling, 2004; de Villiers and van Staden, 2006; Thomson, 2007; Reverte, 2009; Miles, 2012; Fernando and Lawrence, 2014; Glover et al., 2014; Shamil et al., 2014; Brusca et al., 2018; Lambrechts et al., 2019). Based on that, Legitimacy Theory is equally treated for the research.

The main idea of Legitimacy Theory, especially at the firm level, is that, in order for a firm to gain and maintain legitimization, it has to operate in accordance with the social values and norms accepted by its surrounding society. From a societal perspective, it should be clarified that, a firm is expected to be creating value for the surrounding society and environment, while pursuing its operations and creating financial and/or economic value. The objective of this behavior is to improve the social image and reputation of the firm among its stakeholders. In turn, these stakeholders then provide that firm with the social legitimacy in order to help maintain its survival and continuity in the market. This thinking and behavior provides the justification for any corporate non-financial (sustainability) disclosures and practices attempted by firms to preserve that targeted legitimacy (Campbell et al., 2003; Dumay, 2016; Beck et al., 2017; Brusca et al., 2018; Lambrechts et al., 2019).

In taking recognition for Legitimacy Theory, a firm will attempt to meet legitimate expectations of all stakeholders. This includes the expectations of the financial stakeholders, environmental stakeholders and social stakeholders. Whereas, financial

stakeholders expect an increased firm value through mainly achieving profits, environmental stakeholders expect an increased firm value through mainly decreasing the negative impacts on the environment because of the firm's operations. Social stakeholders expect an increased firm value through mainly protecting the rights of the internal society, represented in the people working inside the firm, and the external society represented in the people outside the firm but affected by its activities. Fulfilling these expectations, by disclosing relevant information in the sustainability report, a firm will decrease the legitimacy gap between the firms' operations and society expectations. This should consequently maintain the targeted social legitimacy (Roca and Searcy, 2012; Hahn and Kuhnen, 2013; Farooque and Ahulu, 2017; Lambrechts et al., 2019).

3.5. Legitimacy Theory and Sustainability Reporting (SR)

This section is devoted to develop while considering the most convenient theoretical basis of SR. An important objective for this research (referred to in chapter one) is to develop a theoretical foundation of features, that could improve the quality of sustainability reporting. According to Fernando and Lawrence, (2014), a theoretical foundation is developed through the combination of a set of interrelated concepts emerging from one or more theories. Furthermore, they claim that relying on a theory allows for a robust evaluation of (specifically sustainability) practices against predetermined criteria. At this point, it is important to recall that, a theory is a set of constructs or factors that can best describe and/or explain a certain phenomenon and the reasons behind its occurrence (Miles, 2012; Fernando and Lawrence, 2014).

Generally, a conceptual framework, which is required to understand any certain scientific topic, is developed based on concepts of a *theory*, which is a pivotal building block for the assessment of performance. Since sustainability reporting aims at assessing the sustainability performance of organizations, it must be grounded on a conceptual framework, in order to guarantee a robust assessment process for that reporting. Since a conceptual framework is built of concepts of theory, therefore a theoretical foundation is required to guarantee a robust assessment for sustainability reporting. In this research,

Legitimacy Theory is the substantive theory providing the content base for the research topic, i.e. Sustainability Reporting. Where, the theory is employed to act as a robust conceptual foundation for understanding and analyzing the nature and quality of sustainability disclosures (Ahmad and Solaiman, 2004; Missimer et al., 2017; Bebbington et al., 2008; Hussilos et al., 2009).

Hence, the research develops based on the existed theory of Legitimacy Theory, that not only represents the rational basis (ground) for the research hypotheses to be developed, but it also represents the justification for almost all the sustainability disclosure practices implemented by organizations. Based on such a Theory Verification Research, Legitimacy Theory is concerned to be verified throughout the research for its grounding effect in relation to the factors affecting the quality of sustainability reporting. In doing so, the research hypotheses tested are derived from Legitimacy Theory employing a convenient research design. Furthermore, it could also be deducted that, Legitimacy Theory is partially employed in this research as an Explanatory Theory. This is because not only does the research (while employing Legitimacy Theory) describe the characteristics and practices of qualified sustainability reporting but also explains the circumstances and reasons behind their occurrence (Campbell et al., 2003; Punch, 2013; Lambrechts et al., 2019).

Accordingly, the present research may be categorized as an Explanatory (Confirmatory) research. It seeks to establish possible casual relationships based on testable hypotheses, (as detailed in later chapters). Other than descriptive and exploratory researches, Confirmatory research is characterized with evaluating specific predictions about casual links between the variable(s) under test and other manipulated variables. Thus, in some instances, an Explanatory (Confirmatory) research is also called casual research (Hinton and McMurray, 2017).

Studies show that, Legitimacy Theory can be more specifically identified in relation to two levels of legitimacy. These are the institutional, or Macro level and the Organizational level. The first level of institutional legitimacy mainly focuses on the type

of the organizational structure, for example, governmental or capitalist structure. This level provides the organizational structure with the required acceptance from the whole society in order to be able to operate normally within the society. From a narrower scope, the second level of organizational legitimacy is bounded by the legitimacy of individual organizations in order to perform their activities in a way that can guarantee social acceptance by a certain group in the society (Suchman, 1995; Tilling, 2004; Bebbington et al., 2008).

Tilling (2004), Hearit (1995) and Hybels (1995) argue that, although organizational legitimacy cannot be objectively measured for its level in an organization, it is reflected in the organizations' successful performance and continuity. In turn, this is evaluated through its ability to acquire and maintain resources required for its operations. Availability of required resources is not only evaluated in terms of financial capital, but also in terms of availability of labor and customers. Adherence to regulations has also a significant indirect influence on organizational legitimacy. In this context, regulation plays a major role in the inflow of resources required for the viability of an organization. In parallel, in order to maintain legitimacy, an organization has to be flexible in responding to the continuously changing requirements of the society. Therefore, it can be concluded that legitimacy has (at least) two aspects. An explicit regulatory aspect, reflected in the need to abide regulations. The other aspect is an implicit social one, reflected in the need to abide by social norms. In doing so, firms maintain a certain organizational reputation as required by the society (Lanis and Richardson, 2013; Fernando and Lawrence, 2014). Such thinking leads to the hypotheses presented in the next section.

Taking regard for the prior Legitimacy Theory thinking, an entity will perform its activities within the terms of the social contract. This contract is accepted in the view of a specific social group. If so, this would guarantee the entity's continued existence and prevent legal sanctions. Organizational legitimacy is the most applied legitimacy concept in social and environmental (sustainability) accounting research (Ahmad and Sulaiman, 2004; Tilling, 2004; Bebbington et al., 2008; Husillos et al., 2009; Gray et al., 2010;

Comyns et al., 2013; Eugenio et al., 2013; Lanis and Richardson, 2013; Fernando and Lawrence, 2014; Nobanee and Ellili, 2016).

A specific group in society can have a significant impact on the increase in the volume, as well as the type, of sustainability disclosures of the organization. This is particularly true, in case that it is a powerful group that has a significant impact on business activities. Accordingly, organizations have to fulfill all requirements of this group to preserve its continuity. This would help ensure a continuous flow of the corporate resources required and other inputs required to maintain the normal flow of its operations (Lanis and Richardson, 2013).

Managers may make changes in terms of the type of the disclosures, by disclosing either general or specific sustainability related information. Also, managers may make changes in terms of the volume of the disclosures, by increasing the positive or even neutral information or decreasing the negative information. However, regardless of the type of action taken, the reason behind several disclosure-related decisions taken by managers is to implement a response to concerns of the society toward business practices by communicating business information to stakeholders in the society. An entity can communicate business information to stakeholders in the society through media, like responding to business related news published in the media, or other channels. This communication of business information can mitigate social concerns, with the greater objective of maintaining their organization's legitimacy (Lanis and Richardson, 2013; Fernando and Lawrence, 2014; Dissanayake et al., 2016).

The annual reporting is often considered to be capable of legitimizing a whole system with its economic, social and political dimensions of sustainability. Since, sustainability disclosures are the mechanism through which an organization legitimizes its practices in the societal terms. Therefore, Legitimacy Theory may well offer a basis for explaining the behavior of companies in terms of them voluntarily providing social and environmental disclosures. Previous research suggests that, the reason for changes in the pattern of environmental and social disclosures by companies is the fulfillment of

legitimization objectives (Deegan et al., 2000; Ahmad and Sulaiman, 2004; Tilling, 2004; Husillos et al., 2009; Reverte, 2009; Comyns et al., 2013; Eugenio et al., 2013; Fernando and Lawrence, 2014; Shamil et al., 2014; Brusca et al., 2018).

In the same context, it is demonstrated that, the significant legitimization effect of the sustainability reporting has a considerable impact on the maximizing of the firm value. This is especially from the viewpoint of its stakeholders who can realize the outcomes of their contribution in the firm's activities and will then be more willing to participate in value creation activities for the firm. A study undertaken by the University of Cadiz (UCA) in Spain demonstrates that, the university's disclosure and improvement of its sustainability report significantly resulted in raising the ranking of the university. In turn, this lead to improving the image and reputation of the university for its stakeholders (Comyns et al., 2013; Shamil et al., 2014; Brusca et al., 2018).

As a value system-oriented theory, Legitimacy Theory induces the integration of the disclosure practices into business strategies. Moreover, Legitimacy Theory is characterized by enabling firms to provide strategies for the sustainability disclosure process for their stakeholders. In turn, stakeholders can empirically assess these strategies and so appropriately legitimize these firms. These strategies highlight the major role of the organizational disclosures in managing and influencing the relationship between an organization and its stakeholders. In this context, it entails that the value system of an organization should be consistent with the value system of the whole society in which the organization implements its operations. Any discrepancy between the two value systems will likely lead to an emersion of and consequently a growth in the legitimacy gap, which would impair the firm's legitimacy (Gray et al., 1995; Comyns et al., 2013; Lanis and Richardson, 2013; Fernando and Lawrence, 2014; Abd El-Rahman, 2018; Lambrechts et al., 2019).

Organizations should eliminate or even reduce the legitimacy gap that can threaten their survival. The Legitimacy gap occurs when business activities do not satisfy societal expectations. This would be evident by the imposition of penalties on business

environmental damages (Husillos et al., 2009; Eugenio et al., 2013; Lanis and Richardson, 2013; Fernando and Lawrence, 2014; Abd El-Rahman, 2018). As organizations disclose information that satisfies the needs of their stakeholders, a good relationship with stakeholders is developed and maintained, a stable inflow of organizational resources will be guaranteed and consequently a considerable level of societal legitimacy will be sustained for the organization to sustain its successful survival.

According to (Tilling, 2004) and (Hearit, 1995), the more difficult task is to develop a balance between the interests of society and interests of stockholders, which are mostly contradictory, so that being able to defend social legitimacy. Lanis and Richardson (2013) claim that, the level of perceived organizational legitimacy and the level of voluntary environmental and social disclosures are inversely correlated. Where, the level of organizational legitimacy decreases, provoking the increase in social concerns about corporate social and environmental practices, organizations are more likely to provide environmental and social disclosures in an attempt to defend their legitimacy.

If the level of organizational legitimacy decreases, the risk that the organization will not be able to successfully continue its operations increases. The society requires an added value from organizations in order to weigh against the cost the society bears as a result of their activities. Then, Sustainability Reporting should provide the information required by the society in order to reflect an organization's fulfillment of its responsibilities towards that society. A further benefit gained from such disclosure, for all the required information to the society, is that the level of information asymmetry will be reduced. Equally, organization's stakeholders will all have an equal chance to acquire similar information (Ahmad and Sulaiman, 2004; Fernando and Lawrence, 2014). Such thinking leads to the hypotheses presented in the next chapter.

3.6. Discussion of the Tradeoff between Legitimacy Theory and Other Theories Relevant to Sustainability Reporting (SR)

Based on the relevant literature previously reviewed and discussed in this chapter, it is inferred that, from other relevant theories, Legitimacy Theory offers the most appropriate and convenient theoretical basis for evaluating the SR field. Such appropriateness derives from the following three perspectives. Firstly, Legitimacy Theory extends the concept of the Principal-Agent of the Agency Theory to a wider group of corporate stakeholders. Whereas, as explained in the corporate governance section of this chapter, the Agency Theory focuses on the shareholders (principals) as the group that requires their interests to be protected against the corporate managers (agents) whose interests may well contradict with their shareholders (principals). This protection is largely achieved through good corporate governance mechanisms and practices, mainly put in place by the appointed board of directors. In this context, Legitimacy Theory enlarges the targeted group, outside that of the shareholders only, to a wider group comprising all corporate stakeholders within whom all societal interests are captured. Accordingly, the role of corporate governance system is extended to include wider group of stakeholders. This should induce managers to provide more voluntary disclosures and meaningful sustainability. Doing so, should also assist in preserving corporate legitimacy (Fernando and Lawrence, 2014; Shamil et al., 2014; Ballesteros, et al., 2017).

Targeting the corporate shareholders only and protecting their rights, Agency Theory is restricted to the financial perspective of the stakeholders. Generally, shareholders have only financial interests within a firm and wish to maximize their profits. From that perspective, Agency Theory overlooks the social and environmental interests of other stakeholders. Furthermore, it assumes that there are good opportunities for trading corporate information within an efficient market. However, most users of sustainability information are not trading information, as they are not participants in efficient markets. Therefore, it is deducted that Agency Theory alone cannot provide a comprehensive theoretical foundation and justification for the corporate behavior in terms

of Sustainability Reporting, -aspects that are beyond the strict agency relationship (Reverte, 2009; Cormier et al., 2011; Shamil et al., 2014).

Legitimacy Theory considers Sustainability Reporting as a prerequisite for firms to claim their social legitimacy. It offers possible explanations for corporate behavior in terms of Sustainability Reporting (Reverte, 2009; Cormier et al., 2011; Shamil et al., 2014; Brusca et al., 2018). Thus, Legitimacy Theory overcomes an important deficiency within Agency Theory that targets and considers only the interests of a specific group of stakeholders (shareholders), rather than all the stakeholders. Equally, Legitimacy Theory is considered more comprehensive than Agency Theory. Where, Legitimacy Theory considers the interests of shareholders (the objective of Agency Theory), in addition to considering the rights of the other stakeholders, through qualified sustainability performance and reporting. Therefore, Legitimacy Theory provides a more appropriate and convenient theoretical basis, -than Agency Theory-, against which to consider Sustainability Reporting and its quality, which is the focus of this research.

Secondly, in a parallel context, there is a conceptual intersection between Legitimacy Theory and Stakeholder Theory. Both theories accept that, the operations and reporting within the community of an organization should be directly related to all its stakeholders. In doing so, the firm should be operating for the interests of all its stakeholders, rather a specific group of them. More specifically regarding SR, Legitimacy Theory considers fulfilling the needs of all corporate stakeholders as a means to achieve the main aim of corporate social legitimacy. Furthermore, in order to achieve the legitimacy aim, Legitimacy Theory requires firms to integrate legitimacy objectives within its organizational strategies to ensure a robust planning, implementation and controlling for these objectives (Freeman, 1984; Adams and Whelan, 2009; Hahn and Kuhnen, 2013; Lambrechts et al., 2019). Such thinking allows one to conclude that, Legitimacy Theory is more comprehensive than Stakeholder Theory, as it targets all corporate stakeholders (the objective of Stakeholder Theory), while additionally integrating the social legitimacy objectives within the whole organizational strategy.

Accordingly, these organizations would gain and maintain legitimacy through the disclosure of qualified sustainability reports, (the focus of this research).

Thirdly, based on the previous review of literature relevant to Institutional Theory, one observes that, the theory significantly overlooks the quality of information disclosed within the Sustainability Report. Within Institutional Theory, firms tend to imitate sustainability practices as implemented by their competing peers, especially the most successful peers within a certain field of activity. This imitation (mimic) behavior is justified by firms based on the assumption that, the practices of the most successful firms should be imitated, as they provide good examples of best practices and so should be followed by other firms. Unfortunately, this is demonstrated to be not always the case. Additionally, this mimic approach is extensively criticized for disregarding the quality of the sustainability information reported for two main reasons, as follows (Glover et al., 2014; Fernandez-Feijoo et al., 2016; Samudhram et al., 2016; Ballesteros, et al., 2017).

The first reason is that, based on the fact that, intersection does not mean similarity, the best practices of one firm may not necessarily be the best practices for others, even if they operate in the same field of activity. Even when there is an intersection of some interests across firms operating in the same field, this does not necessarily mean that all firms operating in the same field will have similar interests. Consequently, each firm should target its own different groups of stakeholders. Such stakeholders may well have different needs and demands that are fulfilled through disclosing different and specific SR information. In other words, needs that differ from one firm to another. Thus, following a mimic, institutional approach does not mostly result in gain and/or maintaining corporate legitimacy, as would be more likely when considered from a Legitimacy Theory perspective.

The second reason is that, following the mimic approach embedded within Institutional Theory does not enable firms to adhere to the appropriate guidelines for SR, i.e. an international, recognized proxy for SR, like the GRI. This is considered to be an important enabler for the quality level of disclosed SR. In this context, firm seek to

follow common, assumed best practices. Both mostly may not include information about the firm's specific practices, so that not fulfilling its specific stakeholders' needs. Adherence to Legitimacy Theory requires fidelity to recognize SR regulations, rules and practices. In addition, such adherence requires firms to report on both general, and firm specific quality sustainability information. Such considerations are absent from Institutional Theory, although they do help to fulfill firm specific stakeholders needs, and in doing so, help to maintain corporate social legitimacy. Taking regard for the prior considerations, Legitimacy Theory demonstrates that it overcomes the main deficiency of Institutional Theory represented in the mimic institutional approach that does not secure the corporate legitimacy and impairs the quality of SR, (the focus of this research). Once again, Legitimacy Theory appears to offer more fit than Institutional Theory when providing a theoretical foundation for the quality of SR.

Based on the previous literature there is a good basis to conclude that, Legitimacy Theory is a comprehensive theory that implicitly achieves the objectives of some other theories, i.e. *Agency Theory* and *Stakeholder Theory*, as well as explicitly overcomes the shortcomings of some other theories, i.e. *Agency Theory* and *Institutional Theory*. Therefore, ***Legitimacy Theory is considered as the most convenient theoretical foundation for this research aiming at studying the features affecting the Quality of Sustainability Reporting.***

3.7. Chapter Summary

This chapter fulfills two objectives. It presents a broad conceptual background of Sustainability Reporting, -the topic of interest and develops its relevant theoretical foundation. The first objective is achieved through an explanation of the concept of the Corporate Governance (CG). It does so via a discussion of its nature and development as a medium within which to apply Agency Theory. Given the critical role played by CG, the chapter also presents the main mechanisms that firms should follow in order to achieve sound CG objectives. One crucial objective of sound CG is the pursuit of sustainability and its reporting, (the focus of the research).

The second objective enabled in this chapter is the development of theoretical foundation upon which to evaluate Sustainability Reporting. This was enabled through review of three of the most relevant theories in this field. The three theories are Institutional Theory, Stakeholders Theory and Legitimacy Theory. This review enabled the claim that, the Legitimacy Theory is the most appropriate and convenient theory in terms of explaining the adoption and practice of Sustainability Reporting. The chapter concludes that, Legitimacy Theory offers good justification for the firm to provide Sustainably Reporting in order to gain and maintain legitimacy within its surrounding society. This would be done to sustain its continuity in the market. In addition, Legitimacy Theory is seen to be more comprehensive than other theories. It appears to achieve many of the objectives of other theories, while overcoming their shortcomings.

Having established Legitimacy Theory as a good basis for the empirical evaluations of the research, the next chapter concerns itself with the development of appropriate hypotheses that are developed from and grounded by the arguments of Legitimacy Theory.

Chapter 4
Hypotheses Development and Relevant Literature
Contributions

Chapter 4: Hypotheses Development and Relevant Literature Contributions

4.1. Chapter Introduction

The previous chapter considered and reviewed literature relating to Corporate Governance (CG). In particular, it considered relevant theories of CG in an attempt to set down the main context and theoretical foundation for this research. The chapter considered the main context of Corporate Governance and explained how the concept and practice of Sustainability Reporting fits within CG. It took the occasion to show the reasoning behind, and the importance of, Sustainability Reporting. In so doing, it offered a foundation for the previous chapter, which considered the conceptual foundation to the research. Additionally, the chapter reviewed some important theories of Corporate Governance and considered their linkage to sustainability reporting. The chapter review helped lead to the view that, the most appropriate theory of Corporate Governance providing a helpful justification and rationale for the concept and practice of Sustainability Reporting is Legitimacy Theory.

The previous two chapters provide the main building blocks of the conceptual and theoretical background for this research. Where earlier, Chapter 2 considered and reviewed the conceptual foundations of the research, -particularly in relation to the concept of Sustainability Reporting. That chapter enabled an appropriate intense exploration for the development and meaning of Sustainability. This was followed by an examination of Sustainability Reporting (SR) and a consideration of the evolving link between sustainability and accounting. Since Sustainability Reporting cannot be discussed without referring to the major role played by Global Reporting Initiative (GRI) in this field, a considered exploration of the GRI and relevant reporting issues was presented in that chapter as well.

Chapter 3 established the theoretical foundation of the research. It enabled an exploration of theories relevant to the concept and practice of the Corporate Governance

(CG) in general and to Sustainability Reporting specifically. The chapter considered and reviewed Agency Theory, Institutional Theory, Stakeholder Theory, and Legitimacy Theory. Such consideration pointed to the view that, Legitimacy Theory would be the most helpful theory in terms of explaining Sustainability Reporting practices.

Accordingly, that chapter devoted much attention to Legitimacy Theory and its potential as a theoretical foundation to help explain Sustainability Reporting Quality. The theory was evaluated as a justification that could help rationalize corporate behavior in terms of sustainability disclosures. Based on the fact that, the factors/features of a theory are related with each other through research hypotheses, this enables the research to develop possible hypotheses (Miles, 2012). A dissection of that theory and some considerations of its implications suggest, at least, four potential factors (lines of enquiry). These four factors/features each have potential to spawn appropriate hypotheses, and this is the rationale behind this chapter. These four factors/features are: **Adherence to Regulations (Hypothesis 1)**, **External Assurance of the Report (Hypothesis 2)**, **Independence of Board (Hypothesis 3)** and **Type of Information (Hypothesis 4)**. Consequently, while reviewing relevant literature contributions, this chapter is devoted to an explanation of these four research features, and, in turn, these lead to developing proposed research hypotheses. These hypotheses, in turn, formulate the research proposed relationships. Finally, the chapter concludes with a **Summary** of its substance and link into the following one.

In order to gain social legitimacy within the market in which they operate, companies seek to improve their social and environmental efficiency by seeking to increase their positive impacts and decrease their negative impacts, vis a vis their relevant society and environment. Having done so, companies tend to use their annual reporting as the mere tool to legitimize its performance and existence. Corporate annual reports convey information through which companies seek to (at least partially) demonstrate their legitimacy to targeted stakeholders (Tilling, 2004; Daub, 2007; Joseph, 2012; Roca and Searcy, 2012; Iatridis, 2013). Thus, as justified by Legitimacy Theory would suggest that voluntary Sustainability Reporting regarding the business impacts on the

environment and the society is considerably significant. Corporate environmental disclosures have an economic significance, as there are few alternative sources of information about the corporate environmental matters, through which the needs of corporate stakeholders may be fulfilled (de Villiers and Staden, 2006; Bebbington et al., 2008; Ane, 2012; Fernando and Lawrence, 2014).

Corporate stakeholders express an increasing need for the evaluation of non-financial operations in order to reach a comprehensive, balanced performance assessment of an organization. The Sustainability Report is certainly an important legitimate channel employed to fulfill this need. Given that legitimacy framework, the need for Sustainability Reporting (offered by companies) is continually increasing, in order to fulfill the parallel continuous change in society. In this context, stakeholders appear to exercise more control and monitoring of companies. In turn, this requires companies to pay more and closer attention to their corporate ethical behavior (Daub, 2007; Hubbard, 2011; Lanis and Richardson, 2013; Abd El-Rahman, 2018).

However, deviation from the accepted level of quality for Sustainability Reports will negatively affect the firm's standing and performance. Where, the Quality of the Sustainability Report is one of its critical aspects. As Quality SR identifies and discloses important information that should be disclosed within the report, considering the needs of stakeholders. In doing so, Sustainability Reporting seeks to achieve its objectives (Hooks and Staden, 2011). Therefore, based on relevant prior empirical research, the immediately following sections of this chapter present a review and consideration of features that can significantly affect the quality level of Sustainability Reporting. In turn, each of these features enables the development research hypotheses.

4.2. Adherence to Regulations- Hypothesis (1)

The first of these features is Adherence to Regulations. Consistent adherence to regulations may suggest a substantial solution to the problem of inadequate and/or unreliable sustainability information. If disclosing was left solely to managers, this might

result in the publication of biased sustainability information. Such information might not reflect the actual social and environmental business performance. In turn, this could result in misleading the organization's stakeholders who consequently would take inappropriate business decisions. Conversely, managers may seek to disclose incorrectly information that shows the organization in the positive image required by the society. This may involve disclosed information being subjected to some manipulation, in order to acquire and maintain societal legitimacy (Ahmad and Sulaiman, 2004; Husillos et al., 2009).

Indeed, Ballesteros, et al., (2017) demonstrate that in the presence of a strong legal system, the quality of the corporate sustainability information is high. This contrasts with countries that have weak legal enforcement and tend to respond mainly to the interests of shareholders, rather than all the corporate stakeholders. Nevertheless, it is found that in such countries there is high demand to improve the credibility and transparency of sustainability information. Presently, given possible non-adherence to pre-identified regulations, stakeholders perceive such sustainability information does not fulfill their requirements and may lead them to take inappropriate decisions in relation to the reporting firm.

It is argued that, although there is an increasing trend towards disclosing a comprehensive sustainability report voluntarily, presently most companies appear to report only on sustainability issues as required by rules and regulations. One main regulation in terms of sustainability and environmental reporting is within the Statement of Financial Accounting Standards (SFAS) No. 5 of the Financial Accounting Standards Board (FASB). The standard requires companies to report on the financial impacts of their environmentally related issues. It requires disclosures related to the liabilities and costs influencing a range of environmental issues. Its purpose is to help ensure a robust disclosure and consistency across various Sustainability Reporting companies and across varying periods for the same company (Raiborn et al., 2011; Abd El-Rahman, 2018).

One of the main criteria used when judging the Quality of a sustainability report is its relevance and comprehensiveness in relation to corporate stakeholders. The report

should provide them with a fairly comprehensive picture about corporate environmental policies and plans, the business environmental and social impacts and related future plans. Such details could help assist them in their decision making process. Both relevance and comprehensiveness criteria accord with concepts put forth by the Financial Accounting Standards Board (FASB) in their pronouncement relating to the qualitative characteristics of information disclosure. Thus, there should be an attempt to adhere to these qualitative characteristics, when companies report on their sustainability performance within their Sustainability Reports (Hubbard, 2011; Raiborn et al., 2011; Ane, 2012; Abd El-Rahman, 2018).

Ane, (2012) claims that although the level of environmental disclosure has increased among companies in this decade, regrettably, the content and format of environmental disclosures still vary widely among corporations. As a result, the level of incomparability and inconsistency across different reports and disclosures has increased. In turn, the assessment of the quality of corporate information reported becomes a more difficult task for corporate stakeholders when they are assessing corporate performance. When taking appropriate decisions, this becomes even more challenging. Consequently, in order to have comparable, Quality Sustainability Reports, there should be relatively standardized rules and regulations that should be followed by all reporting companies. This should act as a guarantee for providing a basic standard of quality sustainability information for all corporate stakeholders.

According to Rupley et al., (2012), it is reported that, despite the existence of some required environmental disclosures in a few countries (like those relating to toxic waste emissions in USA) environmental reporting continues to remain largely unregulated. These authors also report that most decisions taken regarding the environmental reporting in the companies are managerially based and mainly depend on the board of directors and the company's shareholders. They appear to be not taken as a response to certain environmental regulation and so may not avoid relevant legal sanctions, if any.

Sustainability Reporting is an innovative and growing field, in which there are more than 20 methodologies and several protocols that could be followed. As a result, companies tend to be confused about which one to follow. Indeed, which one is better? Which one will achieve a desired quality level for a specific company? At which situation the company meets required reporting objectives? This inconsistency across several companies and makes comparability even harder. Where, comparability and benchmarking reveal to company's management the opportunities to improve the quality of their Sustainability Report (Hammond and Miles, 2004; Lamberton, 2005; Daub, 2007; Hooks and Staden, 2011; Hubbard, 2011; Williams et al., 2011; Ane, 2012; Joseph, 2012; Roca and Searcy, 2012; Lozano, 2013; Abd El-Rahman, 2018).

Williams et al., (2011) find that, there is a considerable lack of consistency in the Sustainability Reports among local government authorities in Australia. This is so both, in terms of the type of information reported and the extent of reporting. A survey undertaken in 2002 in Malaysia reveals that, only 7.7% of the companies surveyed are voluntarily reporting on the sustainability issues. Accordingly, this emphasizes the need for a regulatory framework for Sustainability Reporting (Iatridis, 2013; Abd El-Rahman, 2018).

In the absence of standardized and regulated Sustainability Reporting, corporate stakeholders will rely, to some extent, on voluntary sustainability disclosures. Understandably, these disclosures are influenced by the existence of a variety of factors that are hard to control, compounded by the inconsistency and incomparability of reporting. Against that background, adherence to regulations when reporting on corporate sustainability performance, would be a significant advancement towards improving the quality of Sustainability Reporting (Ahmad and Sulaiman, 2004; Lamberton, 2005; Daub, 2007; Hubbard, 2011; Ane, 2012; Roca and Searcy, 2012; Rupley et al., 2012; Iatridis, 2013).

Mandatory Sustainability Reporting can help ensure that organizations will provide unbiased sustainability information to their stakeholders, claiming that voluntary

reporting does not necessarily always offer relevant and consistent information. Consequently, regulation is required as an assurance for a Quality Sustainability Report. Then, the preceding paragraphs all point to the possibility that, the lack of adherence to robust Sustainability Reporting regulations is quite likely a barrier to improving the quality of Sustainability Reporting (Ahmad and Sulaiman, 2004; Lamberton, 2005; Hubbard, 2011; Comyns et al., 2013; Iatridis, 2013).

Iatridis, (2013) also considers the impact of regulations in terms of Sustainability Reporting, which obviously appears when such reports are released through private channels. He reflects on preventing or even reducing the release of corporate information through private channels and maintains the availability of publicly available Quality sustainability information. For as lack of adherence to regulations increases, so also does information asymmetry increases and concurrently the quality of the sustainability report more likely decreases.

Hammond and Miles, (2004) conclude that if a particular country regime does not have regulating bodies for Sustainability Reporting and such reports are left to the pressures of the market place and stakeholders, then the quality of the Sustainability Reporting cannot be largely relied upon. Adoption of reporting standards and guidelines will likely be a good indicator of a Quality Sustainability Report. The quality of the Sustainability Report can be assessed by comparing its sustainability disclosures against predetermined reporting elements. These would include quantifiable performance measures, and the consequent award of related scores as predicted upon fulfilling these elements (Hallstedt, 2017).

These predetermined reporting elements can be those of a widely and globally accepted and used regulating body for Sustainability Reporting, such as the **Global Reporting Initiative (GRI)**. It is considered to be, the international standard in terms of Sustainability Reporting (SR) (Hammond and Miles, 2004; Eugenio et al., 2013; Adams, 2015; Abd El-Rahman, 2016; Brusca et al., 2018). Adherence to this standard allows consistency and comparability across reporting companies. Additionally, benchmarking

could easily be done by stakeholders in order to take appropriate decisions when assessing corporate performance. The Netherlands is regarded as a leader in the field of Sustainability Reporting. In part, this is because the headquarters of the GRI are located within that country (Fernandez-Feijoo et al., 2016; Junior et al., 2017; Pope et al., 2017; Abd El-Rahman, 2018).

Within the UAE, there are serious attempts to force all companies listed in the financial market to comply with Sustainability Reporting regulations when providing their annual reports. The Abu Dhabi Sustainability Group (ADSG) was established in 2008 and it seeks to promote and enhance sustainability behavior within relevant companies. In doing so, the ADSG encourages companies to follow international best practices for corporate sustainability disclosures. It believes that, doing so would help maintain a high transparency level within the Sustainability Report. In reviewing the 2009 sustainability reports of UAE companies, the ADSG recommends that, companies should accord with the GRI criteria as a means to improve the quality of sustainability reports. Reference and adherence to GRI criteria, ensure the inclusion of required performance measures within the Sustainability Report. In turn, this provision can help reflect actual sustainability performance. Adherence should also help maintain consistency and comparability among varying and a variety of reporting companies (Nobanee and Ellili, 2016).

The quality of a Sustainability Report could be assessed against a range of issues. These would include style of disclosure, nature of disclosure, scope, coverage, and time period. In addition, one could also consider reliability, credibility and consistency of disclosed information. In most situations, there is likely to be a high correlation between the quality of Sustainability Reporting and the extent of the reporting. This is predicated on the fact that, comprehensive sustainability picture (particularly environmental and social areas), would require several sentences of explanation and detail. Of course, this would be less so if disclosures are repetitive and do not add any fresh information (Hammond and Miles, 2004; Hooks and Staden, 2011).

While several organizations and companies agree on the critical role of Quality Sustainability Reporting, regrettably the GRI is not yet considered to be a mandatory requirement for all corporate sustainability reports. Concurrently, there is evidence suggesting that voluntary Sustainability Reporting that does not comply with certain regulations or guidelines results in sustainability reports that vary across companies in content and format. Further, they do not usually meet the needs of stakeholders, - especially the external ones (Willis, 2003; Lamberton, 2005; Daub, 2007; Farneti and Guthrie, 2009; Hubbard, 2011; Raiborn et al., 2011; Iatridis, 2013; Dissanayake et al., 2016). Fritz et al., (2017) contend that adherence to regulations is one of the most important factors that affect the efficient application and management of a sustainable corporate supply chain.

Lamberton (2005) offers empirical evidence to confirm that even voluntary Sustainability Reporting complying with GRI guidelines results in Sustainability Reports of a higher quality, than those that do not comply with GRI or other related regulations. Fernandez-Feijoo et al., (2016) confirm that complying with the GRI enhances legitimacy for the reporting organization in the eyes of stakeholders. This accords with the theoretical foundation of this research. For Legitimacy Theory would argue that, adherence to regulations is undertaken in order to enhance the quality of the Sustainability Report, which is a prerequisite for firms' legitimacy, as follows. Stakeholders, generally view Sustainability Reports prepared and disclosed in accordance with a well-recognized set of relevant regulations, as a manifestation of social legitimacy. Assuming appropriate reporting that can be relied on, stakeholders could take appropriate decisions in relation to the reporting firm. Accordingly, satisfying stakeholders' needs through legitimate and appropriate quality Sustainability Reporting, firms can gain and maintain their legitimacy and continuity from their stakeholders (Lamberton, 2005; Daub, 2007; Farneti and Guthrie, 2009; Raiborn et al., 2011; Eugenio et al., 2013; Iatridis, 2013; Fernandez-Feijoo et al., 2016; Abd El-Rahman, 2018; Zenya and Nystad, 2018; Lambrechts et al., 2019). Therefore, all the preceding lends credence to the fact that, the existence of, and adherence to, appropriate Sustainability Reporting regulations would improve the overall Quality of the Sustainability Report.

Comyns et al., (2013) find that, when sustainability reports disclosed by Greek companies are evaluated against GRI reporting guidelines, one observes that they lack comprehensiveness in relation to several important indicators. These include environmental performance, human rights and product responsibility. Furthermore, the same authors reveal, a considerable gap in oil and gas industry in Australia between reporting companies and the industry benchmark. Where, the quality of the Sustainability Reports offered by reporting companies being much lower than that envisaged by industry benchmark. In addition, it is determined that, Australian companies in litigation for violation of environmental guidelines, do not disclose such negative information in their reports, focusing only on the positive aspects of their activities.

Therefore, taking all the above and aspects of Legitimacy Theory into account, the first research hypothesis is developed. Given that, Legitimacy Theory argues that companies seeking to secure their social legitimacy would wish to disclose Sustainability Reports of high Quality. In order to do so, such quality reports would adhere to recognized standards and regulations, which would act as an indicator for that quality. On the contrary, lack of adherence to regulations will considerably impair consistency and comparability of Sustainability Reports. Thus, the first research hypothesis developed for testing is:

H1: That Adherence to Regulations (ATR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

4.3. External Assurance of the Report- Hypothesis (2)

There is a body thought that suggests that the substance and contents of Sustainability Reports are important, but their appropriate assurance is even more important. Therefore, some consideration regarding assurance is warranted. Assurance services are a growing field, with more than 200 forms of assurance services being currently provided. An assurance service aims at providing an independent professional opinion on the quality of corporate disclosed information. Such assurance is provided in order to add credibility to the information and, in doing so, help corporate stakeholders

take more appropriate decisions. The main characteristic of assurance is that it is provided by a third independent party other than the reporting firm. The objective is to add objectivity and reliability and to relevant information provided to stakeholders (Arens et al., 2017).

The growing field of assurance embraces several types of services. Generally, assurance services can be divided into two main categories. These are attestation services and other assurance services. Attestation services mainly aim at issuing an assurance report on information or assertion provided by another party. Such services are highly distinctive ones provided by a Certified Public Accountant (CPA). In this context, the CPA would provide a written report assuring the information provided. A popular example of this is seen in audited annual corporate financial statements. While other assurance services do not necessarily require, they though often do, include, a written report. Many forms of assurance services are not restricted to the CPAs. They may also be undertaken or provided by non-CPA providers. Such assurance services do not have to assure an assertion made by another party. In any event, such assurance focuses on evaluating and/or improving the quality of corporate information used by its stakeholders. The most developing example of these services is seen as the assurance of Sustainability Reports, the concern of this section (Arens et al., 2017; Abd El-Rahman, 2019).

Stakeholders seek transparency of the information disclosed in the sustainability report. They also seek confidence as to the outcomes and details conveyed within the report. Assurance of the Sustainability Report helps minimize errors in financial analysts' forecasts regarding corporate earnings. Such errors may occur because of inaccurately disclosed information, upon which stakeholders are more likely to take inappropriate decisions. In addition, independent assurance increases the accountability of the reporting company in terms of the probable social and environmental impacts resulting from the company's operations. Thus, in order to confirm the disclosed sustainability information, an independent professional third party often provides assurance. Such assurance confirms the disclosed information and adds to reliability and accuracy to the benefit of corporate stakeholders. Often some stakeholders may lack the required knowledge and

experience in order to be able to verify the corporate disclosed information (Gray et al., 1993; Daub, 2007; Ridley et al., 2011; Ane, 2012; Rupley et al., 2012; Iatridis, 2013; Ballesteros, et al., 2017).

Legitimacy Theory grounds the theoretical foundation for this research. It suggests that, the provision of third party assurance of the companies' sustainability reports is an attribute that adds to quality of such reports from two perspectives, as follows. From a stakeholder perspective, third party verification of the information included in the sustainability report is considered as a guarantee for the legitimacy regarding the quality of the report upon which they base their decisions. Externally (independently) assured, Sustainability Reports are considered to be more reliable and absolutely legitimizing than non-assured reports. From a corporate management perspective, the existence of a third party assurance acts also as a motivator and driver to improve the quality of Sustainability Reports offered by companies. Consequently, they will seek to avoid qualified and/or negative assurance reports. This would be in order to maintain a corporate positive image in the market and add to its social legitimacy (Gray et al., 1993; Hammond and Miles, 2004; Lamberton, 2005; Daub, 2007; Rowbottom and Lymer, 2009; Hubbard, 2011; Iatridis, 2013; Abd El-Rahman, 2016; Abd El-Rahman, 2019).

Cormier et al., (2011) and Ballesteros, et al., (2017) claim that, the external assurance of the sustainability report has a significant benefit in decreasing the information asymmetry between report readers and corporate management. They agree that, external assurance increases the accuracy of the disclosed information, and concurrently reduces the dispersion of the information among different channels. External assurance of the Sustainability Report converts private corporate information into public information and results in reducing differences between uninformed stakeholders (usually shareholders) and informed stakeholders (usually managers), with the latter receiving corporate information through private channels, over and above, the formal published report.

However, regardless of the significant benefits that external assurance of Sustainability Reporting may bring, there is a related paradox. A main factor in concluding whether to contract with a certain assessor/auditor is the fees to be paid. Producing a high quality sustainability report (assured report) is expensive and requires use of resources. Such resources include monetary amounts paid for the preparation process, (these would include the cost of collecting, measuring, verifying and aggregating the information), together with all the monetary amounts paid for the communication process, (these would include the costs of printing and publishing the sustainability report) (Lamberton, 2005; Comyns et al., 2013; Iatridis, 2013; Lozano, 2013; Fernandez-Feijoo et al., 2016).

Hence, the paradox of external assurance for corporate sustainability reports evolves. On the one hand, several companies' managers are likely to be reluctant to incur high fees (costs) for implementing external assurance for their Sustainability Reporting. Managers may view such assurance fees as an extra fee. If so, this perception may negatively affect the quality of the sustainability report produced. However; on the other hand, stakeholders are in much need for external assurance of the corporate sustainability reports. This is possibly their main guarantee and objective criterion within which to judge the quality of the sustainability report and then take appropriate decision in terms of the reporting firm (Lamberton, 2005; Comyns et al., 2013; Iatridis, 2013; Lozano, 2013; Fernandez-Feijoo et al., 2016; Abd El-Rahman, 2019).

In the long run, incurring high costs for producing a high quality sustainability report, -through independent professional assurance-, will contribute to and retain the company's social legitimacy. For stakeholders, this legitimacy will likely positively affect their assessment of financial position of the company. Additionally, customers will be more willing to purchase the company products that they trust. Equally, investors will be more willing to purchase the company stocks and the company will not likely face penalties or fines for violating relevant sustainability regulations. In broader terms, high quality disclosures in corporate reports could well lead to the improvement of aggregate social welfare. In part, this is achieved by reducing the costs that society must incur when

searching for information about corporate performance (Lamberton, 2005; Brown and Hillegeist, 2007; Comyns et al., 2013; Iatridis, 2013; Lozano, 2013; Dissanayake et al., 2016). That being the case, this research makes efforts to contribute in resolving that paradox, by testing of possible, significant effect of external assurance in terms of the quality of Sustainability Reporting. In that vein, the research seeks appropriate insights in order to decide on whether external assurance of the sustainability report is considered to be an extra fee (managers' perspective), or it is considered as a hallmarking of the quality of the Sustainability Report (stakeholders' perspective) and the social legitimacy of the firm.

In a slightly similar vein, it is claimed that, one of the ways implemented in order to finance the process of corporate Sustainability Reporting is through the imposition of environmental taxes on firms. Application of such a policy is reported to have a double benefit effect. First, it leads to additional revenues for the relevant government, and encourages positive environmental behavior by firms. Such a policy was established in Europe during the period of 1990s. Some jurisdictions encourage and/or require online reporting. This is a cost efficient way for reporting and is much cheaper than hard copy reporting which requires printing and distribution costs (Lamberton, 2005; Rowbottom and Lymer, 2009).

Despite the significant importance of and benefits gained from the issuance of an independent, professional assurance that improve the quality of the corporate Sustainability Reports and disclosures, there are no consistent, obligatory regulations requiring them. Nevertheless, the GRI guidelines, the most globally accepted and applied guidelines for Sustainability Reporting, identifies external assurance as a critical factor when evaluating the quality of corporate sustainability report and/or disclosures (<http://www.globalreporting.org>). An externally assured sustainability report is ascribed a higher quality level than non-externally assured sustainability reports or even internally assured sustainability reports (Ballesteros, et al., 2017).

Corporate behavior in terms of providing (or not) an assurance for the sustainability report is influenced by the context in which the corporate operates. Corporate behavior is affected by institutional factors, of which the legal system as a key, it is likely that countries with a strong legal system afford high protection for the rights of the stakeholders. Equally, in such countries it is possibly more likely that firms act in a highly, socially responsible way. Such countries are characterized by a strong stakeholder-orientation rather than a shareholder-orientation. Accordingly, in such countries, reasonable stakeholders tend to have influence on business decisions. In a stakeholder context, corporate sustainability performance reports tend to be highly informative, with its assurance is a requirement (Aceituno, 2013; Sánchez, 2016; Ballesteros, et al., 2017).

There appears to be a gap in terms of the empirical research of Sustainability Reporting in general and more specifically its External Assurance. In recent years, assured Sustainability Reports appear to be increasing, with a high percentage of them being assured by big 4 auditing firms. The big 4 are the biggest international firms providing auditing, assurance and other accounting related services. They are Deloitte, EY, KPMG and PWC. The number of Sustainability Reports assured by big 4 firms has increased from 35.4% in 2002-2004 to 51.35% in 2006-2007. Their market share has increased from 60% of Sustainability Reports assured in 2005 to 67% of Sustainability Reports assured in 2013 (Bebbington, 2009; Fernandez-Feijoo et al., 2016; Abd El-Rahman, 2019).

Notwithstanding their increasing role in the assurance of Sustainability Reporting assurance, big 4 firms differ among each other in terms to their participation vis a vis the assurance of Sustainability Reports, as follows. At the start of this decade, KPMG and PWC appeared to be more active in generally field and specifically the assurance of Sustainability Reports than Deloitte and EY. This is possibly due to the fact that, KMPG and PWC are headquartered in Europe and that continent promoted the concept of sustainability before USA, - where Deloitte and EY are headquartered. Such early promotion is highlighted in the release of the “Europe 2020 strategy” by the European

Commission in 2010. This strategic document focuses on developing business models based on sustainability concepts and strategies (Fernandez-Feijoo et al., 2016; Ballesteros, et al., 2017; Abd El-Rahman, 2019).

More recently, within the big firms, KPMG appears to be playing a more significant role in the Sustainability Reporting and its practice and research. Since 2008, KPMG is also considered to be a leader in sustainability auditing and assurance. KPMG appears to be following a business strategy that focuses on the effectiveness of Sustainability Reporting. This is mirrored in the very useful related surveys it enables and publishes. In doing so, KPMG makes important references in the area of Sustainability Reporting research (Fernandez-Feijoo et al., 2016; Abd El-Rahman, 2019).

Most of the companies providing high quality sustainability disclosures in their reports are assured by a big 4 firm. As global firms, big 4 attempt to continuously maintain a certain quality of assurance services. In the Netherlands (headquarter of the KPMG), a positive relationship between the Sustainability Reporting assurance and the corporate accountability for sustainability activities has been identified (Iatridis, 2013; Fernandez-Feijoo et al., 2016). Such a relationship highlights the importance of third independent party assurance of Sustainability Reports in order to ensure their quality. Where, assurance of information included within Sustainability Reports requires a considerable level of knowledge and experience that characterizes the independent assurer, while missed by most of the corporate stakeholder.

Based on how does the assurance of Sustainability Reports links in with Legitimacy Theory. The theory suggests that companies are always keen to legitimize their being and their role within the societies in which they function. To do so, companies will tend to make available information that well represents and supports their social legitimacy. One such piece of information is the companies' Sustainability Report. Accordingly, companies will attempt to publish Sustainability Reports of high quality that is likely to be ensured through an independent external assurance of these reports.

Therefore, taking all the above and aspects of Legitimacy Theory into account, the second research hypothesis is developed. Again, the external assurance of sustainability report appears to be a crucial requirement to improve and maintain the quality of Sustainability Reporting. Where, the assurance by a third, independent party for the sustainability report acts as a guarantee for the quality (reliability and accountability) of the corporate disclosed sustainability information. Thus, the second research hypothesis developed for testing is:

H2: That Assurance of the Sustainability Report (ASR) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

4.4. Independence of Board- Hypothesis (3)

In a firms' setting, an efficient reporting process requires that the strategic future aspects of the firm to be integrated within its reporting policy and practice. Where, given their governing role in the firm, the firm's managers are required to consider and disclose not only material information on a regular basis, but also future-oriented information. In other words, companies should disclose information regarding both, the future impact of firm's current activities on the surrounding environment and society and then the estimated corporate performance in the future (Brown and Hillegeist, 2007). Since the sustainability distinctive feature is considering the future stakeholders' needs, then establishing a Sustainability Reporting system prevails. This system would be considered as one of the most essential factors and drivers for a company to maintain an efficient corporate reporting system, which is the measurement tool and the reflection of the firm's achievement for its ultimate goal of being a sustainability-oriented firm (Williams et al., 2011; Gond et al., 2012; Lozano, 2013).

Firm characteristics have been generally grasping the attention of research and practical attitudes for several years, especially in terms of, the firm's board of directors. The reason would be that board of directors is an important firm characteristic. It is an integral part of its corporate governance structure. And given that Sustainability Reporting is the most robust tool for achieving the objectives of corporate governance,

then the board of directors would affect the corporate Sustainability Reporting and thus requires more attention in this regard. However; there are few studies that empirically test that relationship in terms of research. Accordingly, it becomes more appropriate to consider empirical evidence between Sustainability Reporting and aspects of board structure (Hahn and Kuhnen, 2013; Shamil et al., 2014; Haque, 2017), which is then one of the objectives for this research.

Legitimacy Theory would likely be supportive of and justifying for the corporate behavior disposed to disclosing a high quality Sustainability Reports. Indeed, the board of directors can play a critical role in helping a company gain and maintain its social legitimacy. Where, corporate social legitimacy is an important strategic goal for most companies. Thus, the board of directors would certainly be involved in the corporate strategic activities. This would be in addition to their role in monitoring the activities of corporate management. In that sense, the board of directors would contribute towards gaining corporate legitimacy, through encouraging and adopting comprehensive reporting, that includes the corporate sustainability activities, outcomes and performance (Adams et al., 2010; Shamil et al., 2014).

Sound internal corporate governance system plays an important role in enabling and preserving a robust sustainability system and practices. The independence of board of directors specifically and the separation of the roles of the corporate Chief Executive Officer (CEO) and the Chairman are generally considered to be positive in terms of initiating and maintaining good sustainability practices. Additionally, these characteristics could offer a solution to the “everlasting” agency problem. In this context, such characteristics of corporate board may help reduce conflicts of interest across and amongst the management, the shareholders and other stakeholders, while promoting “healthy” sustainability practices (Shamil et al., 2014; Liao et al., 2015; Abd El-Rahman, 2016; Haque, 2017).

Equally, in governance terms, the role of the board of directors cannot be overlooked in terms of solving or at least mitigating corporate agency problems and

costs. Although, the board is much charged with that responsibility, it also has external out-ward facing responsibilities in terms of its wider stakeholder community. In that context, the achievement of corporate legitimacy results in an improvement in the quality of corporate disclosures, mainly sustainability disclosures (Aguilera and Jackson, 2003; Shamil et al., 2014).

Several sustainability-related engagements are, by definition, of a long term nature. Their perceived benefits, (e.g. long term value to the shareholders, improved market opportunities and better social legitimacy), are all geared towards the longer term. However, because of their short-term corporate contracts, several managers will likely resist to engage in long-term sustainability commitments. This is because their benefits will not be recognized when the contribution and impact of those managers are evaluated in the short run. The independence of board members can prevent that resistance from the management. This is because boards will likely to be more disposed toward long term sustainability commitments that would result in good sustainability practices/reporting, bring benefits to all stakeholders and consequently enable sustained corporate social legitimacy (Liao et al., 2015; Haque, 2017).

Moreover; several studies prove that, having a robust board of directors is a motivator for continuously enhancing corporate social and environmental performance and reporting. As has been indicated within several US, UK and Canadian firms, a robust board of directors tends establish a sustainability based compensation system for managers and employees. Such compensation systems have been found to have a positive impact on promoting social and environmental performances, enhanced corporate sustainable legitimacy, and in turn, seems to positively affects the financial position, and thus organizational continuity (Abd El-Rahman, 2016; Haque, 2017).

On the global level, Haque, (2017) finds that, 69% of the international companies implement a bonus remuneration based on sustainability performance targets. Clearly, these targets include the amount of greenhouse gas (GHG) emissions. Similar approach seen to be followed by 53% of US companies. When such systems incorporate long-term

sustainability considerations, the benefit of having sustainability related remuneration system evidently appears, like that seen within the UK context. In the UK, there are regulations imposed on the relevant companies for them to disclose a detailed report on the corporate remuneration system.

There is empirical evidence suggesting a positive relationship between the independence of board of directors and the social and environmental disclosures. The more independent are board of directors, the more likely they are to successfully approach the corporate sustainability opportunities and challenges. In doing so, these boards influence managers to engage in long-term sustainability commitments. Such thinking is identified within a study conducted in relation to commercial banks in Bangladesh. Where, it is concluded that the independence of the executive directors and the existence of foreign members in the board of directors have a significantly positive correlation with the content and quality of corporate sustainability disclosures (Liao et al., 2015; Nobanee and Ellili, 2016; Haque, 2017).

Furthermore; Haque, (2017) identifies a positive relationship between the independence of corporate board of directors and corporate initiatives in terms of carbon reduction. Carbon reduction is considered as one of the more recognizable sustainability practices, in terms of environmental considerations. These practices are critical to asset evaluation and long-term investment analysis. The issues relating to the management of carbon emissions and reduction have developed into carbon accounting system. Understandably, this is now part of sustainability accounting/reporting. Indeed, carbon accounting often plays an effective role in highlighting the sustainability issues. In doing so, in the context of sustainability accounting and reporting, communicating information about carbon reduction accounting to the market and other external stakeholders often leads to improvements in the corporate financial position. Then, since the independence of board has a positive effect on the carbon accounting, which is, in turn, a part of the sustainability accounting/reporting system. Therefore, it would be reasonable to expect that, board independence has a positive effect on the presence and quality of Sustainability Reporting.

The independence of board of directors within the firm can positively affect the *Quality* of Sustainability Reporting. Independent directors are more to impose appropriate quality-focused pressure on corporate management while monitoring the reporting of sustainability related issues. External directors provide external perspectives of the firm drawing on a range of different settings of Sustainability Reporting. They are likely to be more conscious of the need to report more transparent information to stakeholders. They would also be more determined to expand the corporate engagement to a wider range of stakeholders (not only shareholders) and thus they will influence and possibly control the corporate performance and strategic objectives. If so, independent board of directors will likely encourage/enable a better monitoring of management performance and reporting. On that basis, board independence would positively affect/reduce information asymmetry between stakeholders and management and thus would improve the quality level of the Sustainability Report (Rupley et al., 2012; Iatridis, 2013; Abd El-Rahman, 2016; Haque, 2017).

While there is a significant body of theoretical and empirical literature that claim a significant, positive relationship between the independence of board of directors and the quality of corporate sustainability disclosures, there are others that present a conflicting evidence. Indeed, some empirical studies reach a negative or even no relationship between the independence of board members and the quality of Sustainability Reporting (Boesso and Kumar, 2007; Chau and Gray, 2010; Shamil et al., 2014). Such contradictions offer a robust scientific justification for this research in order to re-evaluate this dynamic relationship between the board independence and the quality of its Sustainability Reporting. And that is an important focus of this research focus.

Concurrent to the relationship between the quality of corporate Sustainability Reporting and the independence of corporate board members, in general, there is another linked relationship is appropriate to examine. It is the relationship between the quality of Sustainability Reporting and the separation between board Chairman and Chief Executive Officer (CEO). There is a body of evidence that reveals a positive influence on the corporate sustainability practices, when this separation exists (Shamil et al., 2014; Liao et

al., 2015; Nadeem et al., 2017; Haque, 2017). This separation of rules is referred to as “Duality”, when these two roles are performed by the same person.

Understandably, duality of the position of the corporate CEO would have a negative influence on the quality of the sustainability practices. Such duality is seen to result in a weak or unremarkable score being achieved by the relevant firm in relations to its Environmental, Social and Governance (ESG) disclosure index. In other words, when duality presents, the ESG score achieved by the firm appears to decrease. The ESG disclosure index is one of the important indices used to measure the corporate sustainability practices and more specifically the Sustainability Reporting and/or disclosure practices. In which, this disclosure index that is applied by the Bloomberg database, is based on criteria extracted from the GRI database, the mostly applied guidelines for Sustainability Reporting worldwide (Liao et al., 2015; Abd El-Rahman, 2016; Nadeem et al., 2017).

There is an additional evidence to support the claim that the CEO position has a direct effect on corporate environmental practices. In part, this would be because of the fact that, CEOs who are also Chairman (duality), wield more power and control over the corporate governance practices. From Legitimacy Theory perspective, these control practices should be directed towards gaining and maintaining corporate legitimacy. On that basis, the absence of that duality (independence of board Chairman) may appropriately be considered as one of the means to achieve the corporate social legitimacy. That legitimacy achieved through a quality Sustainability Reporting. In which, the board independence, (whether the board members in general or the Chairman in specific) provides more confidence and trust to the stakeholders about the corporate sustainable performance and reporting to be targeting their interests. Consequently, the stakeholders view the corporate Sustainability Reporting as legitimate and reliable and therefore provide legitimacy to that firm (Adams et al., 2010; Shamil et al., 2014; Liao et al., 2015; Nobanee and Ellili, 2016; Haque, 2017; Nadeem et al., 2017).

Taking regard for all the immediately preceding, the third research hypothesis is grounded within the context of board structures, specifically its independence. Independently focused boards (reflecting robust governance structures) would ensure enabling and publishing higher quality Sustainability Reports. Partially, the reason would be embedded within Legitimacy Theory. As previously stated, the theory contends that companies are always keen to legitimize their existence, continuity and role within their operating societies. Accordingly, they would like to reveal to their stakeholders higher governance levels, as would be reflected in a highly independent board and/or separation of the roles between the Chairman and CEO. Concurrently, such companies would like to reinforce their social legitimacy by enabling and publishing high quality Sustainability Reports. Such reasoning could conclude the following two “sub” hypotheses, which together form the third Hypothesis. Thus, the third research hypothesis that is developed for testing is divided into two sub-hypotheses, as follows:

H3a: That Independence of Board (IOB) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

H3b: That Independence of Chair (IOC) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

4.5. Type of Information- Hypothesis (4)

Information economics suggests three perspectives from which information can be considered. These are Search perspective information, Experience perspective information and Credence perspective information. In the context of Sustainability Reports, each of these perspectives are now considered. *Search* perspective information is evaluated in terms of its ease of understandability and absorption by the reader. Examples of such information within Sustainability Reports include: *organizational profile, i.e. company size, location of operations, branches and products offered, *report parameters, i.e. the report scope, report cycle and date of previous report, and organizational external commitments or stakeholders engagements. Such examples of information can usually be easily confirmed by non-specialist stakeholders through

websites and/or media. This can undertake this at low cost, minimal time and effort and non-technical knowledge (Akerlof, 1970; Comyns et al., 2013; Abd El-Rahman, 2016).

In this type of information, the “searchability” of the information is the determining criterion and for this reason the information is classified as *Search* perspective information. It is self-evident that the content and therefore the type of information conveyed in the Sustainability Report will influence its quality. And this fourth hypothesis is grounded within that basis. Accordingly, some discussion of the content/type of information with SR is warranted.

The second perspective considers information from an *experience* perspective. Such information is more evident to stakeholders who have experience with the information provider or the reporting firm. Understandably, such experience could be obtained only after some period of time working in association with the firm. Sustainability Reports information which would likely be in this set of information include: *the organization strategy and vision, *the future commitments and some quantitative data on the company future goals. In terms of the above features, report readers are unable to assure the credibility of the information provided immediately. They may however be able to verify it at a future date when such information is related to appropriate organizational activities (Akerlof, 1970; Comyns et al., 2013; Abd El-Rahman, 2016).

In terms of Sustainability Reports and *Experience* perspective information one would note that, although companies cannot provide an accurate estimation about future, sustainable commitments, their stated future activities and present actual outcomes should approach or at least be broadly consistent with, the companies’ previous estimations and aspirations. On that basis, Sustainability report readers can use their experience when reading previous company reports and how they convey predictions and performance evaluations. Consequently, it is the experience of previous report reading that plays an important role in helping readers evaluate the quality of the Sustainability Report under consideration (Akerlof, 1970; Comyns et al., 2013; Abd El-Rahman, 2016).

The third perspective of considering information is the *credence* information. This category of information is generally difficult (sometimes impossible) to be verified by the report reader (stakeholder). This is so even after some time working in association with the reporting firm. Examples of such information within Sustainability Reports would include mainly quantitative information, as best captured by appropriate performance indicators. Such information would likely include emissions' rates. Additionally, such information may also include some qualitative data related to specific issues about the company, such as policies relating to labor and human rights. In such situations one envisages non-specialist and/or non-technical stakeholders, (which may represent the majority of the corporate stakeholders), would be unable to verify such information, either at the time of reading the report or even thereafter. Thus, verifying such credence perspective information requires some specialized knowledge and experience in relation to the relevant range of performance indicators, company operations, procedures and policies (Akerlof, 1970; Comyns et al., 2013; Abd El-Rahman, 2016).

Should a corporate stakeholder wish to have assurance as to the performance indicators disclosed by the company in its Sustainability Report, it is likely that, considerable time, effort and costs will need to be incurred to obtain such assurance. This is likely to be particularly true if the company being assured, is a multinational company with a large number of activities and performance indicators required for performance assessment. Worryingly in some cases, the time, effort and costs incurred by non-specialist and/or non-technical stakeholder calling for assurance, may not weigh against the benefits gained from that assurance (Comyns et al., 2013; Abd El-Rahman, 2016).

Reflecting the three information perspectives to Sustainability Reports, Sustainability reports manifest combinations of these information perspectives and will thus show varying levels of information asymmetry and quality. Predominance of a particular type of information within the report will vary from company to company and from one country to another. Need not case that, the level of the predominant category of information in the report is an indicator for the quality level of the remaining information within the report. Guidance as to these voluntary disclosures could be given to companies

in terms of what to report and the format in which to report. These types of (easily confirmed) information help manifest a company's claims in terms of social legitimacy (Lamberton, 2005; Daub, 2007; Joseph, 2012; Comyns et al., 2013).

In terms of *credence* perspective information, information asymmetry between the report reader (stakeholder) and the company tends to be high. This could be either at the time of reading the report or even after the passage of a certain period of time. Together with some other limitations, such asymmetry renders stakeholders unable to determine the quality of the reported information. In part, this is also caused by the high levels of experience, knowledge, time and costs required to assure this information. Such quality assurance inhibitors may result in poorly informed stakeholders. In turn, poorly informed stakeholders may, (despite of being not ready to), attribute social legitimacy to the company even if such company lacks accepted reporting quality. Such a high level of information asymmetry, may result in indeterminate quality of Sustainability Report and the company's social legitimacy could be requested regardless of the information credibility. Accordingly, companies will not be willing to incur costs or effort in order to improve the quality of their Sustainability Report that help companies earn social legitimacy from their stakeholders (Lamberton, 2005; Comyns et al., 2013).

All the above would point to compulsory, credible sustainability reporting regulations (such as GRI, as previously explained). Such regulations would help towards consistent reporting and assure the creditability of credence information. In turn, this should help a consistent acceptable quality level of this category of reported information. And as stated previously, the quality level of that information cannot easily or always be controlled or verified by stakeholders. This may be because they lack the expert knowledge, time and finance required to evaluate the quality of this sort of information. Accordingly, this makes it even more important that, the Sustainability Report should reveal information that is easily understandable, verifiable and comparable by all corporate stakeholders. This would be particularly true for non-specialist stakeholders (Lamberton, 2005; Daub, 2007; Comyns et al., 2013).

It is not unreasonable to make the case that, the type of the information contained in a Sustainability Report is required to affect its quality. Some quality standards and principles in terms of some sustainability information are difficult to report because of the difficulty in measuring them in a quantifiable form. For example, environmentally related information is easy to be quantified and reported and then they are clearly reported. Such instances would include the information related to the costs incurred to remove or even reduce the effect of some chemical emissions. In contrast, there are other environmentally related information could be difficult to quantify and measure. Such phenomena would include the long-term impact of some pollutants. In such challenging situations, companies may seek to omit such information from their Sustainability Reports, -both in terms of their costs or benefits. In these situations, the Sustainability Report will not reflect the whole “picture” about sustainability business impacts to stakeholders. If so, they will base their decisions on incomplete information, often ignorant of and missing some costs and/or benefits that may affect the whole financial position and viability of the company (Raiborn et al., 2011; Ane, 2012; Abd El-Rahman, 2016).

Comyns et al. (2013) suggest that, one of the major deficiencies in Sustainability Reports is their lack of quantitative indicators such as greenhouse emissions. Inclusion of quantitative data is considered as one of the important criteria for a good/high quality Sustainability Report. Unlike general, qualitative descriptive data, quantitative data has the potential to more clearly and easily reflect a company’s performance. This is because quantitative data is more easily understood by readers and could be used by stakeholders to compare performance between different companies and across several years for the same company. Such an assessment could be done in an effort to improve performance and consider if the company is making appropriate progression in achieving its predetermined targets and objectives (Ahmad and Sulaiman, 2004; Hammond and Miles, 2004; Wijk and Persoon, 2006; Ane, 2012; Abd El-Rahman, 2016; Abd El-Rahman, 2018).

Considering particular elements of the Sustainability Report, sustainability costs are more likely to be disclosed in the sustainability reports than sustainability benefits. This is because the sustainability costs can usually be assessed using quantitative measures, unlike sustainability benefits, which are often difficult to assess quantitatively so are assessed using qualitative measures. Curiously, there is a significant prevalence of qualitative measures being used in the assessment of corporate sustainability performance within the Sustainability Report. This appears to be especially so within Asian companies. Concurrently, there appears to be negative impact on the credibility of the disclosed information (Raiborn et al., 2011; Iatridis, 2013; Momin and Parker, 2013; Dissanayake et al., 2016).

A proposed solution for the above features could be that, sustainability costs are reported as quality costs. In turn, such costs could be categorized into prevention costs, -i.e. costs incurred to prevent the occurrence of sustainability problems, or appraisal costs, -i.e. costs incurred to address problems not avoided by prevention costs. The sustainability benefits can then be determined through the reduced failure costs. Reporting on sustainability costs and benefits in this way would provide a more comprehensive view about the company's sustainability issues. In turn, this could help managers take better decisions. If so warranted, a similar but less detailed report could be provided to external stakeholders. Such comprehensive reports could help them take better decisions especially decisions related to capital investments, which may have the potential to achieve stakeholders' needs and objectives (Raiborn et al., 2011; Iatridis, 2013).

Reflecting on Legitimacy Theory, -the theoretical background for this research and its main building block-, one can easily infer how, it plays an important role in and influence the type of information disclosed in Sustainability Reports, -both in extent and format. This is because organizations seek to acquire legitimacy from the society in which they operate. In order to so, they provide sustainability information in format that personates with the surrounding environment and societal stakeholders. And in doing so, organizations convey information that earns them social legitimacy and support. In part,

this is through their appearance as socially and environmentally responsible. Again to confirm, stakeholders prefer that type of sustainability information reported in the quantitative format. As previously detailed, stakeholders perceive quantitative information as easily understandable, verifiable and comparable. All these qualities are seen to be legitimate information that reflects corporate commitment towards sustainability goals and the long-term interests of stakeholders. Accordingly, in such circumstances, stakeholders become more willing to provide social legitimacy to that reporting firm (Ahmad and Sulaiman, 2004; Lamberton, 2005; Wijk and Persoon, 2006; Ane, 2012).

Having regard to all the preceding discussions and observations, one may reasonably conclude that, social legitimacy is tied in with the quality of the relevant Sustainability Report. Moreover, the type of information, mainly quantitative information, contained within the report, would significantly influence that quality of Sustainability Report, thus connecting Legitimacy Theory and Quality of Sustainability Reporting. Therefore, the type of information, i.e. Quantitative Information, disclosed in the sustainability report can significantly affects the understandability and of the corporate report. Consequently, the fourth research hypothesis developed for testing is:

H4: That Type of information (TOI) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

Having considered the four hypotheses developed based on discussing various supportive aspects of Sustainability Reporting literature, as shown in Figure 4.1., one may reach reasonable conclusions. The main conclusion claims that, Adherence to Regulations, Assurance of Report, Independence of Board (both the Independence of Board members and the Independence of the Chair) and Type of Information within the report, are essential drivers for and evaluate features of improving and maintaining the Quality of Sustainability Reporting.

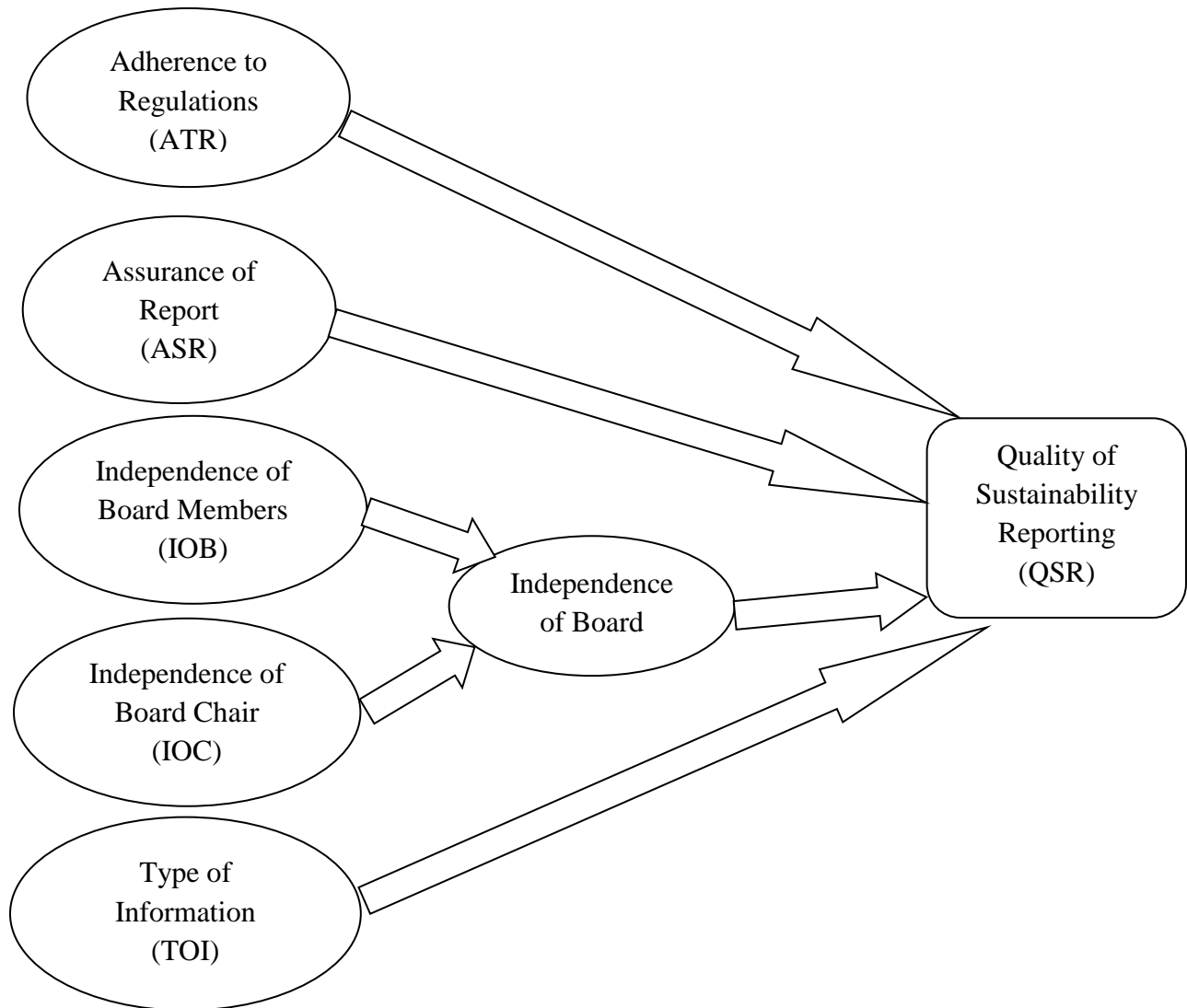


Figure 4. 1 Proposed features affecting the Quality of Sustainability Reporting

4.6. Chapter Summary

This chapter considered features that could potentially have an effect on the quality of Sustainability Reporting, while considering key related literature contributions. Concurrently, that consideration made linkage to Legitimacy Theory. The literature was considered in terms to four features, -i.e. which are Adherence to Regulations (ATR), Assurance of Report (ASR), Independence of Board (IOB) and Type of Information (TOI), as follows. Regarding the Adherence to Regulations feature, the consideration observed that the Global Reporting Initiative (GRI) is the most accepted and applied reference and proxy for Sustainability Reporting worldwide. The literature gave evidence that companies adhering to GRI (or even other) regulations for Sustainability Report have higher quality Sustainability Reports and/or disclosures than those companies that tend to not adhere to relevant regulations. However, such results are re-evaluated within this research. Based on this importance, this reference or frame is critical to the empirical offerings of the research, as will be presented in following chapters.

In terms of Assurance of the Report, considerations conclude that, the implementation of an external, professional assurance, by a third party, for the corporate sustainability report, tends to result in higher quality Sustainability Reports. Such higher quality of corporate Sustainability Reporting, is extensively needed by external stakeholders, who see an independent assurance as a “guarantee” for the quality of the information and upon which they take relevant corporate decisions. In part, this result supports Legitimacy Theory implications, whereby corporate Sustainability Report made easier for stakeholders to view firm as being socially legitimate, which consequently reinforces the firm market value.

Regarding the Independence of Board, the literature reviews this feature from two aspects. Firstly, the independence of board members as a whole and secondly the independence of the chair of the board. In this context, evidence suggests that, as the percentage of the independent members within the board increases, the quality of the Sustainability Report and its disclosure increase. In particular, the literature claims that

the duality of the two positions of CEO and Chair impairs the quality of the information disclosed in the Sustainability Report. Such considerations and relationships are re-evaluated within the context of the present research.

Finally, the literature considered the effect of the Type of Information within the Sustainability Report and its quality. The literature suggested the importance of, and the reference for quantitative information, when evaluating the sustainability performance. This is probably because stakeholders view quantitative indicators facilitate understandability, verifiability and evaluation of corporate sustainability performance. Quantitative measures also facilitate comparability of sustainability performances across firms. Such comparability appears to be highly valued by stakeholders especially when taking investment and lending decisions. These results are re-evaluated in the (later) empirical chapter of this research.

Accordingly, it is hypothesized that, Adherence to Regulations (ATR), Assurance of Report (ASR), Independence of Board (IOB) and Type of Information (TOI), significantly affect on the Quality of Sustainability Reporting. The next chapter is then devoted to an exposition of the design and most convenient research methodology that could be employed in order to empirically test these hypotheses.

The following and last section of this chapter that is section 4.7. (Summary of the Most Relevant Literature Contributions), is a summary of the literature contributions that relate and supports details within the developments of the four hypotheses, as explained throughout the chapter. In several cases, provides literature evidence for claims made within these developments. Accordingly, the reader is invited to consider that summary, while concurrently considering the immediately following sections.

4.7. Summary of the Most Relevant Literature Contributions

Title	Authors	Publication	Conclusions	Association with the Research
Strategic aspects in Sustainability Reporting in oil & gas industry: The comparative case-study of Brazilian Petrobras and Spanish Repsol	Junior, F. H., Galleli, B., Gallardo-Vázquez, D., & Sánchez-Hernández, M. I.	Ecological Indicators (2017)	<p>*There should be multiple criteria of analysis and evaluation for sustainability regarding the importance of sustainable strategies for companies that are, in fact, trying to deal with this challenge. More exactly, some strategic elements, such as Strategic Intent and Values, are barely considered in companies' sustainability approach.</p> <p>*On the other hand, Stakeholders is the aspect that is, by far, more frequent in both cases.</p>	<p><u>Legitimacy Theory:</u> Sustainably disclosures increase the positive attitude towards the company by its stakeholders.</p> <p><u>Adherence to Regulations (H1):</u> GRI is the accepted proxy applied in both academic and research contexts, while studying the corporate sustainability performance. GRI ensures the robustness and consistency of the elements disclosed in the sustainability reports and thus maintains an accepted quality level for the report.</p>
Reconceptualising sustainability assessment	Pope, J., Bond, A., Hugé, J., & Morrison-Saunders, A.	Environmental Impact Assessment Review (2017)	<p>*Proposing a new conceptual framework enables a particular body of practice to be located within the broader field, as we demonstrate by categorizing five examples of sustainability assessment according to the framework.</p> <p>*This framework has value to both researchers and practitioners, as a structure to guide sustainability assessment research and analysis and as the basis for comparing bodies of sustainability assessment practice within the range of possibilities defined by the contours of the framework.</p>	<p><u>Adherence to Regulations (H1):</u> There should be a framework and criteria against which the corporate sustainability performance and reporting can be efficiently assessed. GRI is the international reference and proxy that can achieve this objective.</p>
Sustainability criteria and sustainability compliance index for decision support in product development.	Hallstedt, S. I.	Journal of Cleaner Production (2017)	<p>*A novel approach for how to identify short-term and long-term sustainability criteria and a related compliance index to be used as guidance in the decision-making in the early product development process is presented in the paper.</p> <p>*The contribution is also a validation of the usefulness of the sustainability criteria</p>	<p><u>Adherence to Regulations (H1):</u> There should be quantifiable performance indicators for measuring the quality level of Sustainability Reporting. GRI has a widely accepted performance indicators.</p>

Title	Authors	Publication	Conclusions	Association with the Research
Corporate Sustainability Disclosure in Annual Reports: Evidence From UAE Banks: Islamic versus Conventional.	Nobanee, H., & Ellili, N.	Renewable and Sustainable Energy Reviews (2016)	<p>matrices as decision support.</p> <p>*The overall level of sustainability disclosure based on Sustainability Reporting for banks listed in the UAE financial markets is at a low level.</p> <p>*The degree of the corporate sustainability disclosure of the conventional banks is higher than the Islamic banks. *In addition, the empirical results reveal that the sustainability disclosure affects significantly and positively the banking performance of the conventional banks while no significant effect on the Islamic banks performance</p>	<p>Research Problem: In the banking sector, some banks focuses only on the social dimension of Sustainability Reporting, the overall level of reporting is moderate in some banks and the Sustainability Reporting in the Islamic banks are inconsistent.</p> <p>Legitimacy Theory: Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. Sustainably reporting provides a positive image for the company to its stakeholders.</p> <p>Adherence to Regulations (H1): GRI is the most accepted and applied guidelines for Sustainability Reporting.</p> <p>Independence of Board (H3): The independence of executive directors and the existence of foreign members in the board of directors have a significant positive correlation with Sustainability Reporting.</p>
Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance	Iatridis, G. E.	Emerging Markets Review (2013)	<p>*Environmental disclosure is positively linked to environmental performance. Company attributes, such as large size, the need for capital, profitability and capital spending, are positively associated with environmental disclosure quality.</p> <p>*High quality environmental disclosers display effective corporate governance and would tend to face less difficulties in accessing capital markets. They generally are audited by a big 4 auditor or cross-listed on foreign stock exchanges and display significant levels of managerial and institutional ownership.</p> <p>*High quality environmental disclosures</p>	<p>Research Problem: Most of the researchers studied only one dimension of Sustainability Reporting. Best business practices are providing partial environmental disclosures. The quality level of Sustainability Reporting is very poor.</p> <p>Legitimacy Theory: Sustainably reporting is a tool for gaining the social legitimacy, which justify the managers' voluntary reporting behaviors. Sustainability Reporting meets the needs of both corporate external and internal stakeholders, in addition to being a competitive advantage that attracts investors.</p> <p>Adherence to Regulations (H1): Voluntary</p>

Title	Authors	Publication	Conclusions	Association with the Research
			are value relevant and improve investor perceptions.	<p>sustainability disclosures are low that emphasizes the need for following a certain framework. There is a considerable lack of reporting consistency in the Australian governmental sector. The existence of regulations is a significant guarantee for improving the quality of Sustainability Reporting and reducing the information asymmetry. GRI is the most accepted and applied guidelines for Sustainability Reporting.</p> <p>Assurance of the Report (H2): The existence of a third party to audit the report acts as a guarantee for the quality and reliability of the report components. Most of the highly qualified report were audited by one of the big 4 auditors.</p>
Ambiguous but tethered: An accounting basis for Sustainability Reporting	Joseph, G.	Critical Perspectives on Accounting (2012)	<p>*The paper suggests the need for “alignment” through an emphasis on principles based on normative stakeholder theory (Reed, 1999, 2002) that can draw from accounting without usurping the stakeholder goals underlying sustainability.</p> <p>*This normative approach adds to the discourse on sustainability accounting by envisaging a wider and more localized perspective on firm accountability that could potentially stimulate the innovative endeavors of the corporation in the pursuit of wider wealth creation.</p>	<p>Legitimacy Theory: A company has to increase its sustainable positive impacts and decrease the negative social and environmental impacts to gain that legitimacy.</p> <p>Adherence to Regulations (H1): GRI is the most accepted and applied guidelines for Sustainability Reporting. GRI increase the transparency of Sustainability Reporting and this consequently leads to improving the corporate sustainability performance that reflects that transparent reporting.</p>
Sustainability inter-linkages in reporting vindicated: a study of European companies	Lozano, R.	Journal of Cleaner Production (2013)	*Although not explicitly demanded by the Sustainability Reporting guidelines, the coverage of the interlinking issues ranged from medium to high, whilst performance ranged from low to high.	<p>Legitimacy Theory: Sustainably reporting is a competitive advantage that increases investors trust in and perception about the company.</p> <p>Adherence to Regulations (H1): GRI is the</p>

Title	Authors	Publication	Conclusions	Association with the Research
			<p>*Given the holistic nature of business and of sustainability, and the lack of inclusion of this in the current reporting guidelines, the paper calls for an update of the theory, and of the guidelines, to ensure that a more systemic approach is adopted in business praxis.</p>	<p>m most accepted and applied guidelines for Sustainability Reporting.</p>
<p>An analysis of indicators disclosed in corporate sustainability reports</p>	<p>Roca, L. C., & Searcy, C.</p>	<p>Journal of Cleaner Production (2012)</p>	<p>*The indicators disclosed in sustainability reports were relatively evenly distributed along the triple bottom line of sustainability. *The research also revealed an incredible diversity in the indicators reported. *This underscores the difficulty of developing standard sets of indicators that are broadly applicable.</p>	<p>Research Problem: The practice of Sustainability Reporting is still at its infancy and includes confusing issues. Legitimacy Theory: Sustainably reporting is a tool for gaining the social legitimacy, which aims at satisfying all corporate stakeholders' needs. A company has to increase its sustainable positive impacts and decrease the negative social and environmental impacts to gain that legitimacy. Adherence to Regulations (H1): GRI is the m most accepted and applied guidelines for Sustainability Reporting. GRI increase the transparency of Sustainability Reporting and this consequently leads to improving the corporate sustainability performance that reflects that transparent reporting. The existence of regulations is a significant guarantee for improving the quality of Sustainability Reporting.</p>
<p>Sustainability Reporting by Australian public sector organizations: Why they report</p>	<p>Farneti, F., & Guthrie, J.</p>	<p>Accounting Forum (2009)</p>	<p>*Their social and environmental reporting was informed by the latest GRI and aimed at mostly internal stakeholders. *The annual report was only one of the media used for disclosure and adoption was driven by a key individual in the organization.</p>	<p>Legitimacy Theory: Following the GRI, increases corporate legitimacy in the society. Adherence to Regulations (H1): GRI is the most accepted and applied guidelines for Sustainability Reporting. Sustainability reports not complying with guidelines does not meet the stakeholders' needs, especially the external ones. Reports complying with</p>

Title	Authors	Publication	Conclusions	Association with the Research
A Long-haul Destination: Sustainability Reporting Among Tour Operators	Wijk, J. V., & Persoon, W.	European Management Journal (2006)	<p>*In comparison to other industry sectors, tour operators perform weak at best.</p> <p>*Considerable differences in reporting behavior were detected within the sector. Large tour operators report far better than medium-sized and small firms, and traditional tour operators report better than their online competitors.</p> <p>*Little difference was detected in reporting between UK, German and Dutch tour operators.</p>	<p>GRI produce more qualified reports than others. Following the GRI, increases corporate legitimacy in the society.</p> <p>Research Problem: The level of Sustainability Reporting in the tourism sector is very deficient.</p> <p>Adherence to Regulations (H1): GRI is the most accepted and applied guidelines for Sustainability Reporting.</p> <p>Type of Information (H4): The inclusion of quantitative data is one of the criteria for a qualified sustainability report.</p>
Sustainability accounting- a brief history and conceptual framework	Lamberton, G.	Accounting Forum (2005)	<p>*The paper developed a comprehensive reporting model that presents an enormous challenge to business organizations, requiring a significant commitment of resource to achieve widespread implementation.</p> <p>*Failure to meet this challenge enables business organizations to continue to avoid accountability for their continuing unsustainability.</p>	<p>Research Problem: There is an insistent requirement for future research on assessing and improving the quality of Sustainability Reporting.</p> <p>Adherence to Regulations (H1): Regulations prevent biased sustainability reports. GRI increases the transparency of Sustainability Reporting and this consequently leads to improving the corporate sustainability performance that reflects that transparent reporting. GRI provides the qualitative attributes that is capable of measuring a corporate sustainable performance.</p> <p>Assurance of the Report (H2): The existence of a third party to audit the report acts as a guarantee for a qualified sustainability report. It also acts as a motivator for improving the corporate sustainability performance, reflected in the report.</p> <p>Type of Information (H4): Stakeholders are</p>

Title	Authors	Publication	Conclusions	Association with the Research
				unable to decide on the quality of sustainability reports themselves, especially the credence information.
Social disclosure, legitimacy theory and the role of the state	Husillos, A. A., Larrinaga, C., & Spence, C.	Accounting, Auditing & Accountability Journal (2009)	<p>*Social and environmental disclosure is strategically used to legitimize a new production process through the manipulation of social perceptions, and that this strategy was supported implicitly and explicitly through ideological alignment with the State.</p> <p>*In contrast with the dominant approach to legitimacy theory that considers the relationship of the firm with its stakeholders, the present study widens the scope of LT to consider the interplay between firm legitimating strategies and state support for such strategies.</p>	<p>Legitimacy Theory: Legitimacy gap happens when a company does not satisfy its stakeholders' needs. Legitimacy theory justifies the voluntary Sustainability Reporting behavior of managers. Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. Sustainability Reporting provides a positive image for the company to its stakeholders.</p> <p>Adherence to Regulations (H1): Adherence to regulations solves the problem of unreliable sustainability reports.</p>
Legitimizing reputation/the reputation of legitimacy theory	Bebbington, J., Gonzalez, C. L., & Abadia, J. M.	Accounting, Auditing & Accountability Journal (2008)	<p>*Given the current state of our understanding of corporate social responsibility reporting in stand-alone (and other) formats, openness to a multitude of theoretical perspectives is appropriate.</p> <p>*Concepts of legitimacy and reputation can and should be distinguished from one another.</p>	<p>Legitimacy Theory: Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. Legitimacy theory acts as a conceptual framework for analyzing and understanding the sustainability disclosures.</p>
Environment disclosure in Malaysia annual reports: A legitimacy theory perspective	Ahmad, N. N., & Sulaiman, M.	International Journal of Commerce and Management (2004)	<p>*Findings show some limited support for legitimacy theory in explaining the nature of disclosure, as well as the reasons for the disclosure.</p> <p>*Extent of environmental disclosures is, however, very low.</p>	<p>Legitimacy Theory: Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. Legitimacy theory explains the voluntary Sustainability Reporting behavior of managers.</p> <p>Adherence to Regulations (H1): Adherence to regulations solves the problem of unreliable sustainability reports. The absence of regulations is a barrier for a qualified sustainability report.</p>

Title	Authors	Publication	Conclusions	Association with the Research
				<p><u>Type of Information (H4):</u> Quantitative data is an aspect of a qualified sustainability report, as it makes the report understandable and comparable.</p>
<p>A Theoretical Framework For CSR Practices: Integrating Legitimacy Theory, Stakeholder Theory and Institutional Theory</p>	<p>Fernando, S., & Lawrence, S.</p>	<p>Journal of Theoretical Accounting Research (2014)</p>	<p>*The legitimacy theory, stakeholder theory and institutional theory have similarities and are interrelated. *They can be integrated and linked to CSR practices in order to explain motives of such practices in a multi-theoretical perspective.</p>	<p><u>Legitimacy Theory:</u> Legitimacy theory is the most common theoretical basis applied in studies of sustainability disclosures. Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. Legitimacy theory explains the voluntary Sustainability Reporting behavior of managers. Legitimacy gap threatens organizational survival.</p>
<p>Can less environmental disclosure have a legitimising effect? Evidence from Africa</p>	<p>de Villiers, C., & van Staden, C.</p>	<p>Accounting, Organizations and Society (2006)</p>	<p>*The increase and decrease in the publication of general and specific information are consistent with legitimacy theory. *Legitimizing objectives may also be served by changing the type (general/specific) or reducing the volume of environmental disclosures.</p>	<p><u>Legitimacy Theory:</u> Legitimacy theory is the most common theoretical basis applied in studies of sustainability disclosures.</p>
<p>Refinements to Legitimacy Theory in Social and Environmental Accounting</p>	<p>Tilling, M. V.</p>	<p>Social and Environmental Accountability Journal (2004)</p>	<p>*Legitimacy theory offers researchers, and the wider public, a way to critically unpack corporate disclosures. *However the understanding and study of the theory must become more sophisticated, drawing on developments both within the accounting literature and beyond. Only then will the full potential of legitimacy theory for examining a wide range of disclosures be fully realized.</p>	<p><u>Legitimacy Theory:</u> Legitimacy theory is the most common theoretical basis applied in studies of sustainability disclosures. Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. The annual reporting is the way of legitimizing a system with its economic, social and environmental activities.</p>
<p>Sustainability Reporting: The role of "Search", "Experience" and "Credence" information</p>	<p>Comyns, B., Figge, F., Hahn, T., & Barkemeyer</p>	<p>Accounting Forum (2013)</p>	<p>*The different types of information need to be taken into consideration when considering measures to improve quality. *While search and experience information will be either high or improve over time,</p>	<p><u>Research Problem:</u> There is an insistent requirement for future research on assessing and improving the quality of Sustainability Reporting. The quality level of Sustainability Reporting is very poor.</p>

Title	Authors	Publication	Conclusions	Association with the Research
			<p>these aspects of reporting can remain voluntary with market forces being sufficient to drive quality. *However, with regard to credence information more stringent measures such as regulation or assurance need to be applied as the quality of this type of information will remain low with no foreseeable improvement in the absence of more stringent measures.</p>	<p><u>Legitimacy Theory:</u> Sustainability Reporting is a tool to gain legitimacy of the society. Legitimacy theory explains the voluntary Sustainability Reporting behavior of managers. Legitimacy gap occurs when a discrepancy exists between the value systems of the company and the society.</p> <p><u>Adherence to Regulations (H1):</u> The lack of regulations is a barrier for a qualified sustainability report. Lack of quantitative indicators, as those of the GRI, leads to a deficient sustainability report. Sustainability Reporting in the Australian oil & gas industry is not complying with the GRI or other regulations and thus is very poor in quality.</p> <p><u>Type of Information (H4):</u> Stakeholders are unable to decide on the quality of sustainability reports themselves, especially the credence information that requires an independent auditor to do so.</p>
<p>Sustainability strategies of the company TimorL: extending the applicability of legitimacy theory</p>	<p>Eugenio, T. P., Lourenco, I. C., & Morais, A. I.</p>	<p>Management of Environmental Quality: An International Journal (2013)</p>	<p>*Sustainability strategies remain a powerful legitimacy tool. *The paper contributes to a better understanding of how companies behave when they are faced with legitimacy gaps and how they act to restore their legitimacy.</p>	<p><u>Research Problem:</u> Most of the researches that studied Sustainability Reporting are qualitative, while the empirical studies are very few.</p> <p><u>Legitimacy Theory:</u> Legitimacy gap threatens organizational survival. A company has to reduce/eliminate legitimacy gap by satisfying its stakeholders' needs. Legitimacy theory explains the voluntary Sustainability Reporting behavior of managers. Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches.</p> <p><u>Adherence to Regulations (H1):</u> GRI is a globally accepted and used regulating body</p>

Title	Authors	Publication	Conclusions	Association with the Research
				for Sustainability Reporting. Reports complying with GRI produce more qualified reports than others. Complying with the GRI guarantees the organizational legitimacy.
Corporate social responsibility and tax aggressiveness: a test of legitimacy theory	Lanis, R., & Richardson, G.	Accounting, Auditing & Accountability Journal (2013)	<p>*There is a positive and statistically significant association between corporate tax aggressiveness and CSR disclosure, thereby confirming legitimacy theory in the context of corporate tax aggressiveness.</p> <p>*There is empirical evidence in support of legitimacy theory as an explanation for why specific corporations disclose more CSR-related information than others.</p>	<p>Legitimacy Theory: Legitimacy gap threatens organizational survival. A company has to reduce/eliminate legitimacy gap by satisfying its stakeholders' needs. Legitimacy theory explains the voluntary Sustainability Reporting behavior of managers. Organizational legitimacy is the most used legitimacy concept in social and environmental accounting researches. There is an inversely proportional relationship between organizational legitimacy and voluntary sustainability disclosures.</p>
Evaluating environmental disclosures: The relationship between quality and extent measures	Hooks, J., & Staden, C. J.	The British Accounting Review (2011)	<p>*The quality of disclosure is highly correlated to the extent of reporting measured by a sentence count.</p> <p>*It is proposed that a quality per sentence measure could help to distinguish between companies making high quality and low quality disclosures, as it takes into account both the extent and the quality of the disclosures.</p>	<p>Research Problem: The quality of sustainability disclosures provided by most of the companies in the Center for Business and Sustainable Development is poor. The quality of Sustainability Reporting is the fundamental cornerstones of the reporting.</p> <p>Adherence to Regulations (H1): GRI guarantees a reliable, consistent and comparable Sustainability Reporting. There is a high correlation between the quality of the sustainability report and its comprehensiveness.</p>
Environmental reporting: Toward enhanced information quality	Raiborn, C. A., Butler, J. B., & Massoud, M. F.	Business Horizons (2011)	*Drawing on the experiences of firms employing quality measures and reporting, this article presents an environmental cost reporting model to provide greater transparency on environmental impact of business operations to managers and firm stakeholders.	<p>Research Problem: Best business practices are providing partial environmental disclosures, which lead to negative financial impacts on the company. Many of sustainability disclosures are considered as irrelevant. Stakeholders face a sophisticated decision making because of the inefficient Sustainability Reporting.</p>

Title	Authors	Publication	Conclusions	Association with the Research
				<p><u>Adherence to Regulations (H1):</u> GRI guarantees a reliable, consistent and comparable Sustainability Reporting. GRI reporting guarantees the organizational legitimacy. Sustainability reports not complying with guidelines are very poor. Reports complying with GRI produce more qualified reports than others.</p> <p><u>Type of Information (H4):</u> Type of information in the sustainability report affects the quality of the report. Quantitative information, unlike qualitative information, has a positive impact on the quality of the report.</p>
Assessing quality assessment of corporate social reporting: UK perspectives	Hammond, K., & Miles, S.	Accounting Forum (2004)	*The paper concludes that: corporations adopt less comprehensive definitions of quality than QAs; QAs adopt more stringent definitions of quality than academics; methodological problems of quality assessment highlighted in the academic literature are experienced by QAs; and that benchmarking and award schemes are important drivers of CSR.	<p><u>Research Problem:</u> The quality level of Sustainability Reporting adopted by companies is lower than that adopted by quality assessors and academics.</p> <p><u>Adherence to Regulations (H1):</u> The adoption of reporting guidelines is an indicator for a qualified sustainability report. The absence of regulatory bodies for Sustainability Reporting in the country political system has a significant negative impact on the quality of reporting. GRI is a globally accepted and used regulating body for Sustainability Reporting.</p> <p><u>Assurance of the Report (H2):</u> The existence of a third, independent auditor is an attribute for a qualified sustainability report. It also acts as a motivator for improving the corporate sustainability performance, reflected in the report.</p> <p><u>Type of Information (H4):</u> Quantitative data is an important criterion for a qualified sustainability report.</p>

Title	Authors	Publication	Conclusions	Association with the Research
Exploring the use of online corporate sustainability information	Rowbottom, N., & Lymer, A.	Accounting Forum (2009)	<p>*Sustainability disclosures are found to attract approximately a tenth of all corporate Website requests.</p> <p>*Environmental and ethical disclosures outside the Annual Report are the most popular sources of online corporate sustainability information whilst ‘standalone’ Sustainability and/or Ethics Reports attract comparatively few requests.</p>	<p>Research Problem: A considerable percentage of the investors and analysts consider the Sustainability Reporting very deficient.</p> <p>Assurance of the Report (H2): The existence of a third, independent auditor acts as a motivator for improving the corporate sustainability performance, reflected in the report.</p>
Governance, media and the quality of environmental disclosure	Rupley, K. H., Brown, D., & Marshall, R. S.	J. Account Public Policy (2012)	<p>*It is suggested that, voluntary environmental disclosure quality is positively associated with environmental media coverage, negative environmental media and board attributes of independence, diversity, and expertise.</p> <p>*Results from supplemental analysis suggest that institutional investors exert influence over managerial decisions on environmental reporting only in the face of negative environmental media.</p> <p>*Results from longitudinal analyses indicate that the quality of environmental disclosures increases over time.</p>	<p>Research Problem: Most of the researches that studied Sustainability Reporting focused on the quantity, rather than the quality, of the reporting. There is an insistent requirement for future research on assessing and improving the quality of Sustainability Reporting.</p> <p>Adherence to Regulations (H1): Environmental reporting is largely unregulated. The existence of regulations is a significant guarantee for improving the quality of Sustainability Reporting.</p> <p>Independence of Board (H3): There is a positive relationship between the independence of board of directors and the quality of Sustainability Reporting.</p>
Measuring sustainable development performance: Possibilities and issues	Bebbington, J.	Accounting Forum (2009)	<p>*SD is moving beyond being a vaguely specified goal that everyone would aspire to, to one that has specific meaning in particular settings, albeit that its meaning remains contested.</p>	<p>Research Problem: Most of the researches that studied Sustainability Reporting are qualitative, while the empirical studies are very few.</p>

Chapter 5

The Research Methodology and Design

Chapter 5: The Research Methodology and Design

5.1. Chapter Introduction

The previous chapter of Hypotheses Development led to developing the four research hypotheses that will be used to answer the research questions. However; these research hypotheses are theoretical statements that need to be converted into a practical form, in order to be empirically applied and tested. Based on that, this chapter aims at developing the empirical methodology and design that will be followed throughout the research. The chapter commences with **5.2. Planning for Research Methodology** that paves the way for developing the consequent elements of the research methodology. These elements are represented in **5.3. The Research Philosophy and Approach of Theory Development, 5.4. The Research Strategy and Methodological Choice, 5.5. The Research Time-Horizon, 5.6. The Research Techniques and Procedures**. Grounded by a methodological theory, the research design mainly provides the quantitative measures that are used to test the variables of the research hypotheses, while following the convenient research strategy, as detailed in **5.6.1. The Research Data Considerations, 5.6.2. Data Variables**. Moreover, the research design includes all the considerations of the real life data that was collected and analyzed to test the proposed relationships between the variables, as detailed in **5.6.3. Data Sources, 5.6.4. Data Acquisition, 5.6.5. Data Reliability/Validity** and **5.6.6. Data Analysis**. Finally, **5.7. Chapter Summary** reviews what has been handled within the chapter and **5.8. Summary of Most Relevant Empirical Literature Review** provides a summary for the most important practical relevant literature, and, based on the output of this chapter, introduces the next chapter.

5.2. Planning for Research Methodology

As would be expected, -and previously mentioned-, significant considerations are given to the methodology and design employed for the research and thus, appropriate decisions were made in this context. The research methodology and design are considered and presented in the context of the Research Onion layers (Saunders et al., 2016). The research decisions taken towards the choices of the research onion layers are grounded by the methodological theory of the research.

In the planning stage of this research, the first step that sparked the research idea is the research problem, -which is the poor quality level of sustainability reporting-, that led to research questions, which are mainly what are the reasons and factors behind this poor quality level and why are Sustainability Reports not fulfilling their objective of assisting proper decision-making. This research initiated from and is motivated by that problem and consequently those questions evolved from two sources. Firstly, the substantive theory of Legitimacy Theory and secondly the relevant literature review. The aim of the research is to obtain insights into that problem, while implicitly providing answers to those questions. This is reached through employing the suitable research methods that can best achieve that aim. Based on this, it can be realized that a Pragmatic Approach is followed for the planning of the research (Punch, 2013).

Following the **Pragmatic Approach for Research Planning**, the research progresses as follows. It first seeks to identify the most appropriate methods and techniques to answer the research questions in the most effective and efficient way. The research design is accurately preplanned before pursuing the empirical part of the research that uses well-structured, mostly quantitative data. The research questions are predetermined and enable an introduction of the research context and problem. The data that is used in the empirical study are tightly structured. There are quantitative measures and are the primary focus of the data collection process (Punch, 2013; Abd El-Rahman, 2018).

In a simplified way, the Pragmatic Approach for Research Planning depends on the existence of a research problem or question, at the start of the research. A solution or answer is achieved through the research completion. In the social science, the research problem or question evolves mainly from the research substantive theory (Legitimacy Theory in this research), the relevant literature (the indicated consensus on the poor quality of sustainability reporting) and/or practical problems (the consensus by practitioners on the poor practice of corporate sustainability reporting). This approach is unlike the *Paradigm-driven Approach for Research Planning* that depends on the existence of a paradigm, at the beginning of the research. In this flow, research questions are then developed and subsequently convenient research methods identified to best answer these questions (Punch, 2013).

There is much benefit in having a well-structured research design in advance of the empirical part of the research. This importance lies in that, the more tightly structured the research design and in turn, the research questions and data, the more likely there will be a well-developed conceptual framework resulting from this research (Punch, 2013). That increases the probability of achieving significant contribution of the research, represented in developing a conceptual framework for a Quality Sustainability Report based on objective criteria.

After explaining the approach followed in order to plan for the research, one could divide the research plan into two steps. Firstly, developing the research questions and secondly, employing appropriate research methods that can best answer these questions. The first step is fulfilled in previous chapters, while the second step is fulfilled through some following sections of the thesis, that determine and apply appropriate research methodology. However; the research methodology cannot be developed unless the research paradigm is decided on (Saunders et al., 2009).

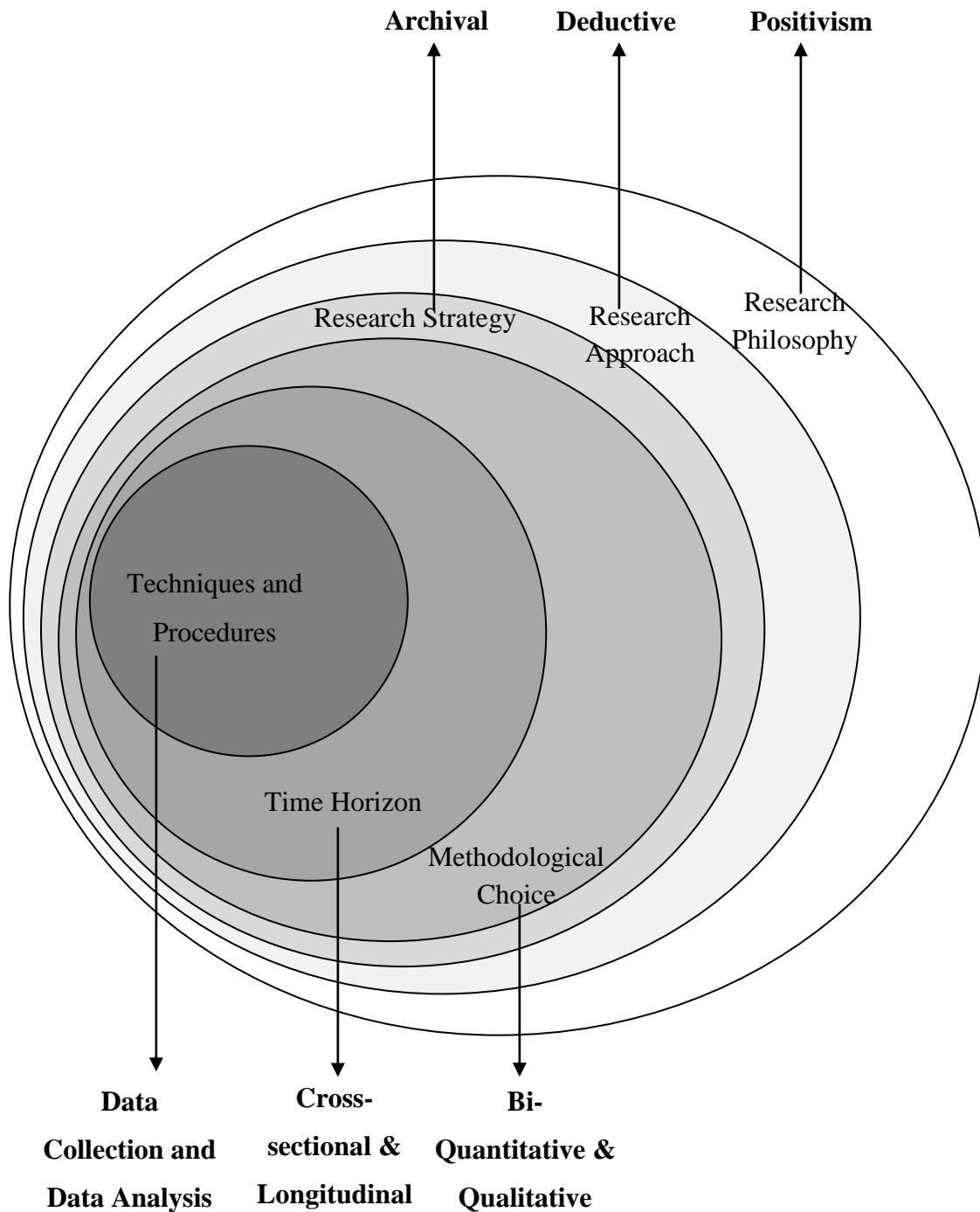
The research **Paradigm** comprises the main beliefs about the concepts that constitute the research phenomenon being tested. It consists of three components that are the research ontology, epistemology and methodology, in which these components are

dependent on each other respectively. The **Ontology** is concerned with the nature of the reality in relation to the main concepts/phenomena being tested. A main concept that is studied in this research is the *Sustainability Reporting*. Where, the research deals with the sustainability reporting as a separate social construct, which has its own structure and guidelines, separate from the social actors, e.g. corporate managers, who enable and deal with that reporting. The same approach applies to the other research main concepts, -i.e. Adherence to Regulations, Assurance of Report, Independence of Board and Type of Information. Based on that, the research is following **Objectivism** ontology. This is unlike the *Subjectivism* ontology, which considers the social phenomena as being a result of the perceptions and the interactions of the social actors (Punch, 2013; Saunders et al., 2009).

After deciding on the research ontology, it is appropriate to decide on the research epistemology upon which the ontology, mentioned earlier, defends. The research **Epistemology** explains the relationship between the researcher and the concept/phenomenon being researched. Based on the objectivism ontology of the research, as previously explained, the researcher views this research from the viewpoint of a natural scientist, who considers facts only to be reality. In the present instance, the researcher collects data about objects, i.e. corporate sustainability reports. However, subjective issues such as stakeholders' feelings, perceptions and attitudes towards these reports, are not considered. This way, the researcher attempts to secure objective data that is free from any bias and which is then objectively analyzed (Punch, 2013; Saunders et al., 2009).

Fulfilling the research ontology and epistemology paves the way to fulfill the third component in the research paradigm that is the research methodology, which is dependent on the ontology and epistemology respectively, and for which this chapter is mainly developed. The research **Methodology** is intended to provide the scientific methods that are most convenient to study the reality of concern. In other words, it helps the researcher in answering the crucial question of how findings can be reached regarding the proposed research relationship(s). As shown in Figure 5.1., the research methodology

comprises several further components, which represents the components of the well-known Research Onion, as it is explained in the next sections of this chapter.



5. 1 Research Onion (Saunders et al., 2016; Punch, 2013; Saunders and Tosey, 2013)

5.3. The Research Philosophy and Approach of Theory Development

Punch (2013) demonstrates that, in order to take robust decisions about the research design and methods to be used, these decisions have to be grounded by an appropriate Methodological Theory that provides the reasoning behind the methods and approaches used in the research. The Methodological Theory involves the assumptions about what constitutes knowledge of the research topic being studied and subsequently determining the appropriate research methods required for building this knowledge. These assumptions comprise the research Philosophy, which represents the first layer of the research onion.

According to Saunders and Tosey (2013), the research Philosophy is a critical component that significantly affects all other layers of the research onion. The Philosophy pursued by the research concerns itself with what constitutes the acceptable knowledge affecting the quality of sustainability reporting and the associated methodological process for developing it. Accordingly, this implies that, the research philosophy has a considerable impact on the research Approach to Theory Development, Strategy, Methodological Choice, and time horizon, which represent the second, third, fourth and fifth layers of the research onion respectively. Equally, the research Philosophy has a significant impact on the data Techniques and Procedures used to fulfill the research objectives, which represent the sixth and core layer of the research onion.

The research seeks to follow the **Positivism Philosophy**, with essentially a **Deductive Approach**, in which the research aims at seeking appropriate confirmation for an existed theory, i.e. Legitimacy Theory, -as explained in chapter 3-. The research objective data, in order to reach law-like generalizations that develop knowledge. Historically, Positivism based research and philosophy has dominated the science. It studies knowledge using value-free quantitative measures, which if used by different researchers will give the same results. Based on that, a scientific method is applied that empirically tests hypotheses using a large sample of mostly structured, quantitative data. Unlike other research philosophies, i.e. realism, interpretivism and pragmatism, the

research is not affected by any subjective issues so that the researcher's values or other surrounding viewpoints will not influence the research procedures held (Punch, 2013; Saunders and Tosey, 2013; Hinton and McMurray, 2017).

5.4. The Research Strategy and Methodological Choice

After fulfilling the critical task of the research philosophy and approach, which represents the first and second layers of the research onion, a robust research strategy can be determined as follows. As mentioned earlier in the first section of this chapter, the research Philosophy has a significant impact on the rest of the research onion layers. And since this research is following a Positivism Philosophy, an **Archival Strategy** is followed in addressing the research questions that is normally associated with the Positivism Philosophy. This is so because virtually all the data used in this research was retrieved from relevant repositories of corporate data or the archives of individual companies themselves.

The research chooses appropriate research methods and procedures that can best help in answering the research questions evolved from the literature, in order to finally achieve the targeted research objectives. A major criterion used to judge the validity of research is the existence of a good Question-Method fit. Thus, the research questions are set clearly within the research context, -prior to the research methods, which should be decided on to fit answering those questions. Quantitative questions tend to usually require quantitative methods to best answer them, while qualitative questions require using qualitative methods to answer them. However, mixed questions that requires using mixed research methods (Punch, 2013).

Each research question has methodological implications, based on which methodological decisions are appropriately taken. Since, the overall main question of this research is "**What are some of the frequently occurring Features Affecting** the quality of Sustainability Reporting?" This is answered through Sub questions as explained in chapter 4. Such quantitative questions tend to require using mostly quantitative methods

to answer them. Therefore, a **Bi-Methodological Choice** is applied that includes mostly **Quantitative** methods as well as few Qualitative methods, which is the third layer of the research onion. A quantitative data collection technique and in turn, a convenient data analysis procedure are used by the research (Saunders and Tosey, 2013). In addition, some qualitative methods are used when conducting some confirming discussions. Such discussions were held after completing the empirical tests in order to seek the endorsement or confirmation from practitioners (explained in the next chapter). The data collection technique and data analysis procedure used by the research are explained in the next section of the research data considerations.

Based on the explanatory substantive theory of the research- Legitimacy Theory, explained in chapter 3, the research tests the cause-and-effect relationship for the factors affecting the quality of sustainability reporting. Given the gap in the empirical studies implemented to study the quality of sustainability reporting, as explained in the research problem section of chapter 1, it can be concluded that these empirical studies fall into mainly two categories. The first category is the qualitative empirical studies that employed the Content Analysis method in evaluating the corporate sustainability reporting (de Villiers and van Staden, 2006; Wijk and Persoon, 2006; Rowbottom and Lymer, 2009; Hooks and Staden, 2011; Roca and Searcy, 2012; Lanis and Richardson, 2013; Junior et al., 2017).

The second category is the quantitative empirical studies that employed the Regression Analysis method. Regression analysis has been used by several studies in evaluating the corporate sustainability reporting (Brown and Hillegeist, 2007; Rupley et al., 2012; Lanis and Richardson, 2013; Iatridis, 2013; Fernandez-Feijoo et al., 2016; Nobanee and Ellili, 2016). In this instance, qualitative content analysis method is not convenient to answer the quantitative research question, i.e. it does not fulfill the Question-Method fit. However, the quantitative regression analysis method does and is convenient to answer the quantitative research question, i.e. it provides a robust Question-Method fit as follows.

The research employs explanatory research techniques that use Empirical/Experimental techniques for testing such potentially causal relationships between different variables under controlled conditions. Empirical/Experimental research uses quantitative data required to show the difference in, and strength of relationships between, different research variables in order to make inferences about tested variables (Fawcett and Downs, 1986). This explanatory, quantitative research has to test the explanatory theory, of the effect of the five factors discussed in the literature review chapter, through making precise predictions about the change in a certain factor or variable as a result of the change in one or more other factor(s) or variable(s). These predictions can best determine accurate cause-and-effect relationships among the different variables, which are required by the research. Accordingly, the best statistical analysis to fulfill these tasks is the **Regression Analysis**, which will be employed by the research (Fawcett and Downs, 1986; Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; Hosmer et al., 2013; Hinton and McMurray, 2017).

Regression analysis has two forms that are simple regression analysis and multiple regression analysis. **Simple Regression Analysis** predicts the variation/change in the value of the dependent variable because of the variation/change in the value of one independent variable. The statistical equation used for the simple regression analysis is $(Y = \alpha + \beta X)$. In which, Y denotes for the dependent (criterion / response) variable, α denotes for the constant, X denotes for the independent (predictor) variable and β denotes for the regression coefficient of the independent (predictor) variable (Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; McClave et al., 2005).

The **Multiple Regression Analysis** predicts the variation/change in the value of the dependent variable because of the variation/change in the value of two or more independent variables. The statistical equation used for the multiple regression analysis is $(Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots)$. In which, Y denotes for the dependent (criterion) variable, α denotes for the constant, X_1 denotes for the first independent (predictor) variable, β_1 denotes for the regression coefficient of the first independent (predictor) variable, X_2 denotes for the second independent (predictor) variable, β_2 denotes for the

regression coefficient of the second independent (predictor) variable and the same pattern with other independent variables, if any (Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; McClave et al., 2005).

Based on that, the research employs a Multiple Regression Analysis. In which, the research predicts the change in the Quality of Sustainability Reporting that acts as the Dependent Variable as a result of the change in five Independent Variables, which are the Adherence to Regulations, Assurance of Report, Independence of Board, Independence of Chair and Type of Information. A detailed explanation of the variables' representation and testing through the Regression Analysis method is provided in the Data Analysis section (5.6.) of this chapter.

Various types of regression analyses are applied in the social sciences. The most well-known and applied among these types are Linear Regression and Logistic Regression. Literature evaluated by the researcher suggests that, quantitative empirical evaluations for corporate sustainability reporting, have used either an Ordinary Least Squares (OLS) Linear Regression or Logistic (LOGIT) Regression (Brown and Hillegeist, 2007; Rupley et al., 2012; Salama et al., 2012; Lanis and Richardson, 2013; Iatridis, 2013; Shamil et al., 2014; Fernandez-Feijoo et al., 2016; Nobanee and Ellili, 2016; Abd El-Rahman, 2019). Linear Regression is used where the dependent variable of the research relationship is represented in Ratio values, i.e. normal numbers. However, Logistic Regression is used when the dependent variable is represented in Category values (Categorical), i.e. values representing different categories (Montanes et al., 2014; Fernandez-Feijoo et al., 2016; Koletsia and Pandis, 2017).

Since **Logistic (LOGIT) Regression (LR)** is the mathematical modeling approach that has the ability to model and then explain the change occurring in a categorical response variable in the form of numerical values, as a result of the change occurring in some predictor variables (Kleinbaum and Klein, 2010; Kadzin'ski et al., 2012; Croux et al., 2013; Hosmer et al., 2013; Montanes et al., 2014). Accordingly, the Linear Regression is not convenient to be applied in this research because the research

dependent variable is not represented in ratio values but it is represented in categories. In which, the research dependent variable that is the Quality of Sustainability Reporting (QSR) is divided into categories of quality levels as it is explained in the next section of this chapter. Then, the **Logistic (LOGIT) Regression (LR)** is the most convenient type of regression to be applied in this research.

Furthermore, within the Logistic Regression, there are some subtypes of regression analyses. Logistic Regression is frequently used when the research question could be answered within two choices, e.g. Yes/No questions. Then, the dependent variable is represented in 2 categories and in this case, it is called (Binary Logistic Regression). On the other side, researches frequently encounter questions that could not be answered in simply answered in Yes/No, however, a wide range of possible responses can best answer the research question. Then, the dependent variable is represented in more than 2 categories. If these categories are not ordered, then it is called (Multinomial Logistic Regression). If the dependent variable is represented in more than 2 categories and they are ordered, then it is called (Ordinal Logistic Regression) (Kleinbaum and Klein, 2010; Croux et al., 2013; Shamil et al., 2014; Fernandez-Feijoo et al., 2016; Koletsia and Pandis, 2017).

Accordingly, the most convenient Logistic Regression type to be applied in this research is the **Ordinal Logistic Regression (OLR)**. **OLR** is the most appropriate statistical technique that can test a proposed relationship, for which the categories of the dependent variable (QSR) have a natural order of more than two categories, while taking into consideration the rank ordering of the outcomes (Kleinbaum and Klein, 2010; Hosmer et al., 2013). In which, QSR is measured by 6 ordered categories representing 6 quality levels of sustainability reporting, as it is explained in details in the next section of this chapter.

5.5. The Research Time-Horizon

After fulfilling the critical task of the research methodological choice, which represents the second layer of research onion, a robust research strategy can be determined as follows. As mentioned earlier in the first section of this chapter, the research Philosophy has a significant impact on the rest of the research onion layers. And since this research is following a Positivism Philosophy, an Archival Strategy is followed in addressing the research questions that is normally associated with the Positivism Philosophy. As the fourth layer of the research onion, an Archival Strategy is compatible with the fifth layer of the research onion, which is the Time-Horizon. In which, it enables testing the research data in both **Cross-Sectional** and **Longitudinal** horizons over subsequent time periods, that is required by the research. In which, subsequent data testing periods are divided into annual periods, as quantitative data is tested for the following 5 years of 2011, 2012, 2013, 2014 and 2015 inclusively. So that, all the research data cases are tested at a specific point of time that is each individual year, i.e. all the research data cases are tested in 2011, all the research data cases are tested in 2012 and so on till reaching 2015. Based on that, the research data are tested on a Cross-Sectional time horizon. On the other side, the same data cases are tested over several points of time that are the subsequent five years, i.e. the same data cases are tested over the five years of 2011 till 2015. Based on that, the research data are tested on a Longitudinal time horizon (Saunders and Tosey, 2013).

This way, the decisions taken towards the first five layers of the research onion have been presented and grounded by the research methodological theory. However, the last and core layer of the research onion that is concerned with the decisions taken towards the techniques and procedures of data collection and analysis are fully explained in the next two sections of this chapter, which are the research data considerations and data analysis, respectively.

5.6. The Research Techniques and Procedures

5.6.1. The Research Data Considerations

As previously explained in the first section of this chapter, this research has a well-structured design, in which it is tightly structured before proceeding in the empirical part of the research, which is required in order to enable the development of a robust conceptual framework (Punch, 2013). Therefore, this significantly helps in achieving the main aim of the research that is developing a conceptual framework for factors affecting the quality of sustainability reporting.

Having such a well-structured design necessitates a clear identification for the data variables. A precise conceptual defining for each data variable, together with an identification of the variables' measurement, is used as a way to structure the research data that is in turn used to test the proposed research relationships. Moreover, the lack of fulfilling this precise determination for data and its variables affects negatively on the research credibility and understandability (Punch, 2013). Based on that, this section is dedicated for the explanation of the research data with all its required considerations.

As being a quantitative research, it seeks to reach numerical outcomes that can best answer the research questions. In which, Regression Analysis is employed that aims at finding an explanation for the variation in one factor as a result of variation in another factor(s), so that these varying factors are called Variables. In regression analysis, the variables are mainly classified into two types which are Dependent and Independent variables. **Dependent Variable** is that variable that is the research is targeting to measure as its outcome measure and it is predicted to be affected by independent variable(s). While the **Independent Variable** is that variable determined by the researcher and which is predicted to affect the variation/change in the dependent variable (Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; Hinton and McMurray, 2017).

Moreover, there is another type of variables that is called **Control Variable**, which can be one or more employed variables. The importance of employing the control variables is that as being an experimental research, this research will not be able to test the causal relationship unless it is implemented under controlled conditions. In which, the effect of these variables on the dependent variable are controlled, in order to make sure that, the change happened in the dependent variable is only resulting from the change in the independent variable(s) (Hinton and McMurray, 2017).

Furthermore, the Quantitative data is measured in terms of the two levels of numerical data measurement, which are **Categorical Data** and **Scale/Interval Data**. Categorical data involves two further levels of data measurement, which are **Nominal Data** and **Ordinal Data**. In which, Nominal Data are recorded in numbers associated with categories. While Ordinal Data are recorded with numbers associated with an order of categories. However, Scale/Interval Data utilizes a more precise scale of measurement than the Categorical data, in which, Scale/Interval Data are recorded based on a continuous scale of equal intervals. And because of that accuracy, Scale/Interval data utilizes a wider range of statistical analysis than the Categorical data (McClave et al., 2005; Saunders et al., 2009; Hinton and McMurray, 2017).

Based on that, the following subsection explains the research variables according to the previously mentioned types of variables. In addition, it provides the definition of each variable and how it will be quantitatively measured.

5.6.2. Data Variables

This section is dedicated to explaining the way of measurement that will be employed in the research, in order to test each of the research variables. However; preceding this explanation, a scientific recognition should be stated towards the accuracy of the applied measures. In which, although, the research depends on quantitative measures for its variables that are globally recognized as well, a full (100%) accuracy of these measures cannot be guaranteed by the research. Whereas, due to the nature of the

social science, to which this research belongs, there is usually even few percentage of inaccuracy, resulting from even few subjectivity embedded in this type of research. Despite of this, the research exerted the most effort to avoid most of that subjectivity through employing mostly objective, quantitative measure for each of the research variables as follows.

Dependent Variable:

Quality of Sustainability Reporting (QSR)

This variable is defined as the quality assessment of the corporate sustainability report, in terms of each company's level of adherence to the GRI performance indicators. Referring back to the Quality definition mentioned in chapter 1, Quality means the set of aspects (elements) that best satisfy the needs of its users (ISO, 2018; Anttila and Jussila, 2019). As being the international proxy for SR, GRI determines that set of elements (indicators) that should be included in the sustainability report, which satisfies the needs of the stakeholders. Where, a GRI-based grade has been agreed to act as a measurement for the quality of corporate sustainability reporting. This grade aims to enable companies to provide standardized and qualified sustainability information within, or in addition to, its annual audited financial statements (Daub, 2007; Rupley et al., 2012; Iatridis, 2013; Lozano, 2013; Thijssens e al., 2016; Ballesteros, et al., 2017; Abd El-Rahman, 2018; Abd El-Rahman, 2019; Lambrechts et al., 2019). Consequently, based on the previously mentioned inspiring researches, the level of adherence to the GRI indicators is used as a measurement for the quality of sustainability.

According to the guidelines of the GRI organization, there are 79 performance indicators required to be disclosed in the corporate sustainability report, in relation to the economic, social and environmental aspects of the organization, as explained in the GRI section of chapter 2. The level of adherence to these indicators is determined by a grade, which reflects the amount of indicators that are included and fulfilled within the corporate report, out of the total 79 performance indicators. There are 6 grades that are

used to measure the level of adherence to the GRI as follows: A, B, C, D, E and F. These 6 grades represent ordered levels of adherence respectively, in which A is the best grade for the adherence level to the GRI guidelines and consequently for the quality of the sustainability report and F is the worst grade for the adherence level to the GRI guidelines and consequently for the quality of the sustainability report. However, the 6 grades can be divided into three categories of quality levels as follows; (Ballesteros, et al., 2017; <https://www.globalreporting.org/standards/getting-started-with-the-gri-standards/>).

The first category presents a three-scale measurement for the level of adherence according to the G3 guidelines of the GRI, which is followed by the vast majority of the research companies (G100), as well as, the vast majority of the top 250 companies worldwide, as explained in chapter 2. Moreover, it should be highlighted here that, the companies that follow the G4 guidelines, represent only 6.4% of the research G100 companies; however, the remaining 93.6% are following the G3. This category involves the first three grades of A, B and C. In which, A grade means that more indicators of the GRI guidelines are addressed in the corporate sustainability report. B grade means that fewer indicators of the GRI guidelines are addressed in the corporate sustainability report. C grade means that even fewer indicators of the GRI guidelines are addressed in the corporate sustainability report (Sherman and DiGuilio, 2010; Hubbard, 2011; Dissanayake et al., 2016; <https://www.globalreporting.org/standards/getting-started-with-the-gri-standards/>).

The second category presents a less scale measurement than the first category for the level of adherence according to the G4 guidelines and this category involves the following two grades of D and E. In which D grade means that several indicators of the GRI guidelines are comprehensively addressed, in the corporate sustainability report. E grade means that only core indicators of the GRI guidelines are addressed in the corporate sustainability report. The third category presents the companies that showed no adherence to the indicators of the GRI guidelines. This category involves the last grade F. In which, F means zero indicators, have been shown, to be addressed in the corporate

sustainability report (<https://www.globalreporting.org/standards/getting-started-with-the-gri-standards/>).

Accordingly, this variable is considered as a Discrete, Categorical variable, as it is measured in six categories of A, B, C, D, E and F and the difference between these categories does not represent an equal and/or continuous measurement scale. In addition, this variable can also be called an Ordinal, Categorical variable, as it consists of categories that are ranked by a certain order, in which one category is higher and/or better than the other.

Control Variables:

There are two control variables employed in the research, which are Continuous, Scale variables using a precise scale of measurement, as follows.

Total Assets (TOA)

This variable is defined as the company size in terms of the owned assets at the end of each year. Company Size has been applied and mostly controlled by several researches that studied the assessment of the corporate sustainability reporting (Brown and Hillegeist, 2007; Rupley et al., 2012; Salama et al., 2012; Hahn and Kuhnen, 2013; Lanis and Richardson, 2013; Iatridis, 2013; Shamil et al., 2014; Liao et al., 2015; Ballesteros, et al., 2017; Fuente et al., 2017; Nekhili et al., 2017; Abd El-Rahman, 2018; Abd El-Rahman, 2019).

Based on the previously mentioned inspiring researches, this variable is measured as the “Total Assets” of the company at the end of each relevant year. Accordingly, this variable is considered as a Continuous, Scale variable; as it is measured in Total Assets that can be accurately measured with any monetary value and the difference between any of these values represent an equal measurement scale.

Return on Assets (ROA)

This variable is defined as the company Profitability in terms of the Return on Assets (ROA) achieved at the end of each year. Company Profitability has been and mostly controlled by several researches that studied the assessment of the corporate sustainability reporting (Reverte, 2009; Salama et al., 2012; Hahn and Kuhnen, 2013; Lanis and Richardson, 2013 and Iatridis, 2013; Liao et al., 2015; Fuente et al., 2017; Haque, 2017; Nadeem et al., 2017; Abd El-Rahman, 2018; Abd El-Rahman, 2019).

Based on the previously mentioned inspiring researches, is measured as the ratio between “Net Profit” for each relevant year and the appropriate “Total Assets” at that year-end. Accordingly, this variable is considered as a Continuous, Scale variable; as it is measured in a percentage of Net Profit to Total Assets that can be accurately measured with any monetary value and the difference between any of these values represent an equal measurement scale.

Independent Variables:

Adherence to Regulations (ATR)

This variable is defined as whether (or not) the relevant company claims to adhere to the Global Reporting Initiative (GRI) principles and guidelines (<https://www.globalreporting.org/Pages/default.aspx>). In which, GRI has been extensively applied by researches that studied the assessment of corporate sustainability reporting as the most globally applied proxy for a corporate adherence to sustainability reporting regulations (Lamberton, 2005; Wijk and Persoon, 2006; Farneti and Guthrie, 2009; Joseph, 2012; Roca and Searcy, 2012; Comyns et al., 2013; Iatridis, 2013; Lozano, 2013; Dissanayake et al., 2016; Nobanee and Ellili, 2016; Junior et al., 2017).

Based on the previously mentioned inspiring researches, this variable is measured as follows. If the firm adheres to regulations, a value of 1 is assigned and, if the firm does not adhere to regulations, a value of 0 is assigned. Accordingly, this variable is

considered as a Discrete, Categorical variable, as it is measured in two integers of 0 and 1 and the difference between these integers does not represent a specific order or an equal measurement scale. This variable is also called a Dichotomous (Binary) Variable as it is reported as a choice between two options only.

Assurance of the Sustainability Report (ASR)

This variable is defined as whether or not the corporate sustainability report is assured by an independent, third party. The Assurance of the Sustainability Report has been extensively applied by the researches that studied the assessment of corporate sustainability reporting as an indicator for the quality of sustainability report (Hammond and Miles, 2004; Lamberton, 2005; de Villiers and van Staden, 2006; Rowbottom and Lymer, 2009; Hooks and Staden, 2011; Ane, 2012; Iatridis, 2013; Fernandez-Feijoo et al., 2016; Samudhram et al., 2016; Ballesteros, et al., 2017; Abd El-Rahman, 2019).

Based on the previously mentioned inspiring researches, this variable is computed as follows the existence (or not) of an “independent” assurance report of the Sustainability Report itself. A value of 1 is to be assigned in cases where the corporate sustainability report is assured by a third party, and a value of 0 is to be assigned when no assurance is implemented. Accordingly, this variable is considered as a Discrete Categorical variable, as it is measured in two integers of 0 and 1 and the difference between these integers does not represent an equal measurement scale. This variable is also called a Dichotomous (Binary) Variable as it is reported as a choice between two options only.

Independence of Board (IOB)

This variable is defined as the existence of a reasonable (possibly 50% or more) number of independent directors in the corporate board of directors and/or the existence of a reasonable number of independent members in the corporate audit committee of the board. The independence of members, either directors and/or auditor has been applied by

researches that studied the assessment of corporate sustainability reporting (Rupley et al., 2012; Iatridis, 2013; Shamil et al., 2014; Liao et al., 2015; Fuente et al., 2017; Haque, 2017; Nekhili et al., 2017).

Based on the previously mentioned inspiring researches, this variable is measured as the percentage of independent directors within the board of directors. A significant percentage indicates that the organization disclosed good information in its sustainability report while small percentage indicates that the organization disclosed poor information in its sustainability report. Accordingly, this variable is considered as a Continuous, Scale variable; as it is measured in a percentage that can be accurately measured with any monetary value and the difference between any of these values represent an equal measurement scale.

Independence of Chair (IOC)

This variable is defined as whether or not the Chairperson in the company is the same person holding the position of the Chief Executive Officer (CEO). The Independence of the Chair (often referred to as the “duality” feature) has been applied by the researches that studied the assessment of corporate sustainability reporting as an indicator for the quality of sustainability report (Iatridis, 2013; Shamil et al., 2014; Liao et al., 2015; Fuente et al., 2017; Haque, 2017; Nadeem et al., 2017; Nekhili et al., 2017).

Based on the previously mentioned inspiring researches, this variable is measured as whether the separation between the Chairperson and the CEO exists or not. A value of 1 will be assigned when such separation exists and a value of 0 when it is not. Accordingly, this variable is considered as a Discrete, Categorical variable, as it is measured in two integers of 0 and 1 and the difference between these integers does not represent an equal measurement scale. This variable is also called a Dichotomous (Binary) Variable as it is reported as a choice between two options only.

Type of Information (TOI)

This variable is defined as the inclusion of the Quantitative information in the corporate sustainability report, against the Qualitative information in the same report. The type of information, in terms of the Quantitative information that is used to measure sustainability-related (mainly, social and environmental) aspects, has been extensively applied by the researches that studied the assessment of corporate sustainability reporting as an indicator for the quality of the sustainability report (Hammond and Miles, 2004; de Villiers and van Staden, 2006; Wijk and Persoon, 2006; Hooks and Staden, 2011; Ane, 2012; Comyns et al., 2013; Abd El-Rahman, 2018).

Since, based on the relevant theoretical and empirical literatures reviewed and the real sustainability reports of companies, the gap of lacking the quantitative information inside the sustainability report exists in relation to the social and environmental dimensions. However; this gap is not existed in relation to the economic dimension, which is quantitative by its nature. Therefore, the research tests this variable by measuring the inclusion of the quantitative information for measuring the social and environmental dimensions within the report as follows.

A 0% is given in case no quantitative information for both social and environmental dimensions. A 50% is given in case of including quantitative information for one of the two dimensions (either social or environmental). A 100% is given in case of including quantitative information for both dimensions (social and environmental). A significant percentage indicates that the organization disclosed qualified information in its sustainability report while small percentage indicates that the organization disclosed poor information in its sustainability report. Accordingly, this variable is considered as a Continuous, Scale variable; as it is measured in a percentage that can be accurately measured with any numerical value and the difference between any of these values represent an equal measurement scale.

A list of all the research variables is presented in a summarized form in Table 5.1. that comprises four main pieces of information regarding the research variables, as follows. The first one includes the Category of each variable as being either a dependent, independent or control variable. The second one includes the Type of each variable, for instance as being a discrete or continuous variable, a categorical or scale variable, etc. The third one includes a shortcut for the way of measuring each variable. The fourth one includes determines the data source(s) targeted to capture the required data to measure each variable. A detailed explanation for all the information related to the data sources that are used by the research is provided in the next section.

5.6.3. Data Sources

The research extracted its data from five main sources. The companies chosen to represent the empirical domain of the research are determined based on the **Fortune Database “Fortune.com”**, which represents the first data source. According to “Fortune.com”, the database ranks the top companies and executives worldwide each year. For companies, the Fortune website ranks the biggest 500 companies each year on a global level, which are called the “*Global 500*”. In addition, it ranks the biggest 500 companies each year in the United States, which are called the “*Fortune 500*”. This ranking is implemented based on the total revenues achieved by these companies annually (<http://fortune.com/>).

The research hypotheses are tested for the global setting, other than the American, because of the following two reasons. First, based on the relevant literature reviewed, the sustainability reporting issue is characterized by being an international issue and that’s why, it has to be handled globally as well. Second, this global setting of sustainability reporting represents different working environments and economic conditions that give more validity and generality for the results. In which, the results can lead to conclusions that is applicable in different countries within various working environments and economic circumstances. As the research started in 2015, the research is targeting the Global companies ranked according to the ranking of the year 2015. In 2015, the “*Global*

500” achieved \$27.6 trillion in revenues and \$1.5 trillion in profits. Out of the “*Global 500*” companies, the research chose the first 100 companies, which are the “***Global 100 (G100)***”, to be its operational sample. The research data about the G100 sustainability reports is collected and tested for the five years of 2011-2015 for each of the G100 companies, which means **the research sample is 500 Sustainability Reports**. The research collects data and applies its tests on the whole G100 companies, which means no sampling process is implemented. The Global 100 are currently employing 67 million people from across 33 countries worldwide (<http://fortune.com/>).

There are two reasons for choosing the G100 companies to represent the operational sample of the research, as follows. The first reason is that, these top 100 companies fit the research objectives of testing the factors affecting the quality of sustainability reporting, as 95% of them provide an evident sustainability reporting, while the very few remaining may embed it within their traditional reporting. So that, the G100 is considered as a valid environment to hold the research and reach valid, relevant results that fulfill the research objectives (Comyns et al., 2013). The second reason is that, in addition to its applicability worldwide, the research sample should include a significant number of companies having Egyptian branches or at least having operations in Egypt. In which, as being my country of origin, the research is intended to test the factors affecting the quality of sustainability reporting that can be also applied in the Egyptian context, so that benefiting my country. The G100 includes 39 companies having Egyptian branches or operations, which is a significant number representing 39% of the total sample.

The second data source is the **Global Reporting Initiatives (GRI)** Database “globalreporting.org”. The GRI database is used as the reference for getting the data related to the guidelines and regulations of the corporate sustainability reporting. The GRI database comprises the most globally accepted and used sustainability reporting guidelines, in addition to comprising companies’ sustainability reports (Wijk and Persoon, 2006; Farneti and Guthrie, 2009; Hubbard, 2011; Joseph, 2012; Roca and Searcy, 2012; Iatridis, 2013; Lozano, 2013; Fernandez-Feijoo et al., 2016; <http://www.globalreporting.org>). More importantly, the GRI is used as the data source for

the research dependent variable that is the Quality of Sustainability Reporting (QSR) and the second research independent variable that is the Assurance of the Report (ASR). The GRI organization thankfully provided the research with the previously mentioned data, after fulfilling an easy process for verifying that the obtained data is used for research purposes. See Appendix 3 for the Request Form of the GRI Reports List. For more details about the GRI organization, refer to the GRI section in chapter 2.

The third data source is the **Corporate Register Database** “**CorporateRegister.com**” which is considered as the largest repository for sustainability reports worldwide. So that, data about the sustainability reports of the G100 companies is collected from this database. The Corporate Register is an independent international organization that profiles the largest number of Corporate Responsibility (CR) reports for organizations worldwide, in which the Sustainability Reports are also called Corporate Responsibility Report within the database or within the firm itself. The database includes 78,661 reports, which are increasing by time, of organizations working in all sectors, from across 13,488 countries, which are also increasing by time (<http://www.corporateregister.com/>).

The CR reports profiled in the database by the organization can be in the form of an integrated annual report including the financial and non-financial disclosures in one report or in the form of two separated reports, in which one is the financial report and the other is a separated CR report. However, in either form, it is preferable that the report abides by a standard reporting framework. The fourth data source that is also used for getting sustainability reports of the G100 companies is the **Individual Companies’ Websites** which is accessed as needed. The companies’ websites include the information about each organization especially search and experience information about the organization’s profile and its strategic plans and objectives as in (Roca and Searcy, 2012).

The 500 sustainability reports of the research are extracted from both the Corporate Register database and the companies’ websites are extensively used

subsequently to extract the data for the fifth research independent variable that is the Type of Information (TOI). In which, this variable requires data about the inclusion of quantitative information that measures the environmental and social dimensions of the corporate sustainability performance. Unfortunately, these data are not available in any of the databases. Consequently, this data about the quantitative information has to be extracted from the 500 sample reports manually that requires a lot of time and effort. And it worth mentioning here that, in order to do that extraction, the researcher manually reviews and evaluates all of the individual 500 sustainability reports for the G100 companies. Moreover; the individual companies' websites are referred to, in order to extract and/or assure information about the two control variables of the research that are the Total Assets (TOA) and the Return on Assets (ROA).

The fifth and most significant data source is the **Bloomberg Database**. Bloomberg is an international database that mainly provides financial professional services, including financial information, analyses and news. As working in the economy for more than 30 years, the terminal has around 2,800 financial ratios and data items that covers international and US companies. Moreover, in order for the data to be included in the terminal, it goes through a systemized verification process so that ensuring its accuracy and integrity, thus financial screening and analyses could be done based on dependable data inputs. The financial analyses process is implemented using a wide range of analytical tools, in addition to the availability of more than 15,000 indexes. In addition, the terminal offers its users more than 5,000 news from all over the world on a daily basis (<http://www.bloomberg.com/>).

As a high tech terminal, Bloomberg constitutes the latest technological infrastructure and tools in collecting, verifying, analyzing and communicating financial data, for instance it can apply the most widely used software packages, like SPSS and MATLAB while proceeding in the financial data analysis process. This made it the largest most efficient private network worldwide. It is capable of communicating huge quantities of verified data non-stop to a massive number of customers worldwide and without any recorded failure or delay. Thus the terminal meets the requirements of its

users, together with the efficient follow up process to handle any evolving queries that is also implemented non-stop and through all means of communication (<http://www.bloomberg.com/>).

Bloomberg database is used as the data source for the first research independent variable that is the Adherence to Regulations (ATR), the third research independent variable that is the Independence of Board (IOB) and the fourth research independent variable (IOC). Moreover; the Bloomberg database is referred to as the main source for extracting information about the two control variables of the research that are the Total Assets (TOA) and the Return on Assets (ROA) for the G100 companies all over the five years.

The sources from which the research will collect all its required data, which are the “Fortune.com” database, the GRI database – “globalreporting.org”-, the Corporate Register database – “corporateregister.com”-, companies’ individual websites and the Bloomberg database are considered as public, sources for data collection. As a result, it is envisaged that, no data is collected from private sources; therefore, no research ethical issues should arise in terms of the collection and analysis of the data. Moreover, it should be mentioned that, the research data is also characterized with being a Secondary data. As opposed to the primary data, secondary data is an already prepared data by a certain party, other than the researcher who does not execute any sort of interference in the data preparation. These research data are extracted from documentation sources prepared by the previously mentioned credible databases and websites. Documentation is an objective and reliable technique for data collection as it is more likely not including subjective viewpoints or inaccurate data (Sekaran, 2000; Sekaran, 2003; Saunders et al., 2009; Abd El-Rahman, 2018).

5.6.4. Data Acquisition

The research depends on the documentation in extracting the required research data to be tested. Documentation is characterized with the accuracy, reliability and

verifiability of the extracted data, because it is less likely to involve bias, subjective values or viewpoints. So, it is an objective, robust resource for the data upon which the research builds its results and findings (Sekaran, 2000; Sekaran, 2003; Saunders et al., 2009; Saunders and Tosey, 2013). As mentioned in the previous section, the research data are collected for the G100 companies of 2015, which include 39% of them having Egyptian branches or at least having operations in Egypt. The research data that are mostly Quantitative, Secondary data will be collected for 5 years, from 2011 to 2015 (inclusive).

The research also employs the fourth generation of Guidelines (G4) launched by the GRI in May 2013, in addition to the G3 launched by the GRI in 2006, as mentioned in the previous section of the “Data Acquisition”. The reason is that according to the GRI organization, although sustainability reports published after 31 December 2015 should be prepared in accordance with the G4 Guidelines in order to be recognized by the GRI, GRI still recognizes reports published after that date in accordance with the G3. In which, for instance, if a company publishes the sustainability report covering the 2015 year in 2016 and this report is prepared in accordance with the G3 rather than the G4. Although, it is published after the end of 2015, the report will be still recognized by the GRI, as the reporting period (the period for which the firm performance is reported) does not exceed the 2015 year, regardless of date of publishing this information to the public.

5.6.5. Data Reliability/Validity

After applying the statistical analysis technique of the Regression Analysis for analyzing the research data, which is explained in the previous sections, a critical step has to be implemented in order to assure the usefulness and utilization of the data analysis results in making inferences about them. Making inferences about the analysis results leads to accepting or rejecting the research hypotheses and consequently achieving the research objectives. This critical step is to verify the data Reliability and Validity that allows depending on the results to make scientific inferences. And for this purpose, the robustness of the used regression model is measured by the level of Significance value

that is expressed by the P-value. Moreover, the Significance level (P-value) is determined and appropriately interpreted for each tested variable. A detailed explanation for these statistical measures is included in the next chapter of “The Empirical Results and Discussion”.

After fulfilling the statistical validation of the empirical results, a further qualitative, concluding step can be undertaken that provides additional validation for the empirical results from the practical side. This further validation can be achieved through holding discussions with senior practitioners working in the corporate governance field, as well as senior practitioners in the corporate sustainability reporting field. The practitioners are selected from two different sectors within the Egyptian context. In which, Egypt represents a developing country, in addition to being the home country of the researcher who is committed to provide a benefit to it from the research. Evaluating the empirical results in this context gives more enrichment and an additional assurance for the wide applicability of the research output.

5.6.6. Data Analysis

As explained in the second section of this chapter, the Ordinal, Logistic Regression is the methodological choice of the research to be used to statistically analyze the research data, in order to test the effect of the proposed factors on the quality of sustainability reporting. The Statistical Package for the Social Sciences (SPSS) is the statistical software package that will be used to implement the regression analysis. In which, SPSS is considered as the most powerful and, at the same time, most user-friendly data analysis package that is applied in the social sciences research. Moreover, SPSS is extensively used in business studies for regression analyses purposes (Green and Salkind, 2008; Tyrrell, 2009). There are two methods to enter the regression variables into the SPSS, which are the Enter method and the Step-Wise method. The Enter method includes all the variables' data into the regression model at the same time, while the Step-Wise method includes only the most correlated variables' data into the regression model. The Step-Wise method is not applied in case that, the regression model includes control

variables, which is the case of this research, so that the research will use the Enter method for entering the research variables into the SPSS software (Dougherty, 2002).

The following Multiple, **Ordinal Logistic Regression (OLR) Models** are used in order to estimate or predict the variation (change) in the Quality of Sustainability Reporting as a result of the variation (change) in Lack of Regulation, Assurance of the Report, Independence of Board and Type of Information, with and without controlling Total Assets and Return on Assets, in order to decide which case better explains the variability in the Quality of Sustainability Reporting, as detailed in the next chapter:

Model 1:

$$\text{Logit } QSR = \alpha + \beta_1 ATR + \beta_2 ASR + \beta_3 aIOB + \beta_3 bIOC + \beta_4 TOI$$

Model 2:

$$\text{Logit } QSR = \alpha + \beta_1 ATR + \beta_2 ASR + \beta_3 aIOB + \beta_3 bIOC + \beta_4 TOI + \beta_5 TOA \\ + \beta_6 ROA$$

Where,

QSR is GRI-based sustainability disclosure score, as a proxy for the quality of sustainability reporting.

ATR is the adherence to the GRI regulations, as a proxy for the adherence to regulations, $ATR = 1$ if the company adheres to GRI and $ATR = 0$ otherwise.

ASR is the assurance of the sustainability report, $ASR = 1$ if the report is assured and $ASR = 0$ otherwise.

IOB is the percentage of independent directors within the board of directors and/or the percentage of independent members within the audit committee of the board, as a proxy for the independence for the board.

IOC is the separation between the Chairperson and the CEO, as a proxy for the independence for the board. $IOC = 1$ if the separation exists and $IOC = 0$ otherwise.

TOI is the percentage of the Quantitative information disclosures and the percentage of the Qualitative information disclosures, inside the sustainability report, as a proxy for the type of the information.

TOA is the total assets of the firm each year, as a proxy for the company size.

ROA is the return on assets, as a proxy for the company profitability.

The collected data are analyzed using the previous regression models, so that enabling the acceptance or rejection of the research hypotheses that are explained and developed in Chapter 4, as follows:

*The development of each research hypothesis has been considered in the previous chapter. Hence, at this stage, for convenience they are merely re-stated.

The first research hypothesis that is:

H1: That Adherence to Regulations (ATR) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

The second research hypothesis that is:

H2: That Assurance of the Sustainability Report (ASR) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

The third research hypothesis is measured using the following two sub-hypotheses that are:

H3a: That Independence of Board (IOB) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

H3b: That Independence of Chair (IOC) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

The fourth research hypothesis that is:

H4: That Type of information (TOI) significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

A summary of Variables Treatment for Hypotheses Testing is presented in Table 5.2. The table shows all the research variables and their type as being a Dependent Variable (DV) or Independent variable (IV). Referring back to the previous sections in

this chapter and section 2 in chapter 4 of hypotheses explanation and development, the table shows the role of each variable within the suggested research model represented in the form of statistical equations. In which, out of the 4 suggested research hypotheses, there are 3 hypotheses that will be tested by employing 1 IV, i.e. Hypotheses 1, 2 and 4. While, there is 1 hypothesis that will be tested by employing 2 IV, i.e. Hypothesis 3.

Table 5. 1 List of Research Variables

No.	Variable	Variable Abbreviation	Category	Type	Source	Way of Measurement
1	Quality of the Sustainability Reporting	QSR	*DV	Ordinal, Categorical	GRI organization	GRI-based 6 grades, which are used to measure the level of adherence to the GRI as follows: A, B, C, D, E and F
2	Adherence to Regulations	ATR	**IV	Discrete, Dichotomous, Categorical	Bloomberg Database	<ul style="list-style-type: none"> • A value of 1 is assigned, if the firm adheres to regulations. • A value of 0 is assigned if the firm does not adhere to regulations.
3	Assurance of the Sustainability Report	ASR	IV	Discrete, Dichotomous, Categorical	GRI database	<ul style="list-style-type: none"> • A value of 1 is to be assigned in cases, if the corporate sustainability report is assured by a third party. • A value of 0 is to be assigned, if no assurance is implemented.
4	Independence of Board	IOB	IV	Continuous, Scale	Bloomberg Database	The percentage of independent directors within the board of directors.
5	Independence of Chair	IOC	IV	Discrete, Dichotomous, Categorical	Bloomberg Database	<ul style="list-style-type: none"> • A value of 1 will be assigned when the separation between the corporate Chairperson and CEO exists. • A value of 0 when it is not.
6	Type of information	TOI	IV	Continuous, Scale	Corporate Register Database and Companies' Websites	<ul style="list-style-type: none"> • 0% is given in case no quantitative information for both social and environmental dimensions.

No.	Variable	Variable Abbreviation	Category	Type	Source	Way of Measurement
						<ul style="list-style-type: none"> • 50% is given in case of including quantitative information for one of the two dimensions (either social or environmental). • 100% is given in case of including quantitative information for both dimensions (social and environmental).
7	Total Assets	TOA	*** CV	Continuous, Scale	Bloomberg Database and Companies' Websites	The Total Assets of the company at the end of each relevant year.
8	Return on Assets	ROA	CV	Continuous, Scale	Bloomberg Database and Companies' Websites	The ratio between Net Profit for each relevant year and the appropriate Total Assets at that year-end.
Source: The Researcher own construction						

*DV: Dependent Variable

**IV: Independent Variable

***IC: Control Variable

Table 5. 2 Summary of Variables Treatment for Hypotheses Testing

Hypothesis	Hypothesis Statement	Regression Equation for Hypothesis Testing	VAR 1 QSR	VAR 2 ATR	VAR 3 ASR	VAR 4 IOB	VAR 5 IOC	VAR 6 TOI	VAR 7 TOA	VAR 8 ROA
H1	That Adherence to Regulations (ATR) has a significant effect on the Quality of the Sustainability Reporting (QSR).	$QSR = \alpha + \beta_1 ATR + \beta_5 TOA + \beta_6 ROA$	DV	IV	---	---	---	---	CV	CV
H2	That Assurance of the Sustainability Report (ASR) has a significant effect on the Quality of the Sustainability Reporting (QSR).	$QSR = \alpha + \beta_2 ASR + \beta_5 TOA + \beta_6 ROA$	DV	---	IV	---	---	---	CV	CV
H3a & H3b	a. That Independence of Board (IOB) has a significant effect on the Quality of the Sustainability Reporting (QSR). b. That Independence of Chair (IOC) has a significant effect on the Quality of the Sustainability Reporting (QSR).	$QSR = \alpha + \beta_{3a} IOB + \beta_{3b} IOC + \beta_5 TOA + \beta_6 ROA$	DV	---	---	IV	IV	---	CV	CV
H4	That Type of information (TOI) has a significant effect on the Quality of the Sustainability Reporting (QSR).	$QSR = \alpha + \beta_4 TOI + \beta_5 TOA + \beta_6 ROA$	DV	---	---	---	---	IV	CV	CV
Source: The Researcher own construction										

5.7. Chapter Summary

This chapter is intended to determine the research methodology and design that can best test the proposed research hypotheses and thus answer the research questions. As seeking to verify an existing theory, that is the Legitimacy Theory, the research design is grounded on the Positivism Philosophy, in which the research aims at deductively testing objective data, in order to reach generalizations regarding the tested relationships. Based on the Positivism Philosophy, a normally relevant strategy of Archival study is followed so as to test the research data in both Cross-Sectional and Longitudinal time frames. The data is tested over subsequent 5 years of 2011, 2012, 2013, 2014 and 2015 for the Global Fortune 100 (G100) companies, which means the research sample is 500 Sustainability Reports. Five main sources are employed for the data collection process, which are the Fortune database, the GRI database, the Corporate Register database, sample companies' websites and the Bloomberg database.

A mostly Quantitative method has been chosen, because the main research question is “what are the factors affecting the quality of sustainability reporting?” and this sort of question is quantitative, so that it needs a quantitative method to best answer it. The quantitative, statistical method that is applied to empirically test the collected data is the Ordinal Logistic Regression. In which, this type of regression analysis is used when the predictor variable of the tested relationship is an ordered categorical variable, which is the exact case of the research. The SPSS statistical package is used to perform the regression analysis, as this package is characterized with being mostly powerful, in addition to being extensively applied in these sorts of tests.

Therefore, after well determining the research methodology and design in this chapter, the next chapter will aim at providing a detailed presentation and explanation for the empirical results of the research statistical analysis performed and a discussion of it. Moreover, based on the empirical results achieved, the chapter will consequently enable taking decisions regarding the proposed research hypotheses through verifying the

strength of the relationship, if any, between each of the response variables and the quality of sustainability reporting and thus answer the main research question.

5.8. Summary of the Most Relevant Empirical Literature Review

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
<p>Governance, media and the quality of environmental disclosure.</p> <p>Rupley, K. H., Brown, D., & Marshall, R. S. J.</p> <p>Account Public Policy (2012)</p>	<p>Examining the relationship between specific aspects of governance and media coverage and the quality of voluntary environmental disclosure.</p>	<p>Linear Regression Analysis</p> <p><u>Dependent Variable:</u> Quality of Voluntary Environmental Disclosure</p> <p><u>Independent Variable(s):</u> Environmental Legitimacy; Board of Directors; Institutional Investors.</p> <p><u>Control Variables:</u> Company Size; Financial Performance.</p>	<p><u>Statistical Method:</u> Regression Analysis.</p> <p><u>Variables:</u> *Quality of Sustainability Reporting (QSR) as Dependent Variable, measured by GRI-based Index. *Independence of Board (IOB) as Independent Variable, measured by the percentage of independent directors within the board of directors. *Company Size (COS) as Control Variable.</p>
<p>Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance.</p> <p>Iatridis, G. E.</p> <p>Emerging Markets Review (2013)</p>	<p>Investigating the association between the environmental disclosure quality and environmental performance, corporate governance and value relevance.</p>	<p>Ordinary Least Squares (OLS) Regression Analysis</p> <p><u>Dependent Variables:</u> Environmental Disclosure Score; Corporate Governance</p> <p><u>Independent Variables:</u> Environmental Performance; Corporate Governance; Capital Constraints; Value Relevance; Investor Perceptions</p>	<p><u>Statistical Method:</u> Regression Analysis.</p> <p><u>Variables:</u> *QSR as Dependent Variable, measured by GRI-based Score. *Adherence to Regulations (ATR) as Independent Variable, measured by the adherence to the GRI guidelines. *Assurance of Sustainability Report (ASR) as Independent Variable, measured by the existence of independent assurance for sustainability report. *IOB as Independent Variable, measured by the percentage of independent directors within the board of directors. *COS measured by the Total Assets at the end of the year. *Profitability (PRO) measured by the ratio between Net</p>

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
			Profit and Total Assets at the end of the year.
<p>The assurance market of sustainability reports: What do accounting firms do?</p> <p>Fernandez-Feijoo, B., Romero, S., & Ruiz, S.</p> <p>Journal of Cleaner Production, (2016).</p>	<p>Contributing to a better understanding of the role each one of the four major accounting firms (Big4) play in the market of sustainability reporting assurance.</p>	<p>Binary Logistic Regressions</p> <p><u>Dependent Variables:</u> Assurance of each one of the Big 4 to sustainability reports.</p> <p><u>Explanatory Variable:</u> Auditing of each one of the Big 4 to financial statements.</p>	<p>Statistical Method: Regression Analysis.</p> <p><u>Variables:</u> *ASR as Independent Variable, measured by the existence of independent assurance for sustainability report.</p>
<p>Corporate Sustainability Disclosure in Annual Reports: Evidence from UAE Banks: Islamic versus Conventional.</p> <p>Nobanee, H., & Ellili, N.</p> <p>Renewable and Sustainable</p>	<p>Measuring the degree of the corporate sustainability disclosure on the banking performance.</p>	<p>Regression Analysis</p> <p><u>Dependent Variables:</u> Financial performance of banks.</p> <p><u>Independent Variable:</u> Energy disclosure items; Natural environment disclosure items, referring to GRI guidelines.</p>	<p>Statistical Method: Regression Analysis.</p> <p><u>Variables:</u> *ATR as Independent Variable, measured by the adherence to the GRI guidelines.</p>

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
Energy Reviews (2016).			
<p>How disclosure quality affects the level of information asymmetry.</p> <p>Brown, S., & Hillegeist, S. A. Review of Accounting Studies (2007).</p>	<p>Examining two potential mechanisms through which disclosure quality is expected to reduce information asymmetry: (1) altering the trading incentives of informed and uninformed investors so that there is relatively less trading by privately informed investors, and (2) reducing the likelihood that investors discover and trade on private information.</p>	<p>Probit and Ordinary Least Squares (OLS) Regression Analyses</p> <p><u>Dependent Variable:</u> Independent Variable: Quality of Disclosure and Information Asymmetry are used as dependent and independent variables interchangeably.</p> <p><u>Control Variables:</u> Size; Institutional Ownership; Analysts; Dispersion; Leverage; Earnings; Return; Surprise; Correlation; Capital; Owners.</p>	<p><u>Statistical Method:</u> Regression Analysis.</p> <p><u>Variables:</u> *COS as Control Variable, measured by the Total Assets at the end of the year.</p>
Corporate social responsibility	Testing legitimacy	Content Analysis, Paired Sample Statistics, Pearson Correlation	<u>Statistical Method:</u> Regression Analysis.

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
<p>and tax aggressiveness: a test of legitimacy theory.</p> <p>Lanis, R., & Richardson, G.</p> <p>Accounting, Auditing & Accountability Journal (2013).</p>	<p>theory by comparing the corporate social responsibility (CSR) disclosures of tax aggressive corporations with those of non-tax aggressive corporations in Australia.</p>	<p>Analysis and Ordinary Least Squares (OLS) Regression Analysis</p> <p><u>Dependent Variable:</u> Level of CSR Disclosure.</p> <p><u>Independent Variable:</u> Tax Aggressiveness.</p> <p><u>Control Variables:</u> Company Size, Leverage, Capital Intensity, Market-To-Book Ratio and Return on Assets.</p>	<p><u>Variables:</u> *COS as Control Variable, measured by the Total Assets at the end of the year. *PRO as Control Variable, measured by the ratio between Net Profit and Total Assets at the end of the year.</p>
<p>A Long-haul Destination: Sustainability Reporting Among Tour Operators.</p> <p>Wijk, J. V., & Persoon, W.</p> <p>European Management Journal (2006).</p>	<p>Analyzing the sustainability reporting of international tour operators.</p>	<p>Content Analysis</p> <p>Evaluating sustainability reporting, in relation to criteria of Areas, Measurability, and Compliance.</p>	<p><u>Variables:</u> *ATR, measured by the adherence to the GRI guidelines. *TOI, measured the percentage of quantitative information inside the sustainability report.</p>
<p>Assessing the quality of sustainability reporting: an alternative</p>	<p>Implementing a new methodological approach, other than applied</p>	<p>GRI-Based Criteria Catalogue</p> <p>Evaluating sustainability reports in relation to compliance with GRI guidelines.</p>	<p><u>Variables:</u> *QSR, measured by GRI-based Score.</p>

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
<p>methodological approach.</p> <p>Claus-Heirich Daub.</p> <p>Journal of Cleaner Production (2007).</p>	<p>approaches, of sustainability reporting procedures in Swiss companies.</p>		
<p>Sustainability inter-linkages in reporting vindicated: a study of European companies.</p> <p>Lozano, R.</p> <p>Journal of Cleaner Production (2013)</p>	<p>Assessing sustainability inter-linkages in corporate sustainability reporting.</p>	<p>GRI-Based Graphical Assessment of Sustainability Performance (GRASP) tool</p> <p>Evaluating sustainability reports in relation to compliance with GRI guidelines.</p>	<p><u>Variables:</u></p> <p>*QSR, measured by GRI-based Score.</p> <p>*ATR, measured by the adherence to the GRI guidelines.</p>
<p>Ambiguous but tethered: An accounting basis for sustainability reporting.</p> <p>Joseph, G.</p>	<p>Developing a transparent form of accounting for sustainability different from traditional managerial</p>	<p>GRI-Based Analysis of Sustainability Reporting Objectives</p> <p>Evaluating sustainability reports in relation to compliance with GRI guidelines, while focusing on</p>	<p><u>Variables:</u></p> <p>*ATR, measured by the adherence to the GRI guidelines.</p>

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
Critical Perspectives on Accounting (2012)	models.	Accounting Concepts, Indicators Measurement and Assurance.	
Sustainability accounting-a brief history and conceptual framework. Lamberton, G. Accounting Forum (2005)	Consolidating the various approaches into a sustainability accounting framework, through tracking the history until the release of the Sustainability Reporting Guidelines in 2002.	Tracking the history of sustainability reporting since 1999 till the release of the GRI Sustainability Reporting Guidelines in 2002 Evaluating sustainability reporting, mainly in relation to GRI indicators, beside other accounting principles.	<u>Variables:</u> *ATR, measured by the adherence to the GRI guidelines. *ASR, measured by the existence of independent assurance for sustainability report.
Sustainability reporting: The role of "Search", "Experience" and "Credence" information. Comyns, B., Figge, F., Hahn, T., & Barkemeyer. Accounting	Providing an explanation for poor quality sustainability reporting and ways for addressing quality issues.	Akerlof's Market for Lemons Theory *Quality of Sustainability Reporting; Types of Information.	<u>Variables:</u> *ATR, measured by the adherence to the GRI guidelines. *Type of Information (TOI), measured the percentage of quantitative information inside the sustainability report.

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
Forum (2013)			
Sustainability reporting by Australian public sector organizations: Why they report. Farneti, F., & Guthrie, J. Accounting Forum (2009)	Analyzing why a group of best practice organizations report on Social and Environmental matters.	Coding Process for Semi-Structured Interviews Exploring the factors affecting the Social and Environmental Reporting.	<u>Variables:</u> *ATR, measured by the adherence to the GRI guidelines.
Exploring the use of online corporate sustainability information. Rowbottom, N., & Lymer, A. Accounting Forum (2009)	Assessing the relative use of sustainability reports and other forms of social and environmental information on the corporate websites.	Content Analysis using Web Server Logs Exploring the requests of online users about the content disclosed in corporate websites.	<u>Variables:</u> *ASR, measured by the existence of independent assurance for sustainability report.
Can less environmental disclosure have a legitimising effect? Evidence from Africa.	Identifying the trends in environmental disclosure by South African companies over time.	Content Analysis Analyzing and coding annual reports based on 18 themes checklist.	<u>Variables:</u> *ASR, measured by the existence of independent assurance (audit) for sustainability report. *TOI, measured the percentage of quantitative information inside the sustainability report.

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
<p>de Villiers, C., & van Staden, C.</p> <p>Accounting, Organizations and Society (2006).</p>			
<p>An Assessment of the Quality of Environmental Information Disclosure of Corporation in China.</p> <p>Ane , P. Systems Engineering Procedia (2012).</p>	<p>Assessing the quality of environmental information disclosure in heavily pollution industries in China.</p>	<p>Developed Framework for assessing the quality of environmental disclosure</p> <p>Noting and rating environmental disclosure items according to the level of detail provided by the firm.</p>	<p><u>Variables:</u></p> <p>*ASR, measured by the existence of independent assurance (audit) for sustainability report.</p> <p>*TOI, measured the percentage of quantitative information inside the sustainability report.</p>
<p>Evaluating environmental disclosures: The relationship between quality and extent measures.</p> <p>Hooks, J., & Staden, C. J.</p> <p>The British</p>	<p>Evaluating the quality of environmental disclosures.</p>	<p>Developed Disclosure Quality Index and Content Analysis</p> <p>Assessing the disclosure quality using a Disclosure Index Scale.</p>	<p><u>Variables:</u></p> <p>*ASR, measured by the existence of independent assurance (audit) for sustainability report.</p> <p>*TOI, measured the percentage of quantitative information inside the sustainability report.</p>

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
Accounting Review (2011).			
<p>Assessing quality assessment of corporate social reporting: UK perspectives.</p> <p>Hammond, K., & Miles, S.</p> <p>Accounting Forum (2004).</p>	<p>Assessing the quality of corporate social reporting through examining evaluation systems of UK corporate environmental and social reporting.</p>	<p>Four Quality Assessment Protocols</p> <p>Scale and Score Systems, based on the four assessment protocols.</p>	<p><u>Variables:</u></p> <p>*ASR, measured by the existence of independent assurance (audit) for sustainability report.</p> <p>*TOI, measured the percentage of quantitative information inside the sustainability report.</p>
<p>Strategic aspects in sustainability reporting in oil & gas industry: The comparative case-study of Brazilian Petrobras and Spanish Repsol.</p> <p>Junior, F. H., Galleli, B., Gallardo-Vázquez, D., & Sánchez-Hernández, M. I.</p>	<p>Identifying the association between a firm's strategy and its sustainability aspects.</p>	<p>Comparative Thematic Content Analysis</p> <p>Proxy of Global Reporting Initiative (GRI) Indicators, specifically (G4).</p>	<p><u>Variables:</u></p> <p>*ATR, measured by the adherence to the GRI guidelines.</p>

Reference	Objective	Statistical Method & Tested Variables	Association with the Research
Ecological Indicators (2017).			
Towards a new paradigm: Activity level balanced sustainability reporting. Samudhram, A., Siew, E.-G., Sinnakkannu, J., & Yeow, P. H. Applied Ergonomics (2016).	Examining the current sustainability reporting with the aim of suggesting an activity-based level holistic economic, social reporting.	System of Systems Approach (Visual Conceptualization of Triple Bottom Line (TBL)) Criteria of awards of best practices in sustainability reporting, mainly completeness, credibility and communication.	<u>Variables:</u> *ASR, measured by the existence of independent assurance (audit) for sustainability report.

N.B. Some variables are included as both a Dependent and Independent variable, as they act as a Dependent variable in one relationship and act as an Independent variable in another relationship.

Chapter 6

The Empirical Results and Related Discussion

Chapter 6: The Empirical Results and Related Discussion

6.1. Chapter Introduction

The previous chapter gave much detail regarding the development of the most convenient research methodology and methods employed within the research. That development results in a robust research design by describing how each of the layers of research onion were appropriate addressing for. The research philosophy, approach, strategy, methodological choice and time horizon to be followed have been well determined and applied. In addition, the data collection process has been fulfilled and the data preparation for the statistical analysis has been finalized, as explained in the previous chapter. Therefore, the statistical analysis process has been implemented, which applied the Ordinal, Logistic Regression Analysis, using the SPSS statistical package.

Based on that, this chapter provides a presentation and discussion of the results derived from the empirical study. The chapter firstly presents **6.2. Discussion of the Descriptive Statistical Results** for the research models as a whole, as well as for each of the tested variables, as presented in **6.2.1. Descriptive Results of Categorical Variables** and **6.2.2. Descriptive Results of Continuous Variables**. Following this presentation, a discussion and interpretation of these descriptive results is detailed. The chapter then presents the inferences evolved from the data collection process (**6.3. Inferences from the Data Collection Process**). In addition, and more importantly, the chapter presents the inferential results **6.4. Discussion and Interpretation of the Inferential Statistical Results**, which is presented for the research models as a whole, (**6.4.1. Analysis and Discussion of Research Models**), as well as, to each of the tested variables (**6.4.2. Analysis and Discussion of Research Hypotheses**). Following this presentation, a detailed discussion and interpretation for these results of the statistical analysis process are explained, so that reaching theoretically and empirically-informed conclusions about each of the proposed research hypotheses. Reaching these conclusions makes it then possible to implement **6.4.3. Reflections of Empirical Results with Relevant Prior Literature**. Thereupon, **6.4.4. Comparative Analysis of SR among the Countries of the G100** is undertaken in an attempt to

develop further relevant insights, if any. As a last step for the research empirical study, the research attempts to obtain some real world validation for its empirical results. In doing so, the chapter presents (6.5.) **Practical Validation of the Empirical Results**. Finally, the thesis offers (6.6.) **Chapter Summary** reviews and summarizes the contents of the chapter and, based on the output of this chapter, introduces the next chapter.

6.2. Discussion of the Descriptive Statistical Results

The first stage in presenting and reporting the results of the statistical analysis process applied to the research data is to describe and summarize the results, i.e. the **Descriptive Results** (Hinton and McMurray, 2017). Accordingly, this section presents and discusses the descriptive results of the research variables. The previous chapter categorized the research variables into two types, which are Categorical and Continuous variables. Consequently, there are two categories of descriptive results for each of the two types of variables. Tables 1, 2, 3, 4 and 5 present the descriptive results for the Categorical variables, (QSR, ATR, ASR, IOC and TOI). While Table 6 presents the descriptive results for the Continuous variables, (IOB, TOA and ROA).

Table 6. 1 Descriptive Results of Quality of Sustainability Reporting (QSR)

	Frequency	Percent	Valid Percent
Valid F	304	60.8	60.8
E	20	4.0	4.0
D	12	2.4	2.4
C	14	2.8	2.8
B	52	10.4	10.4
A	98	19.6	19.6
Total	500	100.0	100.0

Table 6. 2 Descriptive Results of Adherence To Regulations (ATR)

	Frequency	Percent	Valid Percent
Valid YES	305	61.0	61.0
NO	195	39.0	39.0
Total	500	100.0	100.0

Table 6. 3 Descriptive Results of Assurance of Report (ASR)

	Frequency	Percent	Valid Percent
Valid YES	184	36.8	36.8
NO	316	63.2	63.2
Total	500	100.0	100.0

Table 6. 4 Descriptive Results of Independence Of Chair (IOC)

	Frequency	Percent	Valid Percent
Valid YES	93	18.6	18.6
NO	407	81.4	81.4
Total	500	100.0	100.0

Table 6. 5 Descriptive Results of Type Of Information (TOI)

	Frequency	Percent	Valid Percent
Valid 0	67	13.4	13.4
50	18	3.6	3.6
100	415	83.0	83.0
Total	500	100.0	100.0

Table 6. 6 Descriptive Results of Independence of Board (IOB), Total Assets (TOA) and Return on Assets (ROA)

	N	Minimum	Maximum	Mean	Std. Deviation
Independence of Board (%)	500	.000000	100.000000	53.07794242	32.951158397
Total Assets	500	4621.3	22209780.0	1394181.253	3438233.0342
Return on Assets (%)	500	-36.497485	28.541727	3.88140793	5.000300290

6.2.1. Descriptive Results of Categorical Variables

In relation to the Categorical variables, the descriptive analysis shows the following results:

The descriptive results Table 1 confirms that, only 98 reports out of the total 500 reports achieve the highest quality level of sustainability reporting (A), according to the criteria of quality assessment established by the GRI organization for sustainability reporting. This number is very small, as it represents only 19.6% of the sample companies in the research population. Regrettably, this indicates a low quality level of corporate sustainability reporting. This indication is reinforced by the finding that, most of the reports, representing 60.8% fall within the very lowest quality level of Sustainability Reporting (F). Hence, this finding is consistent with the literature reviewed that claims a poor quality level of the corporate sustainability reporting (Gray et al., 1993; Hooks and Staden, 2011; Hubbard, 2011; Comyns et al., 2013; Iatridis, 2013; Nobanee and Ellili, 2016).

Positively, Table 2 shows that, the majority of the reports, representing 61%, adheres to the GRI guidelines. This finding emphasizes the wide publicity of the GRI, -as explained in the literature reviewed, - as being the most globally accepted and applied reference for sustainability reporting. Table 3 shows that, about 37 companies only out of the G100 companies implement external assurance for their sustainability reports, as opposed to 63.2% of the reports are being not externally assured. The results presented in Table 3 can be related those of Table 1, which indicate that around 60% of reports, hold the poorest quality level of sustainability reporting. A preliminary conclusion can be reached that, the non-assured reports have a poor quality of

sustainability reporting. This accords with the literature reviewed. This preliminary finding will be settled and/or confirmed while interpreting the inferential results in the next section.

Table 4 reveals that, most of the G100 companies do not separate the position of Chairman and CEO. Indeed, around 81% of the companies has the duality feature in allowing one person to hold both positions of corporate Chairman and CEO at the same time. According to some scholars like Iatridis, (2013) and Rupley et al., (2012), this duality feature is not a positive sign in terms of quality Sustainability Reporting. Regarding the TOI variable, the descriptive results show that the vast majority of the companies include quantitative measures within their sustainability reports for both the social and environmental performance. In which, Table 5 shows that, 83% of the 500 reports considered provides quantitative assessments of their corporate social and environmental activities. In accordance with the literature reviewed, the inclusion of the quantitative measures for corporate sustainability performance is a robust motivator for a high quality sustainability report. In turn, this characteristic induces verifiability and understandability of the report information.

6.2.2. Descriptive Results of Continuous Variables

After explaining the descriptive results of the Categorical variables, the descriptive results of the Continuous variables are explained as follows. Table 6 shows that, the average percentage of independent directors within the corporate board of directors, (the IOB variable), is around 53%. This percentage is considered to be moderate. According to Nobanee and Ellili, (2016), as the percentage of independent directors within the corporate board of directors increases, it is more likely that the quality level of the corporate sustainability report will increase. Table 6 also shows that, the average size (in terms of total assets) of the G100 companies during the period of 2011-2015 was 1,394,181.253 million dollars. Average profitability achieved by these companies during the same period of 2011-2015 was circa 3.9%, of return on assets. As explained in the previous chapter, Total Assets (TOA) and Return on Assets (ROA) are employed in the research for the controlling purpose only.

6.3. Inferences from the Data Collection Process

After summarizing the results of the first stage of the analysis process, through presenting and discussing the descriptive statistical results, the second stage is developing inferences about the described, tested variables. This enables reaching conclusions about the research hypotheses. The research fulfills the development of inferences through implementing two steps. The first step is discussing and interpreting *preliminary inferences* that are derived from the data collection process, as discussed in this section. The second step is discussing and interpreting *final inferences* derived from the statistical analysis process, about each research hypothesis, as discussed in the next section of this chapter.

Based on the data collection process, some preliminary inferences have evolved and made preliminary inferences about the research variables before starting the detailed statistical analysis process, as follows. First of all, there is a general observation on the corporate sustainability reporting in relation to the name of the report. There appears to be a lack of consistency in the name of the report among the companies. While collecting the data, the sustainability information was found under different titles such as “Sustainability Report”, “Corporate Social Responsibility (CSR) Report”, “Social Responsibility Report”, and “Environmental Report”.

According to the GRI database records, it is realized that, although the availability of the corporate sustainability disclosures has increased over time, it is still facing some challenges. Regarding this issue, it is found that most of the companies for which sustainability reports are not easily available are Asian companies. These include Hon Hai Precision Industry and Japan Post Holdings, and more extensively the Chinese Companies, for example Industrial & Commercial Bank of China, Bank of China, SAIC Motor and China Railway Engineering. So that, it can be inferred that, sustainability reporting in China, is still very lacking and requires a lot of developments. This inference is consistent with the literature reviewed, more specifically, in relation the research problem. Conversely, it is found that the vast majority of the American

companies showed an excellent and robust Sustainability Reporting, examples of such reports include Walmart, Chevron, Exxon Mobil and IBM.

In terms of the research dependent variable (QSR) specifically, it is realized that the quality of sustainability reporting has been improving by time for almost all the G100 companies during the five years 2011-2015. Where, the corporate sustainability report for the year 2015 is better than that of the year 2014 and the corporate sustainability report for the year 2014 is better than that of the year 2013, and so on. This improvement is also realized in relation to almost all the tested features (variables) affecting the quality of the report. Hence, this would suggest that, Sustainability Reporting is progressing in the right direction.

Although all the G100 companies are considered to be the largest (in terms of total revenues) companies in the world, it is found during the data collection process that the quality level of the sustainability reporting among these companies, ranges from an extremely premium level to an extremely poor level. Regarding the premium reporting, there are two main features observed, which characterized the premium quality level of reports for these companies. The first feature is that these companies have a robust and high quality Sustainability Report, according to the GRI quality assessment for Sustainability Reporting. Such reports are seen to be well organized and include a reflection of the reported information in terms of GRI indicators; examples of these include Nestle, HP, Rosneft Oil and Kroger.

The aim of referring to the reflection of the Sustainability Report information in the related GRI indicators is to reveal to stakeholders the corporate extent of abiding by rules and criteria of the GRI performance indicators for the three sustainability dimensions. The behavior of these companies is unlike other companies that are silent on one or more dimension of sustainability. For example, Gazprom company which publishes only environmental report, together with its traditional economic report. The company's report misses any social performance information, even within the environmental report, as it is the case for other companies.

The second feature is that, those high quality reports are characterized by including quantitative measures of corporate performance for the three sustainability dimensions, more specifically the social and environmental dimensions. Whereas, the economic (financial) dimension is mostly quantitative in nature and is much captured by traditional reporting. However, the literature suggests, the problem is usually in the social and environmental dimensions, which tend to lack quantitative aspects. In addition, one of the remarkable aspects for such high quality reports is that, they usually include at their start, a quantitative summary of the most important sustainability achievements of the company during the reported year, examples of such a practice is seen in Daimler, Ford Motors, Petrobras, AT&T, BASF, Valero Energy, Bank of America and HSBC.

Including a quantitative summary of corporate sustainability achievements within the sustainability report acts as a shortcut of all the detailed information included in the report. This would be helpful to any stakeholder, but especially the non-specialist ones. This shortcut provides figures that resulted from the main corporate economic, social and environmental activities during a certain period. Based on these figures, stakeholder can have a preliminary judgment on the sustainable performance of the company in a very short time without the assistance of an expert. Moreover, some companies also include symbol photos for each of the three sustainability dimensions to facilitate navigation and verification by users. Where, the user can just search for one of the three symbol photos to get a particular information related to one of the three sustainability dimensions, such a practice is seen in the Sustainability Report of the Kroger company.

The two previously explained features, of generally following the GRI and specifically including quantitative sustainability measures, have two important benefits. The first benefit is that, following the GRI in preparing the sustainability report provides a rough “guarantee” to corporate stakeholders that the company is abiding by rules and that the offered report has a high quality level and so that is reflecting the actual sustainability performance of the company. Consequently, stakeholders can rely on that report for taking appropriate decisions towards this company.

The second important is that the inclusion of quantitative sustainability measures, (most importantly for the social and environmental dimensions), makes the reported information more user-friendly and helpful to corporate stakeholders. Quantitative information facilitates understandability and verifiability of the reported information by stakeholders. And it worth mentioning here that, as being a researcher and corporate stakeholder, this feature facilitates the task in collecting the required data for the research. Companies presenting quantitative summary for their main corporate sustainability activities save much time and effort when extracting the required measures for the research variables, relative to the other companies that do not provide that sort of information.

Accordingly, since it is found that the corporate sustainability reports following GRI guidelines and regulations, which include quantitative measures for the sustainability dimensions, achieve high quality levels of Sustainability Reporting, as per the GRI quality assessment. This strongly suggest and preliminary conclude that Adherence to Regulations (ATR) and Type of Information (TOI), as measured by relevant quantitative information, have an improving effect on the Quality of Sustainability Reporting (QSR). This inference is consistent with relevant literature reviewed.

Another interesting (positive) aspect observed in the G100 reports is including information relates to the implementation of external assurance of the corporate sustainability report. Moreover, some companies demonstrated corporate reporting better behavior in this context by attaching a copy of the external assurance report or, more excellently, the independent auditor report within the Sustainability Report. Such is the case with the Italian company ENI. The good thing about it is that, it is found that the reports that are externally assured, occupies a high quality level of Sustainability Reporting, according to the GRI quality assessment criteria. Consequently, it can be preliminary inferred that the Assurance of sustainability Reporting (ASR) is positively correlated with the Quality of Sustainability Reporting (QSR). This inference is consistent with literature reviewed.

Despite the presence of features of premium quality level of Sustainability Reporting (previously explained), some poor quality level of Sustainability Reporting has been also found in the G100 reports. Where, some reports were not well presented or structured and so that not covering all the sustainability dimensions and even the sustainability dimensions covered are not well categorized. An example would be the Fannie Mae company. However, although some companies showed a poor quality level of Sustainability Reporting in the early years, they show a remarkable improvement in their reports in the later years to the extent that, their recent reports achieve high quality ratings of Sustainability Reporting.

For example, SK Holdings and Petronas companies presented ill-structured Sustainability Reports that are lacking significant corporate sustainability aspects in years 2011 and 2012. In addition to these lacking reporting features, the reports of Noble Group Company were almost missing any quantitative measures for the corporate sustainability performance. However, an obvious improvement was observed for these three companies' reports of recent years that are more organized and comprehensive, as well as including a sustainability performance summary for previous missing years. Consequently, this supports the previously mentioned inference that, the Quality of Sustainability Reporting (QSR) is being better considered and improving over time.

Another aspect of poor Sustainability Reporting is providing a very technical report that can be only understood by experts specialized in the corporate industry field. For example, the reports of Costco company, which are highly technical reports that utilizes sophisticated, industrial concepts and measures, in addition to being totally missing the social dimension and slightly reporting on the environmental dimension. So that, not considering the different corporate stakeholders. Where, this is unhelpful for most of stakeholders who are not experts and consequently should be provided with user-friendly reports. And it is noticeable that, the principle of providing a user-friendly report has been breached while some companies provided their sustainability reports in languages other than by English, which is the most accepted language worldwide.

For example, GDF Suez and Electricite De France companies provide their Sustainability Reports only in French. The same applies to Pemex Company that provides its sustainability reports in Spanish language only. Thus, non-French or Spanish speakers (including the researcher as a corporate stakeholder) will require extra effort to translate the reports and comprehend. However, a good behavior regarding this issue is witnessed, like what is done by China Construction Bank. This bank provides its sustainability reports in both the Chinese and English languages. This way, it satisfies the needs of the corporate home country stakeholders and global corporate stakeholders as well.

Overall, it can be deduced that, the data collection process does not only have the benefit of extracting the data for the tested variables and their measures, it also generates preliminary inferences regarding these tested variables and consequently the hypothesized relationships. As stated, the data collection process of this research generates inferences regarding most (6 out of 8) research variables. The six variables are QSR, ATR, ASR, TOI, TOA and ROA. However, it should be kept in mind that, these inferences are still preliminary ones that need more scientific upgrading in order to accept them as firm research conclusions. One possible form to reach this upgrading is to assure the preliminary inferences by the precise inferences resulting from the statistical analysis process, and details of this are conveyed in the next section.

6.4. Discussion and Interpretation of the Inferential Statistical Results

After fulfilling the first step of developing initial research inferences in the previous section, through a *preliminary* set of *inferences* deduced from the data collected, this section of the chapter fulfills the second step. It develops the *final inferences* of the research. This section includes a presentation and discussion of the final inferential results about the data tested derived from the statistical analysis process. The analysis enables deciding on the hypothesized research hypotheses and consequently draw more robust (final) inferences and conclusions regarding the proposed research relationships. Thus, these results are called **Inferential Results**. They enable making some consideration as to whether inferences about the predicted causal relationship

between the tested variables and whether these predictions could be applied more generally (Hinton and McMurray, 2017).

The research employs three analyses for the statistical inferential results. First, an analysis of employed research models is presented and discussed. Whereas, based on the inferences derived from this analysis, the second and third analyses are implemented consequently. Secondly and critically, analyses for each of the research hypotheses are presented and discussed, so that being able to decide on them. Thirdly, a Comparative Analysis of the Sustainability Reporting (SR) performance is presented and discussed, among the countries of the G100 companies.

6.4.1. Analysis and Discussion of Research Models

The research applies an **Ordinal, Logistic Regression (OLR)** to statistically analyze the research data, using an enter method that enters all the variables into the regression model at the same time.

The research builds two Ordinal Regression models to be tested as follows: Model 1 includes the Dependent variable (QSR) and the Independent variables, (ATR), (ASR), (IOB), (IOC) and (TOI), without including the Control variables. Model 2 includes the same Dependent variable and Independent variables of Model 1, in addition to the Control variables, (TOA) and (ROA), in order to test the effect of the control variables on the model, if any. Thus, models 1 and 2 are formulated as:

Model 1:

$$\mathbf{Logit\ QSR = \alpha + \beta_1ATR + \beta_2ASR + \beta_3aIOB + \beta_3bIOC + \beta_4TOI}$$

Model 2:

$$\mathbf{Logit\ QSR = \alpha + \beta_1ATR + \beta_2ASR + \beta_3aIOB + \beta_3bIOC + \beta_4TOI + \beta_5TOA + \beta_6ROA}$$

Table 7 presents the inferential statistics of the two models as a whole, in which the three statistical measures of, Significance, Deviance and Pseudo R-Square, which is represented in Cox and Snell R-Square and Nagelkerke R-Square, are used to build inferential conclusions about the applied regression models. These measures provide the statistical assurance about the overall significance and quality of the regression model, in addition to the degree of the association between the model's independent variables and the dependent variable (Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; Adams et al., 2007; Saunders et al., 2009; Denham, 2017). This is explained in details as follows.

Table 6. 7 Inferential Statistics for the Research Models

Model	Sig. (P-Value)	Deviance (P-Value)	Pseudo R-Square	
			Cox and Snell R Square	Nagelkerke R Square
1				
(Constant)				
ATR	.000***	1.000	.355	.393
ASR				
IOB				
IOC				
TOI				
2				
(Constant)				
ATR	.000***	1.000	.371	.410
ASR				
IOB				
IOC				
TOI				

Model	Sig. (P-Value)	Deviance (P-Value)	Pseudo R-Square	
			Cox and Snell R Square	Nagelkerke R Square
TOA				
ROA				

*** Significant at 1% significance level.

** Significant at 5% significance level.

* Significant at 10% significance level.

No stars mean no significance.

The first measure is the Significance, which measures the level of the model's significance in relation to explaining the change in the dependent variable. The criterion used to judge the goodness of the Significance measure is its P-value. The P-value has three levels of significance, which are at 10%, 5% and 1%. In which, if the P-value is less than 0.1, then there is a strong evidence that the model is significant in explaining the change in the dependent variable with a probability of 90% or more and that there is a probability of 10% or less that this is not holding true. If the P-value is less than 0.05, then there is very strong evidence that the model is significant in explaining the change in the dependent variable with a probability of 95% or more and that there is a probability of 5% or less that this is not holding true. If the P-value is less than 0.01, this means that there is an extremely strong evidence that the model is extremely significant in explaining the change in the dependent variable with a probability of 99% or more and that there is a probability of 1% or less that this is not holding true (Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; Adams et al., 2007; Saunders et al., 2009).

As shown in Table 7, Model 1 has a P-value of Significance by 0.000 that is less than 0.01 so it is extremely significant, which means that it is an extremely good model for explaining the variability in the Quality of Sustainability Reporting (QSR). Similarly, Model 2, that includes the control variables, has a P-value of Significance by 0.000 that is an extremely significant as well. This means that it is also an extremely good model for explaining the variability in the Quality of Sustainability Reporting (QSR). Therefore, both models are significant.

The second measure is the Deviance, which measures the level of fitness of the ordinal regression model in relation to how well the independent (predictor) variables are fitted within the model, so that it measures the overall quality of the ordinal regression model. The criterion used to judge the goodness of the Deviance measure is its significance (P-value), in which if the P-value is greater than 0.05, then the model is well fitted (Adams et al., 2007). As shown in Table 7, Model 1 has a P-value of Deviance by 1.000, which is significant. This means that the Independent variables (ATR, ASR, IOB, IOC and TOI) are well fitted in the ordinal regression model. Model 2 has a P-value of Deviance by 1.000, which significant. This means that the Independent variables (ATR, ASR, IOB, IOC and TOI) are well fitted in the ordinal regression model, after adding the Control variables (TOA and ROA) as Independent variables as well. Therefore, both models are statistically well fitted.

The third measure is the Pseudo R-Square, which measures the strength of the association between the dependent variable and the independent (predictor) variables. This level of the association strength is defined with further two measures that are the Cox and Snell R-Square and the Nagelkerke R-Square. The R-Square value is ranging from 0 to 1, in which 0 means no strength and 1 means the highest strength (Denham, 2017). As shown in Table 7, Model 1 has a Cox and Snell R-Square and the Nagelkerke R-Square values of 0.355 and 0.393, respectively. This means that, the Independent variables, (ATR, ASR, IOB, IOC and TOI), can explain from 35.5% to 39.3% of the variability/ change in the dependent variable (QSR).

Model 2 has a Cox and Snell R-Square and the Nagelkerke R-Square values of 0.371 and 0.410, respectively. This means that, the Independent variables -including the control variables-, (ATR, ASR, IOB, IOC, TOI, TOA and ROA), can explain from 37.1% to 41% of the variability/change in the dependent variable (QSR). Although both models can explain a significant part of the change in the research dependent variable, it should be mentioned that a slight improvement in the value of R-Square has occurred after including the control variables, in Model 2. This implies the validity behind the decision to include the control variables in the research model.

Based on the previous discussion, the robustness of the two research models is assured through measuring their goodness of fit and level of strength in terms of their ability to statistically represent and measure the hypothesized relationships between the research dependent and independent variables. The next appropriate step is to present and discuss more specific inferential results about the variables composing each model, as presented in tables 8 and 9 that is discussed as follows.

Table 6. 8 Inferential Results for the Research Variables of Model 1

Variables	Estimate	Exponential	Sig. (P-Value)
ATR	1.222	3.393969	.000
ASR	2.083	8.028518	.000
IOB	.004	1.004008	.316
IOC	.529	1.697234	.049
TOI	.017	1.017145	.002

*Highlighted figures represent non-significant variables

Table 6. 9 Inferential Results for the Research Variables of Model 2

Variables	Estimate	Exponential	Sig. (P-Value)
ATR	1.278	3.589454	.000
ASR	2.138	8.482456	.000
IOB	.002	1.002002	.532
IOC	.457	1.579329	.092
TOI	.016	1.016129	.003
TOA	-1.224E-7	1	.001
ROA	.002	1.002002	.898

*Highlighted figures represent not significant variables.

Tables 8 and 9 present the statistical analysis for each independent variable in relation to the dependent variable through the coefficient of each variable. The first measure employed to test the relationship of an independent variable to the dependent variable is its Significance. The criterion used to judge the goodness of the Significance measure is its P-value. Similar to the P-value of the whole model significance, the P-value of the independent variables has three levels of significance, which are at 10%, 5% and 1%. Where, if the P-value is less than 0.1, then there is a strong evidence that there is a significant relationship between the independent variable and the dependent variable with a probability of 90% or more and that, there is a probability of 10% or less that this is not holding true. If the P-value is less than 0.05, then there is very strong evidence that there is a very significant relationship between the independent variable and the dependent variable with a probability of 95% or more and that there is a probability of 5% or less that this does not hold true. If the P-value is less than 0.01, this means that there is an extremely strong evidence that there is an extremely significant relationship between the independent variable and the dependent variable with a probability of 99% or more and that there is a probability of 1% or less that this does not hold true (Mason et al., 1999; Sekaran, 2000; Dougherty, 2002; Sekaran, 2003; Adams et al., 2007; Saunders et al., 2009).

After measuring the significance of the relationship between the independent and dependent variables, the second and more sophisticated level of measurement for that relationship is to measure the direction and magnitude of the relationship. For this purpose, the second measure used is the Estimates for the coefficients of the independent variables. The Estimate determines the direction of the relationship between the independent and dependent variables, of being either a Positive relationship or a Negative relationship. Moreover, the second important role for the Estimate is that it provides prediction values for the probability of the change in the outcome of the dependent variable as a result of the change in the value of the Estimate-related independent variable (Denham, 2017).

However, the Estimates values cannot be directly used to refer to the amount of the change in the dependent variable, because of the change in a certain independent variable. The reason behind this is that, the values of the Estimates coefficients are computed based on the Log

of the values for the variables data, as previously shown in the two research models, and not the normal values. Therefore, they result in Log values of Estimates as well. From a statistical viewpoint, the Log, for the values of the variables data, are used to run the ordinal regression analysis because of the nature of the dependent variable being categorical variable (Kleinbaum and Klein, 2010).

The previous chapter stated that, the categorical variable is represented in values of categories that are not real numbers and the distance between each category is not specifically determined. Then, the resulting Log values of Estimates coefficients have to be reversed back to a normal value in order to be used to build inferences about the expected change in the variables. Reversing a Log value to a normal value is implemented by computing its Exponential (Exp) value, also called Odd Ratio. As the inverse function of the Log is the Exponential, in which it inverts the power raised values back to their original values. If the Exponential value is greater than 1, this means that if the independent variable increases by 1 unit, it is more likely to be in a higher level of the dependent variable by the Exponential value. On the other hand, if the Exponential value equals or less than 1, this means that if the independent variable increases by 1 unit, it is less likely to be in a higher level of the dependent variable by the Exponential value (Dougherty, 2002; Kleinbaum and Klein, 2010; Denham, 2017). That's why the Exponential value is computed for all the resulting Estimate coefficients of variables, as shown in Tables 8 and 9. Therefore, the direction of a significant relationship is determined based on the Estimate coefficient value of the variable, while the magnitude of the significant relationship will be determined based on the Exponential value of the Estimate coefficient of the variable.

Before starting the discussion and interpretation of the statistical results for each of the research independent variables and based on the previous explanation, it should therefore be pointed out that, there are two levels of measurement, for each of the independent variables in relation to the dependent variable, which have to be interpreted by order. Where, as a first level of judgment, the independent variable has to be firstly interpreted for the existence (or not) of a significant relationship with the dependent variable. Then after fulfilling this first level of

measurement, it has to be interpreted for the direction and magnitude of that significant relationship, if any, as a second, advanced level of measurement of the relationship.

Accordingly, if the result of the first level of measurement is that, there is non-significant relationship between a certain independent variable and the dependent variable, then the second level of measurement, that is the direction and magnitude of the relationship, will be meaningless and then the values of both the independent variable Estimate and its Exponential should be ignored. As reaching an inference about the existence of non-significant relationship, is sufficient for research purposes to conclude that, a certain independent variable has no considerable effect on the dependent variable of interest, regardless of the direction and the magnitude of that relationship, if any.

As previously explained in the statistical measurement of the models as a whole, the two research models are extremely significant, with all the constituting variables are well fitted in the models, based on their P-values of Significance and Deviance. However, Model 2, that includes the control variables, was found to be better in explaining a more percentage in the variability/change that happens to the dependent variable. Thus, the Model 2 is used to interpret and discuss the inferential results for the research variables, which is presented in Table 9.

6.4.2. Analysis and Discussion of Research Hypotheses

6.4.2.1. Analysis and Discussion of Hypothesis 1

As shown in Table 9, the first independent variable that is the Adherence to Regulations (ATR) has a P-value of its coefficient by 0.000 that is less than 0.01. This means that there is extremely significant evidence, with a probability of 99%, that there is a *Significant* relationship between ATR and the dependent variable of interest that is the Quality of Sustainability Reporting (QSR). Moreover, that P-value means that, the coefficient value of the ATR is extremely significant and can be depended on. Upon fulfilling the first level of measurement for the ATR, through verifying the existence of a significant relationship with QSR, the second level of measurement is to interpret the direction and magnitude of that relationship through the

Estimate and Exponential of the coefficient. The statistical analysis resulted in an Estimate value of 1.278 and an Exponential value of 3.589454 for the ATR. Regarding the direction of the relationship, since the Estimate value is positive, then there is a *Positive* relationship between the ATR and QSR, in which as the ATR increases, the QSR increases. Regarding the magnitude of the relationship, the Exponential value of 3.589454 means that, if the ATR increases by one unit, it is more likely to be in a higher level of QSR by 3.589454 units.

Thus, the first research hypothesis is *Accepted*, stating:

H1: That Adherence to Regulations (ATR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

6.4.2.2. Analysis and Discussion of Hypothesis 2

The second independent variable that is the Assurance of the Report (ASR) has a P-value of its coefficient by 0.000 that is less than 0.01. This means that there is extremely significant evidence, with a probability of 99%, that there is a *Significant* relationship between ASR and the dependent variable of interest, -i.e. the Quality of Sustainability Reporting (QSR). Moreover, that P-value means that, the coefficient value of the ASR is extremely significant and can be depended on. After fulfilling the first level of measurement for the ASR, through verifying the existence of a significant relationship with the QSR, the second level of measurement is to interpret the direction and magnitude of that relationship through the Estimate and Exponential of the coefficient. The statistical analysis resulted in an Estimate value of 2.138 and an Exponential value of 8.482456 for the ASR. Concerning the direction of the relationship, since the Estimate value is positive, then there is a *Positive* relationship between the ASR and QSR. Where, as the ASR increases, the QSR increases. Concerning the magnitude of the relationship, the Exponential value of 8.482456 means that, if the ASR increases by one unit, it is more likely to be in a higher level of the QSR by 8.482456 units.

Thus, the second research hypothesis is *Accepted*, stating:

H2: That Assurance of the Sustainability Report (ASR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

6.4.2.3. Analysis and Discussion of Hypothesis 3

The third independent variable that is the Independence of Board (IOB) has a P-value of its coefficient by 0.532 that is greater than any of the three significance levels of 0.01, 0.05 and 0.1. This means that there is not significant relationship between IOB and the dependent variable of interest, i.e. the Quality of Sustainability Reporting (QSR). Moreover, that P-value means that, the coefficient value of the IOB is non-significant and cannot be depended on. After failing to fulfill the first level of measurement for the IOB, through verifying the existence of non-significant relationship with QSR, there is no need for the second level of measurement, in relation to the direction and magnitude of non-significant relationship. Accordingly, interpreting the Estimate and Exponential values of the variable are ignored.

Thus, the first sub-hypothesis of the third research hypothesis is *Rejected*, stating:

H3a: That Independence of Board (IOB) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

The fourth independent variable that is the Independence of Chair (IOC) has a P-value of its coefficient by 0.092 that is less than 0.1. This means that there is significant evidence, with a probability of 90%, that there is a *Significant* relationship between IOC and the dependent variable of interest, -i.e. the Quality of Sustainability Reporting (QSR). Moreover, that P-value means that, the coefficient value of the IOC is significant and can be depended on. After fulfilling the first level of measurement for the IOC, through verifying the existence of a significant relationship with the QSR, the second level of measurement is to interpret the direction and magnitude of that relationship through the Estimate and Exponential of the coefficient. The statistical analysis resulted in an Estimate value of 0.457 and an Exponential value of 1.579329 for the IOC. Concerning the direction of the relationship, since the Estimate value is positive, then there is a *Positive* relationship between the IOC and QSR, in which as the IOC increases, the QSR increases. Concerning the magnitude of the relationship, the Exponential value of 1.579329 means that, if the IOC increases by one unit, it is more likely to be in a higher level of the QSR by 1.579329 units.

Thus, the second sub-hypothesis of the third research hypothesis is *Accepted*, stating:

H3b: That Independence of Chair (IOC) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

6.4.2.4. Analysis and Discussion of Hypothesis 4

The fifth independent variable that is the Type of Information (TOI) has a P-value of its coefficient by 0.003 that is less than 0.01. This means that there is extremely significant evidence, with a probability of 99%, that there is a *Significant* relationship between TOI and the dependent variable of interest that is the Quality of Sustainability Reporting (QSR). Moreover, that P-value means that, the coefficient value of the TOI is extremely significant and can be depended on. After fulfilling the first level of measurement for the TOI, through verifying the existence of a significant relationship with the QSR, the second level of measurement is to interpret the direction and magnitude of that relationship through the Estimate and Exponential of the coefficient. The statistical analysis resulted in an Estimate value of 0.016 and an Exponential value of 1.016129 for the TOI. In terms of the direction of the relationship, since the Estimate value is positive, then there is a *Positive* relationship between the TOI and QSR. Where, as the TOI increases, the QSR increases. Concerning the magnitude of the relationship, the Exponential value of 1.016129 means that, if the TOI increases by one unit, it is more likely to be in a higher level of the QSR by 1.016129 units.

Thus, the fourth research hypothesis is *Accepted*, stating:

H4: That Type of information (TOI) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).

Figure 6. 1 Factors affecting the Quality of Sustainability Reporting

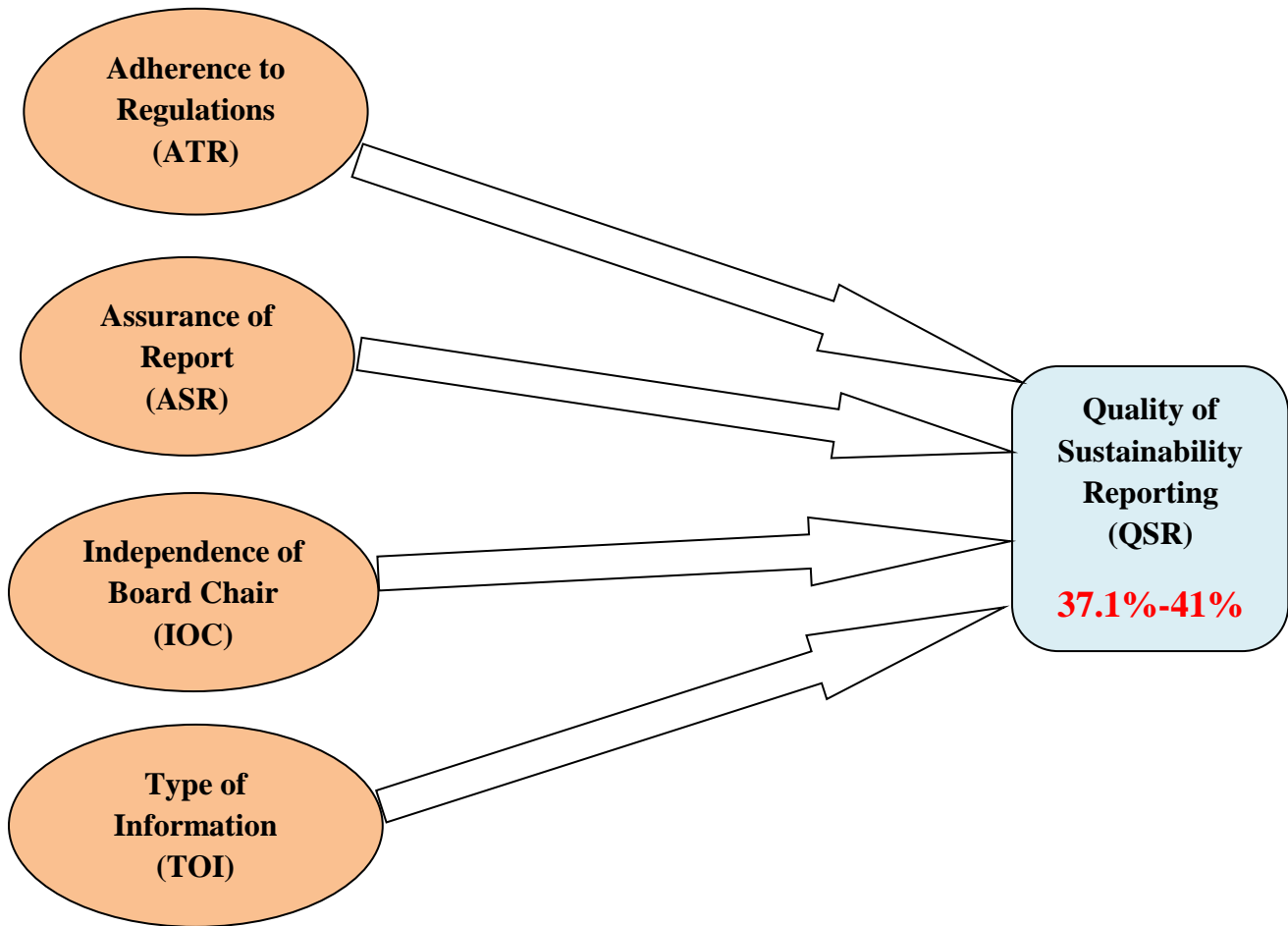


Figure 6.1. is a visual model that summarizes the results reached by the research in relation to the features found to affect the Quality of Sustainability Reporting. Thus, the figure shows the four variables, i.e. Adherence to Regulations (ATR), Assurance of Report (ASR), Independence of Chair (IOC) and Type of Information (TOI), which are found to be significantly affecting the Quality of Sustainability Reporting (QSR). The variable of the Independence of Board members (IOB) is excluded from the model, because it is found to be not significantly correlated with the quality of sustainability reporting. The figure also shows the magnitude of the overall effect of the four variables on the quality of sustainability reporting, together with the magnitude of the effect of each one of the four variables. Moreover; Table 6.10 presents a summary for each research hypothesis, the relevant results of the statistical analysis and

consequently the decision taken in terms of that hypothesis. Thus, to summarize, the Adherence to Regulations (ATR), Assurance of Report, (ASR), Independence of Chair (IOC) and Type of information (TOI) have a significant, positive effect on the Quality of Sustainability Reporting (QSR) and thus their relevant hypotheses are accepted. Conversely, Independence of Board (IOB) has non-significant effect on the Quality of the Sustainability Reporting (QSR) and thus its relevant hypothesis is rejected.

Table 6. 10 Summary for the Research Inferential Results

Hypothesis	Result (Exponential)	Decision
H1: That Adherence to Regulations (ATR) has a significant effect on the Quality of the Sustainability Reporting (QSR).	3.589454	Accepted
H2: That Assurance of the Sustainability Report (ASR) has a significant effect on the Quality of the Sustainability Reporting (QSR).	8.482456	Accepted
H3a: That Independence of Board (IOB) has a significant effect on the Quality of the Sustainability Reporting (QSR).	.532 (Sig.)	Rejected
H3b: That Independence of Chair (IOC) has a significant effect on the Quality of the Sustainability Reporting (QSR).	1.579329	Accepted
H4: That Type of information (TOI) has a significant effect on the Quality of the Sustainability Reporting (QSR).	1.016129	Accepted

6.4.2.5. Analysis and Discussion of Control Variables

The sixth independent variable, which is used as a Control variable that is the Total Assets (TOA) has a P-value of its coefficient by 0.001 that is less than 0.01. This means that there is extremely significant evidence, with a probability of 99%, that there is a *Significant* relationship between TOA and the dependent variable of interest that is the Quality of Sustainability Reporting (QSR). Moreover, that P-value means that, the coefficient value of the TOA is extremely significant and can be depended on. After fulfilling the first level of measurement for the TOA, through verifying the existence of a significant relationship with the QSR, the second level of measurement is to interpret the direction and magnitude of that relationship through the Estimate and Exponential of the coefficient. The statistical analysis resulted in an Estimate value of $-1.224E-7$ and an Exponential value of 1 for the TOA. Concerning the direction of the relationship, since the Estimate value is negative, then there is a *Negative* relationship between the TOA and QSR, in which as the TOA increases, the QSR decreases. Concerning the magnitude of the relationship, the Exponential value of 1 means that, if the TOA increases by one unit, it is less likely to be in a higher level of the QSR by 1 unit.

The seventh and last independent variable, which is used as a Control variable that is the Return on Assets (ROA) has a P-value of its coefficient by 0.898 that is greater than any of the three significance levels of 0.01, 0.05 and 0.1. This means that there is non-significant relationship between ROA and the dependent variable of interest, -i.e. the Quality of Sustainability Reporting (QSR). Moreover; that P-value means that, the coefficient value of the ROA is not significant and cannot be depended on. After failing to fulfill the first level of measurement for the ROA, through verifying the presence of non-significant relationship with the QSR, there is no need for the second level of measurement, in relation to the direction and magnitude of not significant relationship. Thus, interpreting the Estimate and Exponential values of the variable are ignored.

6.4.3. Reflections of Empirical Results with Relevant Prior Literature

After presenting and interpreting both the Descriptive and Inferential results of the statistical analysis process in this chapter, the following significant conclusions can be reached regarding the proposed research relationships. Although it is developing by time, the Quality of Sustainability Reporting (QSR) is still in its infancy with a record of 60.8% of the G100 companies, -which are supposed to be the best category of companies in adopting and applying sustainability reporting-, falls in the lowest quality level of sustainability reporting according to the GRI index scale. This finding is consistent with all of the relevant literature reviewed. It is found that, Adherence to Regulations (ATR), represented in the GRI, has an extremely significant, positive effect on improving the quality of sustainability reporting, which is consistent with the relevant literature reviewed. The GRI is the most accepted and applied reference for sustainability reporting, with a record of 61% of the G100 companies adopts adherence to the GRI regulations with varying adherence levels and this record is increasing by time. In addition, the Assurance of the Sustainability Report (ASR) is also found to have an extremely significant, positive effect on improving the quality of sustainability reporting. This is consistent with earlier relevant literature reviewed. And this finding explains the other fact that, 63.2% of the G100 sustainability reports are not externally assured and that around 60% of them has a very low quality level of Sustainability Reporting, according to the GRI scale.

Despite concluding that the Independence of the Board of Directors (IOB) in the company has a non- significant effect on the quality of sustainability reporting, it was found that, the Independence of the Chairman (IOC), -who is part of the corporate board of directors-, of the company has a significant, positive effect on improving the quality of sustainability reporting. The finding related to the IOC, is consistent with the relevant literature reviewed. However, the finding related to the IOB, falls in a debatable area within the relevant literature. For, as previously explained in Chapter 4, several researchers do find a significant relationship between corporate IOB and the Quality its Sustainability Reporting, while there are also another researches that finds not significant relationship between them. This finding can explain the fact that, 81% of the G100 do not segregate the position of corporate Chair and CEO, with a considerable bulk of these companies does not achieve high quality level of sustainability

reporting. The type of information factors was found to have an extremely significant, positive effect on improving the quality level of sustainability reporting. These accords with the vast majority of the relevant literature reviewed in this point. Therefore, the features that are concluded to have a significant effect on the Quality of Sustainability Reporting have to be taken into consideration in order to improve that quality level.

At this point, the research has accomplished most of its objectives through testing the hypothesized features affecting the Quality of Sustainability Reporting. These features are all theoretically grounded by and linked into the legitimacy theory. The last objective to be achieved is to conduct a comparative analysis between the G100 companies, based on the results of the previous regression analysis implemented. However; before proceeding to the next objective, it should be noted that, the research considers the implementation of statistical analyses in different settings, as follows. Although, the research is targeting to test the features affecting the Quality of Sustainability Reporting in a global setting. This is because Sustainability is as a global issue that requires global data and global measurement index i.e. the GRI. The research undertook statistical testing (regression analysis) for the same features in a sector-specific setting and country-specific setting, in case of any relevant insights that can be developed. However; this could be not implemented because of the small number of reports (less than 30) existed in each of these settings that statistically hinders conducting that testing. Despite of that, the next section of the chapter is dedicated for conducting a comparative analysis of the tested variables among the G100 companies, in an attempt to develop more relevant scientific insights, if any.

6.4.4. Comparative Analysis of SR among the Countries of the G100

In the light of the Quality of Sustainability Reporting (QSR) that is the focus of this research, this analysis seeks to assess Sustainability Reporting (SR) on a *country level* for the G100 companies containing 500 sustainability reports. In general, the *Comparative Analysis* compares two or more aspects across different countries and/or cultures, in order to stress the common practices and/or main differences. In doing so, they may reveal certain aspects about one or more of the things being compared (Heidenheimer, et al., 1983). In this regard, the

research compares between the G100, in order to reveal the differences among these countries regarding their QSR and related practices.

There is no specific methodology that must be employed when conducting a comparative study. However, it is agreed that, quantitative analysis is more frequently applied than qualitative analysis. More specifically, quantitative analysis of secondary data is more widespread than that of primary data. The reason is that, quantitative is much easier to be compared than the qualitative data. Moreover; since the comparative analysis includes large number of comparing points, it is significantly more efficient to use secondary data, in which they more efficient in time, effort and accuracy than acquiring primary data that requires more time and effort to be obtained for the different countries being compared (Deacon 1983; Deutsch 1987; Esping-Andersen 1990; Clasen 2004). Thus, the research is well suited to the research methodology applied to comparative analysis, in which it applies a secondary, quantitative analysis.

In terms of Sustainability particularly, it is found that, the social and environmental performances of the company tend to be affected by the origin country of that company, which includes legal and institutional factors. These factors also have an effect on the corporate adoption and implementation of relevant sustainability practices. Despite this, they pointed out that, the comparative studies conducted in the field of the corporate sustainability practices are still very rare (Williams and Aguilera, 2008; Maletic et al., 2016). That is why the research integrates this country-based, comparative analysis within the research statistical analysis process, in an attempt to fill this gap in the sustainability literature, as well as, presenting another dimension for the assessment of the corporate sustainability performance globally, which is a country level assessment.

The G100 companies are located in 19 countries, across which the comparative analysis is conducted. The analysis compares these countries, in regards to the QSR (the research dependent variable) and four out of the five, main independent variables, i.e. excluding the control variables, as presented in Tables 6.11, 6.12, 6.13, 6.14 and 6.15 and relevant Charts 1, 2, 3, 4 and 5. The four independent variables are the Adherence to Regulations (ATR), the

Assurance of Report (ASR), the Independence of Chair (IOC) and the Type of Information (TOI). The Fifth, main independent variable that is the Independence of Board (IOB) is excluded from the comparative analysis because, based on the previous statistical analysis, it is demonstrated that, there is non-significant relationship between IOB and the QSR, so that the IOB variable is ignored.

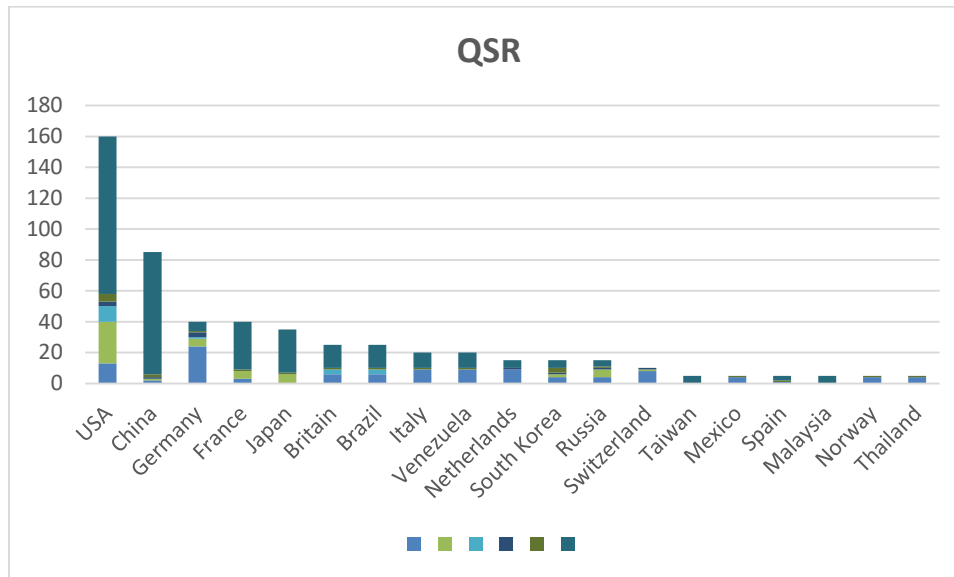
As shown in Tables 6.11, 6.12, 6.13, 6.14 and 6.15 and relevant Charts 1, 2, 3, 4 and 5, the 19 countries, in which the G100 companies are headquartered, are arranged in a descending order according to the number of the sustainability reports in each country out of the total 500 sustainability reports of the G100 companies. The USA is the first ordered as it has the largest number of Sustainability Reports, which is 160 reports. While, Taiwan, Mexico, Spain, Malaysia, Norway and Thailand, are the last ordered, as they include the smallest number of sustainability reports, i.e. 5 reports in each country. Each measurement level within each variable is represented in both the absolute number of the 500 reports of the G100 in a certain country that fall in this measurement level, as well as, the percentage of these reports out of the total 500 reports of the G100 in that country. The absolute number of reports reflects the prevalence of a certain SR aspect within the country, whereas, the percentage of companies' report enables the comparison between countries, which have different sample sizes of companies and thus reports, in relation to that SR aspect.

The comparative analysis for each variable usually starts with the countries of USA and China, because they comprise the largest number of the G100 companies (compared with the other countries), which are 32 and 17 companies, successively. Consequently, USA and China comprise the largest number of sustainability reports, i.e. 245 reports out of the total 500 reports of the G100 companies (160 and 85 reports successively). That represent almost half of the G100 sustainability reports. So that, the performances of the USA and China, is highly considerable and represents a significant prevalence within the domain of Sustainability Reporting.

Table 6. 11 QSR among the G100 countries

No.	Country	QSR- (GRI grading)												Total
		A	A (%)	B	B (%)	C	C (%)	D	D (%)	E	E (%)	F	F (%)	
1	USA	13	8.1	27	16.9	10	6.3	3	1.9	5	3.1	102	63.8	160
2	China	2	2.4	1	1.2	0	0.0	1	1.2	2	2.4	79	92.9	85
3	Germany	24	60.0	5	12.5	1	2.5	3	7.5	1	2.5	6	15.0	40
4	France	3	7.5	5	12.5	0	0.0	0	0.0	1	2.5	31	77.5	40
5	Japan	0	0.0	6	17.1	0	0.0	0	0.0	1	2.9	28	80.0	35
6	Britain	6	24.0	0	0.0	3	12.0	0	0.0	1	4.0	15	60.0	25
7	Italy	9	45.0	0	0.0	0	0.0	0	0.0	1	5.0	10	50.0	20
8	Netherlands	9	60.0	0	0.0	0	0.0	1	6.7	0	0.0	5	33.3	15
9	South Korea	4	26.7	2	13.3	0	0.0	1	6.7	3	20.0	5	33.3	15
10	Russia	4	26.7	5	33.3	0	0.0	1	6.7	1	6.7	4	26.7	15
11	Switzerland	8	80.0	1	10.0	0	0.0	1	10.0	0	0.0	0	0.0	10
12	Brazil	1	20.0	0	0.0	1	20.0	0	0.0	0	0.0	3	60.0	5
13	Taiwan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0	5
14	Mexico	4	80.0	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0	5
15	Spain	1	20.0	0	0.0	0	0.0	0	0.0	1	20.0	3	60.0	5
16	Malaysia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0	5
17	Norway	4	80.0	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0	5
18	Thailand	4	80.0	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0	5
19	Venezuela	1	20.0	0	0.0	0	0.0	0	0.0	1	20.0	3	60.0	5

Chart 6.1. QSR among the G100 countries



The first variable employed in the comparative analysis is QSR, as shown in Table 6.11 and the relevant Chart 1. The 19 countries are compared based on the six measurement levels of the QSR, ranging from (A) for the best quality level of SR to (F) for the worst quality level of SR, (as previously detailed in Chapter 5). It is found that, USA and China, have a poor quality level of SR, with 63.8% and 92.9% of the G100 companies' reports in USA and China respectively fall in the (F) level of QSR. While, only 8.1% and 2.4%, of these companies' reports, respectively, achieve an (A) level of QSR, and the remaining companies spread among the middle quality levels. This reflects a poor prevalence for quality aspect of SR in these countries and worldwide.

The research considered conducting a separate descriptive analysis for USA and China only over the years 2011-2015. The reason behind this consideration is that, as mentioned previously USA and China comprise the largest number of Sustainability Reports, compared to the other G100 countries then, it can be considered as an attempt to develop relevant insights, if any. However; this could be not implemented because of two reasons, as follows. The first reason is that, each country includes several companies, i.e. 32 companies in USA and 17 companies in China, where each company of these has a different score of QSR. Consequently, a

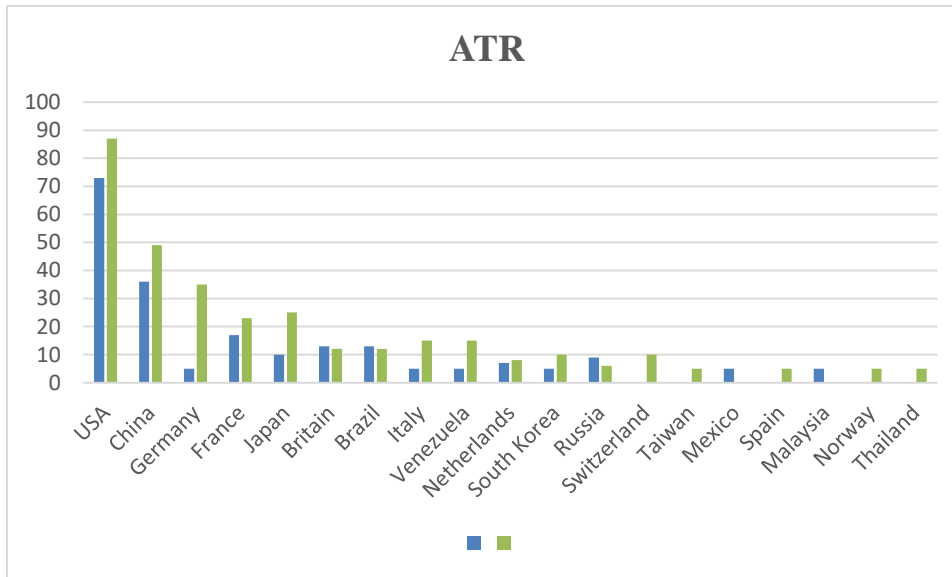
robust QSR performance within a certain year is not represented, as each year comprises different QSR performances of different companies. Accordingly, the research considers taking one sample company from each of the USA and China to implement that analysis through years. However; this could not be implemented as well for the following second reason. The second reason is that, based on the previously represented, comparative analysis for the QSR variable, it is found that almost all of the companies in the USA and China have a constant score of QSR over the years of 2011-2015. Thus, this steady QSR performance, reflects a straight line presentation and does not provide any relevant insights over years.

Resuming QSR analysis in Table 6.11, other countries, which are Taiwan and Malaysia, are found to have the poorest QSR by all of them consistently falling in the (F) level of QSR. However, it should be clarified that, these countries comprise the smallest number of the 500 Sustainability Reports, i.e. 5 reports in each of these countries. Thus, this cannot significantly reflect a poor prevalence for quality aspect of SR in these countries. On the other side, there are countries achieving excellent levels of QSR. This would include countries like Switzerland, Mexico, Norway and Thailand. These countries are found to be achieving the highest quality levels of SR., whereas, 80% of the G100 companies in each of these countries fall in the (A) level of QSR. However, it should be clarified that, these countries comprise a modest number of Sustainability Reports, ranging from 5 to 10 reports, in each of these countries. This reflects a relatively good prevalence for quality assessment aspect of SR in these countries. In addition, Germany and Netherlands are found to be achieving high quality levels of QSR, whereas, 60% of their G100 companies in each of these countries fall in the (A) level of QSR. These two countries comprise a relatively large number of the 500 sustainability reports. In this regards, Germany includes 40 reports and the Netherlands includes 15 reports. This reflects a relatively good prevalence for quality assessment aspect of SR in these countries. The remaining countries fall in middle ranges of the SR quality levels.

Table 6. 12 ATR among the G100 countries

No.	Country	ATR				Total
		No	No (%)	Yes	Yes (%)	
1	USA	73	45.6	87	54.4	160
2	China	36	42.4	49	57.6	85
3	Germany	5	12.5	35	87.5	40
4	France	17	42.5	23	57.5	40
5	Japan	10	28.6	25	71.4	35
6	Britain	13	52.0	12	48.0	25
7	Brazil	13	52.0	12	48.0	25
8	Italy	5	25.0	15	75.0	20
9	Venezuela	5	25.0	15	75.0	20
10	Netherlands	7	46.7	8	53.3	15
11	South Korea	5	33.3	10	66.7	15
12	Russia	9	60.0	6	40.0	15
13	Switzerland	0	0.0	10	100.0	10
14	Taiwan	0	0.0	5	100.0	5
15	Mexico	5	100.0	0	0.0	5
16	Spain	0	0.0	5	100.0	5
17	Malaysia	5	100.0	0	0.0	5
18	Norway	0	0.0	5	100.0	5
19	Thailand	0	0.0	5	100.0	5

Chart 6.2. ATR among the G100 countries



The second variable employed in the comparative analysis is the ATR, as shown in Table 6.12 and relevant chart 2. In which, the 19 countries are compared based on the two measurement levels of the ATR, that are (Yes) in case of adherence to SR regulations and (No) in case of no adherence to SR regulations, as previously detailed in chapter 5. It is found that, around half of the G100 companies in USA and China adhere to SR regulations. Whereas, 54.4% and 57.6% of the G100 companies in USA and China respectively, adhere to the GRI guidelines for their SR. As the USA and China contain the largest number of the G100 countries and thus 500 reports, this reflects only a moderate prevalence for the aspect of the adherence to GRI guidelines in these countries and worldwide. It appears that, Switzerland, Taiwan, Spain, Norway and Thailand, fully adhere to GRI. Whereas, 100% of the G100 companies in each of these countries adhere to the GRI guidelines for their SR. However, it should be clarified that, these countries comprise a modest number of these 500 Sustainability Reports, which is ranging from 5 to 10 reports, in each of these countries. This reflects a relatively good prevalence for the aspect of the adherence to GRI guidelines in these countries.

In addition, countries of Germany, Japan, Italy and Venezuela are found to be adhering to the GRI guidelines to a large extent, whereas, 87.5%, 71.4%, 75% and 75% respectively of the

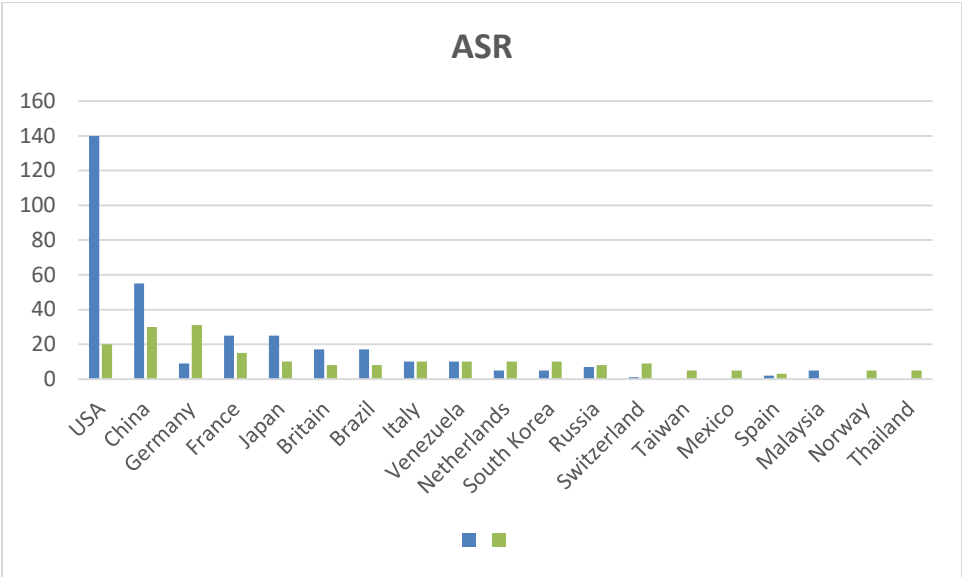
G100 companies in each of these countries, adhere to the GRI guidelines for their SR. These countries comprise a relatively large number of the 500 sustainability reports, in which they include 40, 35, 20 and 20 reports, respectively. This reflects a relatively good prevalence for the aspect of the adherence to GRI guidelines in these countries. On the other hand, there are countries found to be not adhering to SR regulations at all. In which, all the G100 companies (100%) within countries of Mexico and Malaysia are not preparing their sustainability reports in accordance with any relevant regulations. However, it should also be clarified that, these countries comprise the smallest number of Sustainability Reports, which is 5 G100 companies in each of these countries. Thus, this cannot significantly reflect a poor prevalence for the aspect of the adherence to GRI guidelines in these countries. The remaining countries fall in middle ranges when applying the ATR variable.

Table 6. 13 ASR among the G100 countries

No.	Country	ASR				Total
		No	No (%)	Yes	Yes (%)	
1	USA	140	87.5	20	12.5	160
2	China	55	64.7	30	35.3	85
3	Germany	9	22.5	31	77.5	40
4	France	25	62.5	15	37.5	40
5	Japan	25	71.4	10	28.6	35
6	Britain	17	68.0	8	32.0	25
7	Brazil	17	68.0	8	32.0	25
8	Italy	10	50.0	10	50.0	20
9	Venezuela	10	50.0	10	50.0	20
10	Netherlands	5	33.3	10	66.7	15
11	South Korea	5	33.3	10	66.7	15
12	Russia	7	46.7	8	53.3	15
13	Switzerland	1	10.0	9	90.0	10
14	Taiwan	0	0.0	5	100.0	5

No.	Country	ASR				Total
		No	No (%)	Yes	Yes (%)	
15	Mexico	0	0.0	5	100.0	5
16	Spain	2	40.0	3	60.0	5
17	Malaysia	5	100.0	0	0.0	5
18	Norway	0	0.0	5	100.0	5
19	Thailand	0	0.0	5	100.0	5

Chart 6.3. ASR among the G100 countries



The third variable employed in the comparative analysis is the ASR, as shown in Table 6.13 and relevant Chart 3. The 19 countries are compared based on the two measurement levels of the ASR, that are (Yes) in case that an external assurance is provided for the corporate sustainability report and (No) in case that no external assurance is provided for the corporate sustainability report, (as previously detailed in Chapter 5). It is found that, the vast majority of the G100 sustainability reports in USA and China are not externally assured by an independent, third party assurer. Whereas, 87.5% and 64.7% of G100 companies in USA and China respectively, do not implement an external assurance for their SR. Since USA and China contain the largest number of G100 companies and thus reports, then, this reflects a poor prevalence for the aspect of the external assurance for SR in these countries and worldwide.

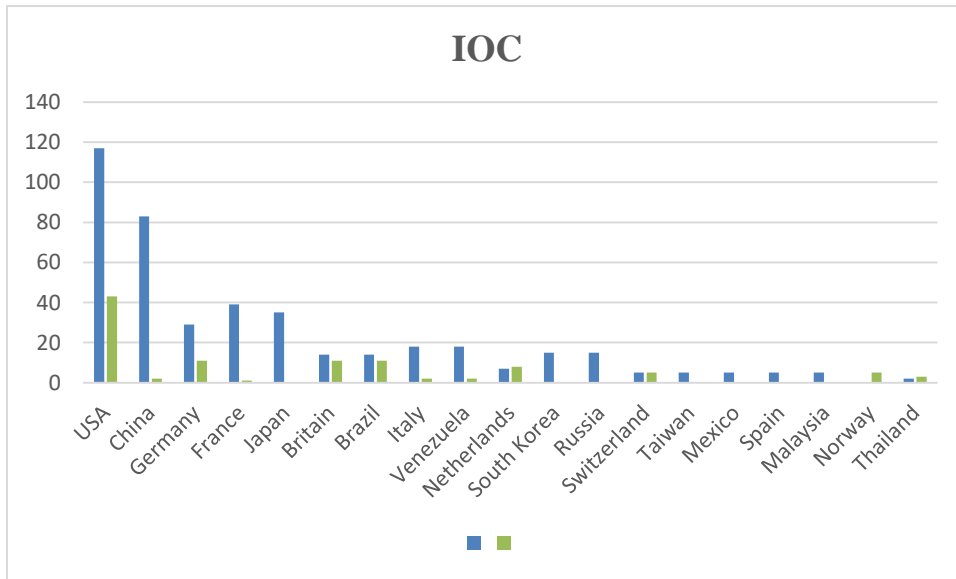
It is also found that, Malaysia does not provide an external assurance for all its G100 countries. Whereas, 100% of the G100 companies in this country do not externally assure their SR. Again, the issue of the small number should be recognized. Thus, this cannot significantly reflect a poor prevalence for the aspect of the external assurance for SR in this country. It is also found that, countries of Japan, Britain and Brazil are found to be not provide an external assurance to a large extent, whereas, 71.4%, 68% and 68% successively of the G100 companies in each of these countries, do not externally assure their SR. These countries comprise a relatively large number of the 500 sustainability reports, in which they include 35, 25 and 25 reports, respectively. This reflects a poor prevalence for the aspect weak adherence to the aspect of assurance of SR in these countries.

On the other hand, there are countries found to be consistently and fully providing an external assurance for their SR. Thus, all the G100 reports (100%) within the countries of Taiwan, Mexico, Norway and Thailand, are externally assured by an independent, third party assurer. Again, the issue of the small number should be recognized. Thus, this cannot significantly reflect a poor prevalence for the aspect of the external assurance for SR in these countries. In addition, Switzerland is found to be providing an external assurance to a large extent, whereas, 90% of the G100 reports in this country, are externally assured by an independent, third party assurer. However, it should also be clarified that, Switzerland comprises a modest number of sustainability reports that is 10 reports. This reflects a relatively good prevalence for the aspect of the assurance of SR in this country. In a parallel context, Germany is found to be providing an external assurance for its G100 companies to a large extent. In which, 77.5% of the G100 reports within this country, are externally assured by an independent, third party assurer. However, as Germany comprises a large number of the 500 sustainability reports, i.e. 40 reports, this reflects a good prevalence for the assurance aspect of SR in this country. The remaining countries fall in middle ranges of applying the variable of the ASR.

Table 6. 14 IOC among the G100 countries

No.	Country	IOC				Total
		No	No (%)	Yes	Yes (%)	
1	USA	117	73.1	43	26.9	160
2	China	83	97.6	2	2.4	85
3	Germany	29	72.5	11	27.5	40
4	France	39	97.5	1	2.5	40
5	Japan	35	100.0	0	0.0	35
6	Britain	14	56.0	11	44.0	25
7	Brazil	14	56.0	11	44.0	25
8	Italy	18	90.0	2	10.0	20
9	Venezuela	18	90.0	2	10.0	20
10	Netherlands	7	46.7	8	53.3	15
11	South Korea	15	100.0	0	0.0	15
12	Russia	15	100.0	0	0.0	15
13	Switzerland	5	50.0	5	50.0	10
14	Taiwan	5	100.0	0	0.0	5
15	Mexico	5	100.0	0	0.0	5
16	Spain	5	100.0	0	0.0	5
17	Malaysia	5	100.0	0	0.0	5
18	Norway	0	0.0	5	100.0	5
19	Thailand	2	40.0	3	60.0	5

Chart 6.4. IOC among the G100 countries



The fourth variable employed in the comparative analysis is IOC, (as shown in Table 6.14 and relevant Chart 4). In this context, the 19 countries are compared based on the two measurement levels of the IOC, that are (Yes) in case that there is a separation between the corporate Chairperson and the CEO and (No) in case that the separation does not exist. However, there is a duality of the two positions of the corporate Chairperson and CEO, (as previously detailed in Chapter 5). It is found that, the vast majority of the G100 sustainability reports in USA and China do not have an independent Chairperson. Whereas, 71.3% and 97.6% of the G100 companies in USA and China successively, do not separate the corporate Chairperson from its CEO. As the USA and China contain the largest number of G100 companies and thus reports, then, this reflects a very poor prevalence for the aspect of the independence of corporate Chairperson in these countries and worldwide.

A considerable number of the 19 G100 countries do not have an independent Chairperson. Consistently, countries of Japan, South Korea, Russia, Taiwan, Mexico Spain and Malaysia have a duality in the positions of the corporate Chairperson and the CEO for all their G100 companies. However, these countries vary among each other in terms of the number of the G100 companies they involve. In which, Japan has a relatively large number of the 500

sustainability reports, that is 35 reports. This reflects a very poor prevalence for the aspect of the independence of corporate Chairperson in this country. South Korea and Russia have a modest number of Sustainability Reports, which is 15 reports in each of them. This reflects a relatively poor regard for the aspect of the independence of corporate Chairperson in these countries. Taiwan, Mexico Spain and Malaysia have the smallest number of Sustainability Reports, i.e. 5 reports in each country. And such small number would not permit serious generalizations.

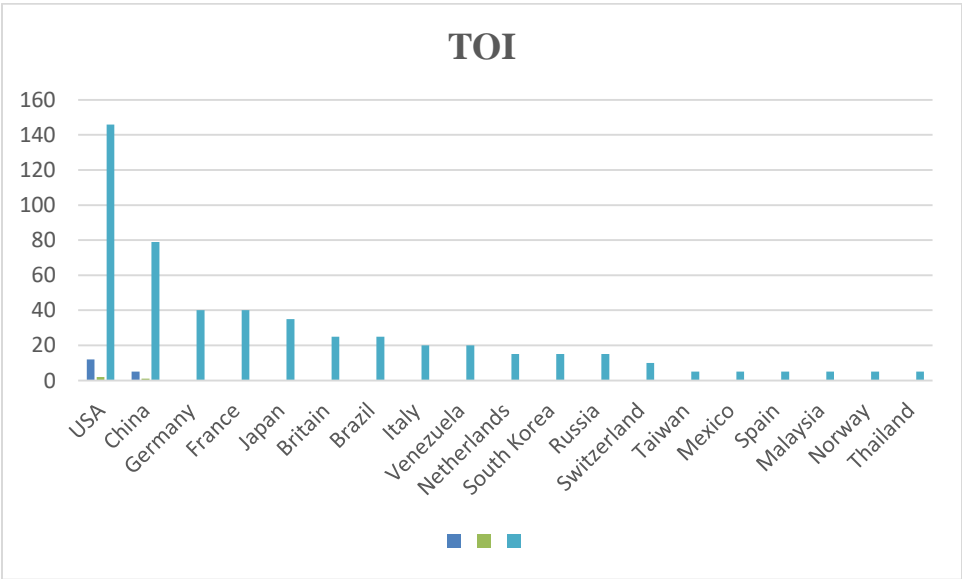
Similarly, other countries do not take regard for the concept the independence of the Chairperson in most of their G100 companies. Where, China, France, Italy and Venezuela, with 97.6%, 97.5%, 90% and 90% of their G100 companies, respectively, do not separate their corporate Chairperson and CEO. These countries comprise a relatively large number of sustainability reports, i.e. 85, 40, 20 and 20 reports, respectively. This reflects a relatively high prevalence for the aspect of the independence of corporate Chairperson in these countries. On the other hand, there is only one country that is found to be fully employing the concept of the independence of the Chairperson in all of its companies, which is Norway. However, it should also be clarified that, Norway comprises the smallest number of G100 sustainability reports, i.e. 5 reports. Thus, this cannot significantly reflect an excellent prevalence for the aspect of the independence of corporate Chairperson in this country. The remaining countries fall in middle ranges of applying the variable of the IOC

Table 6. 15 TOI among the G100 countries

No.	Country	TOI						Total
		0	0 (%)	50	50 (%)	100	100 (%)	
1	USA	12	7.5	2	1.3	146	91.3	160
2	China	5	5.9	1	1.2	79	92.9	85
3	Germany	0	0.0	0	0.0	40	100.0	40
4	France	0	0.0	0	0.0	40	100.0	40
5	Japan	0	0.0	0	0.0	35	100.0	35
6	Britain	0	0.0	0	0.0	25	100.0	25

No.	Country	TOI						Total
		0	0 (%)	50	50 (%)	100	100 (%)	
7	Brazil	0	0.0	0	0.0	25	100.0	25
8	Italy	0	0.0	0	0.0	20	100.0	20
9	Venezuela	0	0.0	0	0.0	20	100.0	20
10	Netherlands	0	0.0	0	0.0	15	100.0	15
11	South Korea	0	0.0	0	0.0	15	100.0	15
12	Russia	0	0.0	0	0.0	15	100.0	15
13	Switzerland	0	0.0	0	0.0	10	100.0	10
14	Taiwan	0	0.0	0	0.0	5	100.0	5
15	Mexico	0	0.0	0	0.0	5	100.0	5
16	Spain	0	0.0	0	0.0	5	100.0	5
17	Malaysia	0	0.0	0	0.0	5	100.0	5
18	Norway	0	0.0	0	0.0	5	100.0	5
19	Thailand	0	0.0	0	0.0	5	100.0	5

Chart 6.5. TOI among the G100 countries



The fifth variable considered within the comparative analysis is TOI, (as shown in Table 6.15 and relevant Chart 5). Again, the 19 countries are compared based on the three measurement levels of the TOI, i.e. (0) if there is no quantitative information for both the social and environmental performance of the company, (50) if there is quantitative information for only one of the two dimensions, (either the social or the environmental performance of the company) and (100) if there is quantitative information for both the social and environmental performance of the company, (as previously detailed in Chapter 5).

The comparative analysis regarding this variable reveals favorably positive results for all the G100 companies, as follows. It is found that, 17 out of the 19 G100 countries, (all countries except USA and China); include quantitative information for both the Social and Environmental performances in all of their Sustainability Reports (100%). For the USA and China, it is found that, the vast majorities of the G100 sustainability reports in these two countries include quantitative information for both the social and environmental performances of their companies, with ratios of 71.3% and 97.6%, respectively. Thus, this reflects an extremely high prevalence for the aspect of the inclusion of quantitative information for both the social and environmental dimensions of the corporate sustainability performance within Sustainability Reports in these countries and worldwide.

Overall, the comparative analysis among the G100 countries reveals the following results, regarding the five employed variables. In terms of the first variable, i.e. QSR; it is noted that, Switzerland, Mexico, Norway, Thailand, Germany and Netherlands, are achieving the highest quality levels of SR. In terms of the second variable, i.e. ATR; it is noted that, Switzerland, Taiwan, Spain, Norway, Thailand, Germany, Japan, Italy and Venezuela, are achieving the highest adherence levels to the GRI regulations for SR. Regarding the third variable of the ASR; it is noted that Taiwan, Mexico, Norway, Thailand, Switzerland and Germany are achieving the highest levels external assurance to their SR. In terms of the fourth variable, i.e. IOC; it is noted that Norway is the only country that is achieving a high level of applying the concept of the independence of corporate chairperson. In terms of the fifth and last variable of the TOI; it is pleasing to note that all the G100 countries achieve the highest levels in

terms of including quantitative information for the social and environmental dimensions of sustainability in their SR.

Based on the previous results of the comparative analysis, it is inferred in most cases that, the countries that achieve the highest levels of the four employed, independent variables (ATR, ASR, IOC and TOI), are the same countries that achieve the highest level of the employed, dependent variable (QSR), i.e. Switzerland, Norway, Thailand and Germany. This inference concurs with the statistical inferences deduced in the previous section identifying a significant relationship between the four corporate governance practices of Adherence to Regulations (ATR), Assurance of Reports (ASR), Independence of Chairperson (IOC) and Type of Information (TOI) and the Quality of Sustainability Reporting (QSR).

6.5. Practical Validation of the Empirical Results

As a concluding step, the research sought to acquire appropriate endorsement and validation of its empirical results from the practical setting, in addition to their validation acquired from the research setting. This is achieved through carrying out *confirming discussions* to discuss the empirical results reached by the research with practitioners working in the “real world”. The confirming discussions were held in Egypt, a country representative of developing nations. Additionally, as it is the home country of the researcher, Egypt had the potential to share the benefits of the present research. Although Egypt is not one of the G100 companies, 39% of the G100 companies have Egyptian branches or at least operations in Egypt. Accordingly, the researcher seeks to evaluate the applicability of the results and consequent policy and practice implications of this research in terms of the Egyptian context.

The *confirming discussions* are held with two professionals working in two of the senior corporate governance practitioners in Cairo, Egypt, which are the Commercial International Bank- (CIB) and Talaat Moustafa Group (TMG). The first professional is directly involved with the Sustainability Reporting process within the bank, (contacts are available upon request). The second professional is a Director in TMG, who is also directly involved in the Sustainability

Reporting process in the group, (contacts are available upon request). The two professionals were each provided with a Confirming Discussions Form that contained a brief about the research. The form gave some details of the conceptual aspect of the research topic focusing on Quality of Sustainability Reporting (QSR) and the motivation behind it and empirical aspects of main conclusions reached by this research. At the end of this briefing, the form required the professionals to provide their own relevant professional thoughts about the provided scientific insights, while focusing on two main points. These two main points are: 1) *The current quality level of SR in the Egyptian business sector*, 2) *Factors that should be considered to maintain a qualified SR in the Egyptian setting*.

Based on these confirming discussions in Egypt, it is found that the professionals' suggestions are similar to a large extent. These suggestions appear to focus around four main points, as follows. First, the practitioners suggest that further procedures have to be undertaken to govern the corporate sustainability reporting practices, in which they agree that the quality level of sustainability reporting in Egypt is still evolving and includes several confusing issues. This entails more awareness and training to be embedded within the organizational strategy of the Egyptian firms. Where, both professionals claim that, although the SR practice is very much appealing within their firms, the broad practice of SR in the Egyptian market in general is very poor and lagging behind other markets, especially those of the developed countries. This suggestion is consistent with the empirical results of the research, as well as, the relevant literature reviewed claiming the poor quality of SR. Second, among the main suggestions is that, there has to be obligatory standards and rules for preparing the corporate sustainability report, in order to guarantee a minimum quality level for the disclosed report. It is emphasized that, there should be a decisive system to ensure the firms' adherence to the relevant regulations and so that guarantee a qualified level of sustainability reports. This suggestion is consistent with the empirical results of the research, as well as, the relevant literature reviewed claiming the significant effect of the adherence to regulations on the quality of SR.

Third, the professionals emphasized that, the relevant rules and regulations have to include the implementation of an external assurance by an independent, professional party to

legitimize the sustainability report, as it is the case for the traditional annual reports that must be externally audited and approved for those companies listed in the Egyptian stock market. The practitioners also propose that the monitoring and assurance of these standards can be implemented by an Egyptian regulating body, for example the Central Bank of Egypt for firms operating within the banking sector. Thus, this assurance ensures a qualified level of SR. Accordingly; these suggestions are consistent with the research empirical results stating that, the adherence to regulations and the assurance of the report have a significant improving effect on the quality of the sustainability reporting, as well as, the relevant literature reviewed. Fourth, they significantly emphasized the effective role played by the board of directors in the effectiveness and efficiency of the SR process within any firm. In which, a robust firm's board can develop and monitor a qualified SR process. Where, this process should be integrated within the firm's strategy that is established by these senior management boards. This suggestion is consistent with the empirical results of the research, as well as, the relevant literature reviewed claiming the significant effect of the board chair on the quality of SR.

6.6. Chapter Summary

This chapter presented the empirical results of the statistical analysis process of the research, in addition to providing a detailed explanation of these results. The empirical results were presented in the chapter by dividing them into, mainly, the three categories, i.e. *Descriptive results*, *Inferences from Data Collection Process* and *Inferential results*. Concerning the Descriptive category, the results were presented and discussed for each of the research variables, which have been divided into two groups. The first group contained the Categorical variables i.e. Quality of Sustainability Reporting (QSR), Adherence to Regulations (ATR), Assurance of Report (ASR), Independence of Chair (IOC) and Type of Information (TOI). The second group contained the Continuous variables, i.e. Independence of Board (IOB), Total Assets (TOA) and Return on Assets (ROA).

The main inferences deducted from the Descriptive results of the statistical analysis process are as follows. It is realized that, most of the G100 companies are allocated in a low rank

of quality level for sustainability reporting according to the GRI quality measurement. However, the vast majority of the G100 adopts the adherence to the GRI regulations, while they are adhering to the GRI reporting regulations with varying levels of adherence and application. The sustainability reports of the sample companies are found to include quantitative information, to a large extent, in one or more of the three sustainability dimensions, i.e. economic, social and environmental. Furthermore, it is found that, only a small number of G100 companies were providing an external assurance for their sustainability reports over the five years of 2011 till 2015. Separation between the position of the Chairman and CEO was found to be achieving a very low level, with a high percentage of the companies are found not to be separating the two positions.

Regarding the second category of the empirical results, the research reported some inferences that have been evolving throughout the data collection process. On the top of these inferences is that, the quality level of sustainability reporting was found to be obviously improving as years move on. Then, the third category of the inferential results was mainly divided into two parts, which are the statistical analysis for the *research models* and *hypotheses* and the *comparative analysis* across and among the G100 companies. The first part is dedicated to present and discuss the Inferential results of the statistical analysis process for the applied research models. From the Inferential results of the statistical analysis process, it is concluded that, there an extremely significant relationship between the two variables of the Adherence to Regulations (ATR) and the Assurance of Report (ASR) and the Quality of Sustainability Reporting (QSR). This conclusion resulted in the acceptance of the first hypothesis confirming that, *there is Adherence to Regulations (ATR) is significantly and positively affecting the Quality of the Sustainability Reporting (QSR)* and the second hypothesis confirming that, *Assurance of the Sustainability Report (ASR) is significantly and positively affecting the Quality of the Sustainability Reporting (QSR)*.

Moreover; it is also concluded that, there is a significant relationship between the two variables of the Independence of Chair (IOC) and Type of Information (TOI) and the Quality of Sustainability Reporting (QSR). This conclusion resulted in the acceptance of the second sub-

hypothesis of the third hypothesis confirming that, *Independence of Chair (IOC) is significantly and positively affecting the Quality of the Sustainability Reporting (QSR)* and the fourth hypothesis confirming that, *Type of information (TOI) is significantly and positively affecting the Quality of the Sustainability Reporting (QSR)*. Whilst; it is concluded that, there is non-significant relationship between the Independence of Board (IOB) and the Quality of Sustainability Reporting (QSR). This conclusion resulted in the rejection of the first sub-hypothesis of the third hypothesis confirming that, *Independence of Board (IOB) is significantly and positively affecting the Quality of the Sustainability Reporting (QSR)*.

The second part was devoted to present and discuss the Inferential results of the comparative analysis conducted among countries of the G100 companies, regarding the quality of their sustainability reporting and variables that were found to have a significant relationship with that quality, based on the results of the previous statistical analysis. Fortunately, the results of the comparative analysis support the results of the statistical analysis regarding the research hypotheses. These demonstrated that, in almost all cases that, the countries achieving the highest level of QSR were the same countries achieving the highest levels of ATR, ASR, IOC and TOI. Therefore; this assures the research conclusion that, there is a significant relationship between Quality of Sustainability Reporting (QSR) and Adherence to Regulations (ATR), Assurance of Report (ASR), Independence of Chair (IOC) and Type of Information (TOI). The chapter also sought assuring to obtain confirmation of the research results from two corporate governance practitioners in Egypt.

Based on that, since the research decided on the proposed hypotheses and consequently answered the research questions, therefore the research objectives are achieved. Consequently, the next, and last, chapter is dedicated to providing a very brief summary of the whole thesis and its main conclusions. In addition, the importance of the research conclusions is discussed in relation to the knowledge value-added and the implications for policy makers and implementers. Finally, the next chapter also highlights the research limitations faced and so that makes suggestions evolving for future research in order to handle these limitations.

Chapter 7

Research Conclusions, Policy Contributions and Suggestions for Future Research

Chapter 7: The Research Conclusions, Policy Contributions and Suggestions for Future Research

7.1. Chapter Introduction

The previous chapter provided a presentation of the Empirical Results and a Discussion of them. That done, the objectives of the research have been substantially achieved. The previous chapter also presented the descriptive results of the statistical analysis process implemented for the collected data. Where, it provides a discussion of these descriptive results for each of the research variables. This was followed by a discussion of inferences about the research variables, which were developed from the data collection process. These inferences lead to the formulation of preliminary insights and conclusions about the variables tested and consequently the research hypotheses.

However, these preliminary inferences should be supported and so that upgraded by the inferential results, in order to enable deciding on its tested hypotheses. Accordingly, the chapter then presented a discussion of these inferential results of the statistical analysis process. Where, it provided a detailed discussion of the inferential, statistical results both for the research models as a whole and each of the tested variables. Based on these results, the research reached conclusions regarding the tested hypotheses and then deciding on them, by individually accepting or rejecting each one of such hypotheses. On doing so, the research objectives are substantially achieved.

This last chapter of the thesis, in the main, provides a summary of its entirety. It revisits the main conclusions determined (**7.2. Research Summary and Conclusions**). Furthermore, it takes the opportunity to consider their original contribution (**7.3. Research Original Contribution**), in terms of the knowledge value-added (**7.3.1. Knowledge Value-Added**) and their policy implications (**7.3.2. Policy and Practice Implications**). The last section of the chapter considers some of the limitations faced by the research and accordingly makes

suggestions for future research opportunities and researchers (**7.4. Research Limitations and Suggestions for Future Research**).

The concluding paragraphs express the hope that, this thesis would have made at least a minimal contribution towards raising awareness of, and sensitivity towards, Sustainability, through specifically its Reporting Quality. In so doing, it raises the hope that companies (and all reporting entities) will do so; in an effort to seek reinforce their social legitimacy. Where, as supported by the empirical results of this research, certain corporate features are significantly consistent with the Legitimacy Theory. Thus, if awareness and sensitivity has been raised, regarding these corporate features, then, this thesis would have provided a contribution thereto.

7.2. Research Summary and Conclusions

There is much evidence to confirm that, social injustice and environmental damage are significant problems that are regrettably increasing by time and so threatening the continuity of our planet. Rightly, this has been provided over a growing awareness of the sustainability concept globally. This is true, at both organizational level and the individual personal level, in which an insistent need for the application of such concept is prevailing. Organizationally, integrating and applying sustainability concepts has turned from being an improving value-added, into a requirement for the continuity of the corporate life. Indeed, sustainability is now considered as the corporate tool employed to gain and maintain social legitimacy from the corporate stakeholders. These stakeholders appear to increasingly consider sustainability as an important criterion when making their relevant corporate decisions. In turn, companies have responded to the needs of their stakeholders, by verifying their sustainable performance through disclosing Sustainability Reports.

As stated within the thesis, communicating corporate sustainability performance to stakeholders is largely achieved through **Sustainability Reporting (SR)**. Sustainability Reporting is a *measure* for evaluating the sustainable performance. Ideally, such reports would aim at providing an objective scale for corporate sustainability performance. It highlights

sustainability-related strengths and weaknesses and equally projected opportunities and risks. Thus, such reports provide the information required by stakeholders when they wish to make a holistic evaluation for corporate performance. Worryingly, despite this critical importance of sustainability reporting, there is a consensus among academics and practitioners as to the poor quality of sustainability reporting. On that basis, there is an agreement that “*sustainability reporting is currently unsustainable*”. Then, much effort is called for in order to leverage and thus improve, quality level of sustainability reporting to at least a moderate level.

Taking regard to the above, this research is an attempt to consider this problem and seek possible relevant solutions. Such consideration was done through evaluating some features for their possible effect on improving that quality level within a global setting. In order to achieve this objective, the research firstly develops a theoretical foundation for Sustainability Reporting and the features that may affect its quality. Based on the relevant literature reviewed, the Legitimacy Theory would be the most appropriate and convenient theoretical foundation for Sustainability Reporting. Whereas, Legitimacy Theory provides a reasonable scientific justification for the sustainability reporting practices implemented by firms. The theory contends that, firms gain and maintain their social legitimacy from their stakeholders and in doing so, the firms’ continuity in the market is likely preserved. That determining leads to developing a Theoretical Foundation in terms Quality of Sustainability Reporting (QSR) was established.

The research tests the effect of four features on the quality of sustainability reporting. The first feature is the Adherence of Regulation (ATR), with the Global Reporting Initiatives (GRI) used as the reference for regulations of corporate sustainability reporting. The GRI is the most accepted and applied regulations in this field worldwide. The second feature is the Assurance of the Report (ASR), where the provision of an independent, third party to assure the report is the measure of the assurance of the sustainability report. The third feature is the Independence of the corporate Board of directors. This feature is tested using two measures. The first measure is the Independence of Board members (IOB) within the corporate board of directors and the second measure is the Independence of the corporate Chairman (IOC). The fourth feature is the Type of Information (TOI) contained within the sustainability report. This feature is tested by the

percentage of the Quantitative information within the sustainability report, mainly in terms of its social and environmental dimensions. In this context, the higher the percentage of that quantitative information, the higher the quality of the sustainability report.

The research tests the previously mentioned features for their effect on the quality of sustainability reporting on the Global Fortune 100 companies (G100). The features are tested for each company longitudinally for the 5 years of 2011-2015. Thus, the research population is 500 Sustainability Reports. Mainly, Quantitative methodological techniques were applied to address/answer the quantitative research questions. Predominantly, the research quantitative data are extracted from secondary sources, via the Bloomberg database, the GRI database, the Corporate Register database, Fortune database and, as required, the G100 companies' websites. Using an ordered, categorical dependent variable, research conducts logistic regression for analysis. Thus, an *Ordinal, Logistic Regression Analysis* is determined to statistically analyze the data collected, using the SPSS statistical software package.

Although the results of the statistical analysis process lead to the main conclusions of the research, the data collection process gives rise to some preliminary conclusions. These preliminary conclusions contribute, to some extent, in providing initial clarification and illustration regarding the proposed research relationships. The most important of these conclusions are as follows. The quality level of corporate sustainability reporting appears to be increasing overtime. This is suggested because the quality of Sustainability Reports for most of the G100 companies are of higher standing in the more recent years of the research period, when compared with reports of earlier years. This is done in all cases standing being evaluated per GRI quality measurement. Despite being titled under different names, Sustainability Reports of G100 companies have continued to be enhancing in terms of their content and format over the research period.

The research determines that, a significant percent (61%) of the G100 companies adopt and adhere to GRI guidelines. This statistic reinforces the view reviewed in the literature that, generally companies consider the GRI to be the most robust global reference when considering

and/or preparing high quality Sustainability Report. However; despite of this critical inference, an important point has to be clarified in this regard. Nevertheless, despite this encouraging adherence statistic, the companies showed distant levels of adherence that ranges from an outstanding level to a poor level. Based on that unlike observation, there are significant adherence instances being made with very weak quality outcomes. Where, several reporters adhering to only some of the core GRI guidelines and fulfilling some GRI performance indicators. Still, other companies do adhere to the GRI, in a way that provides a comprehensive reflection of most of the GRI performance indicators within their reports. Thus, despite the recognition and inclusion of the GRI in their reports, not all the research companies appear to achieve a full adherence to the GRI. Therefore, such analysis enabled the initial conclusion that, the Adherence to the GRI Regulations mostly results in high Quality Sustainability Report.

The researched reports and data reveal that, a relatively, small percent (36.8 %) of the G100 companies provide an external (third independent party) assurance of their Sustainability Reports. Generally, companies reflect high quality levels in their Sustainability Reporting. These companies showed a relevant good practice, which is, attaching a copy of their external assurance report, together with a copy of their standard external audit report. On the other hand, it is found that most of the companies that do not externally assure their reports fall in the low quality levels of Sustainability Reporting. Therefore, such analysis enabled the initial conclusion that, the external Assurance of the Sustainability Report mostly results in high Quality Sustainability Report.

Moreover, the vast majority of the G100 companies (81.4%) are found to be not separating the positions of corporate Chairman and Chief Executive Officer (CEO). Not surprisingly, a large proportion of such companies register weak quality levels of Sustainability Reporting. This points significantly to the possibility that, a preliminary inference can be deducted that, the duality of Chair and CEO positions is an inhibitor and likely a negative indicator of high quality in terms of corporate Sustainability Reporting.

During the data collection process, it was interestingly observed that, almost all of the G100 sustainability reports registering in the highest quality levels of Sustainability Reporting included significant quantitative measures in their reports in terms of both social and environmental dimensions of sustainability. This would be consistent with the literature, which suggest that, the inclusion of quantitative measures for the social and environmental dimensions of sustainability in the Sustainability Report is a critical feature of and an indicator to a high Quality Sustainability Report. The accompanying contention is that, Quantitative information increases understandability and verifiability of the information included in the corporate Sustainability Report. The preceding suggests that, the provision of quantitative information is a positive indicator of the quality in the Sustainability Report.

The preceding preliminary inferences were supported by more statistically scientific tests to derive conclusions from the inferential results of the statistical analysis process. The inferential results were presented in two stages. The first stage was the results of the whole research models and the second stage was the inferential results about each research variable. In turn, this enabled an evaluation of each of the proposed research hypotheses and so that enabled an acceptance or rejection of each hypothesis, as appropriately indicated by the statistical analysis.

For the research model as a whole, the inferential results show that, the research model that include the control variables is an extremely good with measuring and providing more explanation for the variability occurring in the Quality of Sustainability Reporting (QSR) that is the research dependent variable, than the model that does not include the control variables. To recall, the independent variables tested are Adherence to Regulations (ATR), Assurance of Report (ASR), Independence of Board (IOB), Independence of Chair (IOC) and Type of Information (TOI). The control variables are Total Assets (TOA) and Return on Assets (ROA). All these variables were verified to be statistically well fitted within the selected model. The results revealed that, independent variables (ATR, ASR, IOB, IOC and TOI) explain **37.1% - 41%** of the variability occurring in the Quality of Sustainability Reporting. Based on this result, the robustness of the whole research model is statistically demonstrated.

The inferential results conclude that, there is an *Extremely Significant* relationship between Adherence to Regulations and Quality of Sustainability Reporting. This significant relationship is a *Positive* one. The results show that as Adherence to Regulations increases by one unit, it is more likely to be in a higher level of the quality of sustainability reporting by 3.589454 units. Based on these results, it is confirmed that the first hypothesis is Accepted, i.e. ***Adherence to Regulations (ATR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).***

The inferential results also confirm an *Extremely Significant* relationship between External Assurance of Report and Quality of Sustainability Reporting. This significant relationship is found to be *Positive*. The statistical results indicate that as the external assurance of report increases by one unit, it is more likely to be in a higher level of the quality of sustainability reporting by 8.482456 units. Based on these results, it is confirmed that the second hypothesis is Accepted, i.e. ***Assurance of the Sustainability Report (ASR) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).***

The third research hypothesis effectively contained two sub-hypotheses. It sought to measure the effect of the independence of the corporate board variable on the quality of sustainability reporting using two measures, i.e. the independence of board members and the independence of chair. The inferential results conclude that, there is a *Non-significant* relationship between Independence of Board and the Quality of Sustainability Reporting. With no significant relationship between the variables, there is no value of assessing the direction and/or the magnitude of such an ineffective relationship. Based on these results, it is confirmed that the first sub-hypothesis of the third hypothesis is Rejected, i.e. ***Independence of Board (IOB) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).***

In terms of the second sub-hypothesis of the third hypothesis, the inferential results conclude that, there is a *Significant* relationship between the Independence of Chair and the Quality of Sustainability Reporting. The relationship is a *Positive* one, indicating that as the

Independence of the Chair increases by one unit, it is more likely to be in a higher level of the quality of sustainability reporting by 1.579329 units. Based on these results, it is confirmed that the second sub-hypothesis of the third hypothesis is Accepted, i.e. ***Independence of Chair (IOC) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).***

In terms of the last research hypothesis, the inferential results conclude that there is a *Significant* relationship between the Type of Information (Quantitative Information) and the Quality of Sustainability Reporting. The relationship is a *Positive* one, indicating that as the quantitative information increases by one unit, it is more likely to be in a higher level of the quality of sustainability reporting by 1.016129 units. Based on these results, it is confirmed that the fourth hypothesis is Accepted, i.e. ***Type of information (TOI) is significantly positively affected/associated with the Quality of the Sustainability Reporting (QSR).***

In addition to conclusions regarding the main research independent variables, the statistical analysis process provided conclusions regarding the research control variables as well. Where, the research employed two control variables, i.e. Total Assets (TOA) and Return on Assets (ROA). The inferential results conclude a *Significant* relationship between the Total Assets and the Quality of Sustainability Reporting. However, this significant relationship is found to be a *Negative* one. Curiously, the statistical results reveal that as corporate total assets increases by one unit, it is less likely to be in a higher level of the quality of sustainability reporting by 1 unit. This conclusion contradicts several associated literatures. Furthermore, the inferential results conclude a *Non-significant* relationship between Return on Assets and Quality of Sustainability Reporting. Consequently, there is no value to assess the direction and/or the magnitude of that ineffective relationship.

After deciding on the factors affecting the quality of sustainability reporting, the research conducted a comparative analysis among the G100 companies of the tested research variables. This analysis was an attempt to unearth additional insights on the Quality of Sustainability Reporting and the features that may affect that quality. The results extracted from the

comparative analysis accorded well with the statistical inferential results of the statistical analysis process and the relevant literature reviewed. In this context, it is found unsurprisingly that, the countries that perform well in terms of the adherence to regulations, the external assurance of the sustainability report, the independence of the chair and the employment of the quantitative measures for sustainability dimensions' assessment, are located in the highest levels of quality of sustainability reporting.

Overall, having regard to the theoretical foundation of the research (Legitimacy Theory and relevant literature reviewed) and the statistical results of the empirical study, the research concludes that, the four factors have a significant, positive effect on the Quality of corporate Sustainability Reporting. In general, as these four factors increase, the Quality of Sustainability Reporting increases. On the other hand, the research also concludes that the percentage of the independent members within the corporate board of directors does not have a significant effect on the quality of sustainability reporting.

7.3. Research Original Contribution

7.3.1. Knowledge Value-Added

This research adds value through the knowledge it generates. In doing so, it enriches the literature of the sustainability field by the insights developed and the conclusions reached. This knowledge value-added is reflected on two sustainability-related dimensions, i.e. the *Theoretical Framework* and the *Literature Paradox* of the Sustainability Reporting (SR), as follows.

Regarding the *Theoretical Framework* of sustainability reporting, the research provides a substantial contribution to theoretical literature and framework for sustainability reporting. A scientific upgrading is developed throughout the research for the understanding of the corporate behavior in relation to the corporate practices in terms of Sustainability Reporting. Where, the research evaluated such corporate behavior through the lens and theoretical base of Legitimacy Theory. Legitimacy theory provides a justification for corporate adherence to the GRI

regulations while preparing the Sustainability Report. Such adherence envisages the inclusion of quantitative measures within the report. Furthermore, such adherence behavior is rationalized by companies, as an attempt to gain and maintain social legitimacy from their stakeholders. For an organization that seeks to fulfill the needs of its stakeholders from whom it derives its legitimacy and continuity, must take very regard for its constituent the surrounding society and environment.

Legitimacy Theory provides also a justification for the importance of the external assurance of the corporate Sustainability Report. Some within corporate management may resist the provision of external assurance for the Sustainability Report, but should agree to do so in order to avoid negative opinion about the company itself. Where, negative opinion affects the corporate image in the market and endangers its claim to corporate social legitimacy within its surrounding society. Equally, Legitimacy Theory explains the need for external assurance to stakeholders and then would encourage its use to improve the Quality of Sustainability Reporting. Consequently, an organization can maintain its legitimacy from stakeholders who depend on the external assurance report when taking relevant corporate decisions. Equally, Legitimacy Theory provides a theoretical justification for the need to have an independent corporate chair. For, having an independent chair increases the integrity of corporate management, and so maintaining its social legitimacy.

Having regard to the preceding considerations, the research has contributed to the sustainability literature by providing a theoretical foundation for corporate behavior in relation to the Sustainability Reporting. This is a dimension of the knowledge value-added is to the relevant domain. Concurrently, the dimension of sustainability-related, knowledge is also enriched. Legitimacy theory is “hardened” through the empirical analyses and the understanding of the significant role played by the four research predictor variables (features) in improving the Quality of Sustainability Reporting.

A paradox that motivated this research states that, despite the consensus on the significant importance of the Sustainability Reporting in measuring and achieving the objectives of the

sustainable development, there is an equal consensus on the poor Quality of the Sustainability Reporting. Consequently, the four research should be taken into consideration by companies when attempting to improve the Quality of their Sustainability Reports. Additionally, this appeared to be true in various settings, countries and economic conditions. In providing these insights, the research enables an original contribution towards identifying features that can help to significantly improve the Quality of Sustainability Reporting globally.

7.3.2. Policy and Practice Implications

In order to benefit from the theoretical, knowledge value-added, this knowledge has to be applied in a practical setting in order to have its impact on society. Accordingly, some policy and practical implications are appropriately so getting reward of that knowledge, as well as maintaining its benefit. Thus, some research implications related to each of the evaluated features follow.

Given the significant effect of adherence to the GRI regulations, and the inclusion of the quantitative sustainability measures within the Sustainability Report, it is suggested that adherence to GRI regulations be a statutory requirement by law on the companies or an obligation by corporate governance code. At the very least, this should statutory requirement for companies listed on an official stock exchange. This would be similar to the case of the traditional, financial reporting, where companies are obliged by law to follow either the Generally Accepted Accounting Principles (GAAP) or the International Accounting Standards (IAS). Such requirements could be enacted by governments, professional bodies or an international, professional body that concerns itself with Sustainability Reporting like the GRI organization. In addition, an international, professional body of sustainability reporting, like the GRI could enact a requirement to conduct external assurance of corporate sustainability reports. Again, this would at least be for those companies listed on an official stock exchange. Again, this would be similar to the role of the external audit that is virtually always obligatory for the listed companies in relation to the traditional, financial reporting.

The last research implication relates to internal corporate governance. As the empirical evidence suggests that, the independence of the corporate chair has a significant effect on the quality of sustainability reporting and this is an internal issue within the company. Accordingly, the company management should include within its governance and internal control policies, the requirement to separate the two roles of chair and CEO. This would foster the independency of the corporate chair (avoid duality conflicts) and very likely lead to maintaining the integrity and legitimacy of the management towards its stakeholders. In turn, stakeholders will possibly be more trusting of the corporate reported information.

7.4. Research Limitations and Suggestions for Future Research

As is always the case, any research of social sciences will have some limitations. These limitations may help identify gaps in the field of Sustainability Reporting that have not been addressed by this research. Such gaps provide suggestions for future research. Indeed, these suggestions open up new vistas for further enrichment of sustainability knowledge. In this research, there are four main limitations, in which there is one limitation related to the time period of the research data and there are three limitations related to the empirical results of the research, as follows.

Regarding the limitation of the time-period of the research data, the research applies its empirical study based on data collected for the period of 2011-2015 for G100 companies. Four years have elapsed since 2015 and based on the relevant literature reviewed and the empirical results of this research; there is a high probability that the corporate Sustainability Reporting field has witnessed many changes during these four years. In particular, it is highly expected that, the Quality of the Sustainability Reporting has likely improved, particularly among American and European companies that have previous indicators for that improvement. Based on that, it is recommended for future research, to test and/or evaluate the quality of the sustainability reports for the G100 companies for the period of 2016 till present.

Regarding the three limitations related to the empirical part of the research, these limitations are more specifically derived from the inferential results of the statistical analysis process, as follows. The first (empirical) limitation is derived from the Pseudo R-Square value, which measures the strength of association between the quality of sustainability reporting and the four independent research features of the adherence to regulations, the external assurance of report, the independence of board and the type of information, as testing this association is the main theme of the research.

The Pseudo R-Square value resulted from the empirical study is 37.1% to 41%. This means that, the adherence to regulations, the assurance of report, the independence of board and the type of information can explain from 37.1% to 41% of the variability/change occurring in the quality level of sustainability reporting. Although this is considered as a significant percent, however there is still a more significant percent, which is 59% to 62.9%, of the variability/change in the quality of sustainability reporting that needs to be scientifically explained. Based on that, it is recommended for future research to fill in this gap through testing other features that are affecting around 60% of unexplained change in the Quality level of Sustainability Reporting.

The second (empirical) research limitation is related to one of the main independent variables applied that is the Independence of Board members. Where, the inferential results demonstrated a *non-significant* relationship between the percentage of the independent members within the board of directors and the quality level of Sustainability Reporting. Based on the relevant literature reviewed, it is found that the relationship between the board of directors and the sustainability reporting represents a forum for debate among scholars. In this context, a considerable number of research claim a significant relationship between the independence of board of directors and corporate sustainability reporting practices. Nevertheless, much research claims a non-significant relationship between the independence of the board members and the quality of corporate Sustainability Reporting. Thus, given this unresolved debate, it is recommended for future research to re-test the relationship between independence of the board

members and the Quality of Sustainability Reporting. This can be done through applying the empirical test in a different context and/or using different statistical technique.

The third (empirical) research limitation relates to one of the control variables used- Total Assets. It was used to measure Company Size. Despite not being considered as core to the research variables and/or measures of the research, the inferential results related to company size (measured by total assets) reach results that contradict much relevant literature. Whereas, inferential results indicate a significant *Negative* relationship between total assets and Quality of Sustainability Reporting. This means that as company size increases, the Quality of Sustainability Reporting decreases. Intuitively, this would sound incorrect and so that further research to this feature certainly warrants attention.

Indeed, this result contradict almost all studies reviewed in the relevant literature that used total assets, as a measurement of company size. In particular, it is used as a control variable in contexts or similar to the corporate Sustainability Reporting. More often, these studies concluded a Positive relationship between company size (total assets) and Quality of Sustainability Reporting. Based on that, it is recommended for future research to re-test the relationship between the company size and the Quality of Sustainability Reporting. This possibly may be done through using variables and/or statistical technique apart from those used in this research.

The opening paragraphs of this thesis considered a cry from persons/bodies very much concerned with Sustainability, Sustainable Development and Sustainability Reporting. This thesis was significantly predicated on the possibility that; sustainability concern should result in Quality Sustainability Reports. Therefore, in an attempt to reveal corporate governance features that appear to be more influencing or affecting the Quality of Sustainability Reports, within the context of the Global Fortune 100 (G100), this research undertook particular empirical exercises and examinations. The results have been stated in earlier pages. For now, the thesis ends with the hope that the importance of Sustainability and its Reporting will be recognized for the extremely important matters as they are. Equally, one hopes that corporate governance practitioners and

theorists will pay increased attention to these issues, so that the future of our planet is more assured and people will be able to read this thesis in several decades to come.

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Appendices

Appendix I: GRI Reports List Request Form



GRI REPORTS LIST

Request Form

The complete version of the GRI Reports List gives an aggregate overview of all centrally collected data points presented in GRI's Sustainability Disclosure Database for reports published from 1999 till present. The Complete version of the GRI Reports List is free of charge for students for non-commercial use. By returning a filled-in copy of this request form to GRI, you agree not to share any raw data from the list with third-parties. It is possible to use the data for your own research and the publication thereof, provided that the complete data set shall not be disclosed. You are also invited to share your final research with GRI.

Name	Noha Abd El-Rahman
Email address	Abdelrn3@lsbu.ac.uk
Educational institution	London South Bank University (LSBU)
Research title	Factors Affecting the Quality of Sustainability Reporting: A Theoretically-Informed Empirical Study and Evaluation.

- I confirm that no data from the received GRI Reports List will be used for commercial purposes
 - I confirm that no data from the received GRI Reports List will be shared with third-parties
 - I confirm to communicate the conclusions of the research to GRI, upon the research completion
- In order to receive a copy of the complete version of the GRI Reports List free of charge, please return a filled-in copy of this request form to GRI, together with a scanned copy of your valid student ID/registration. Please send these to eshop@globalreporting.org

If you have any questions, please contact ReportRegistration@globalreporting.org

Appendix II: Global Fortune 100 (G100) Companies (2015)

No	Company	Country	Type of Activity
1	Walmart	United States	General Merchandisers
2	Sinopec Group	China	Petroleum Refining
3	Royal Dutch Shell	Netherlands	Petroleum Refining
4	China National Petroleum	China	Petroleum Refining
5	Exxon Mobil	United States	Petroleum Refining
6	BP	Britain	Petroleum Refining
7	State Grid	China	Electric Utility
8	Volkswagen	Germany	Motor Vehicles and Parts
9	Toyota	Japan	Motor Vehicles and Parts
10	Glencore	Switzerland	Mining, Crude-Oil Production
11	Total	France	Petroleum Refining
12	Chevron	United States	Petroleum Refining
13	Samsung Electronics	South Korea	Electronics, Electrical Equip.
14	Berkshire Hathaway	United States	Insurance: Property and Casualty
15	Apple	United States	Computers, Office Equipment
16	McKesson	United States	Wholesalers: Health Care
17	Daimler	Germany	Motor Vehicles and Parts
18	Industrial & Commer. Bank of China	China	Banks: Commercial and Savings
19	EXOR Group	Italy	Motor Vehicles and Parts
20	AXA	France	Insurance: Life, Health
21	General Motors	United States	Motor Vehicles and Parts
22	E.ON	Germany	Energy
23	Phillips 66	United States	Petroleum Refining
24	General Electric	United States	Diversified Financials
25	ENI	Italy	Petroleum Refining
26	Gazprom	Russia	Energy

No	Company	Country	Type of Activity
27	Ford Motor	United States	Motor Vehicles and Parts
28	Petrobras	Brazil	Petroleum Refining
29	China Construction Bank	China	Banks: Commercial and Savings
30	CVS Health	United States	Food and Drug Stores
31	Hon Hai Precision Industry	Taiwan	Electronics, Electrical Equip.
32	Allianz	Germany	Insurance: Property and Casualty
33	AT&T	United States	Telecommunications
34	Valero Energy	United States	Petroleum Refining
35	UnitedHealth Group	United States	Health Care: Insurance and Managed Care
36	Agricultural Bank of China	China	Banks: Commercial and Savings
37	China State Construction Engineering	China	Engineering, Construction
38	Japan Post Holdings	Japan	Insurance: Life, Health
39	PDVSA	Venezuela	Petroleum Refining
40	Trafigura Beheer	Netherlands	Trading
41	Verizon	United States	Telecommunications
42	BNP Paribas	France	Banks: Commercial and Savings
43	Lukoil	Russia	Petroleum Refining
44	Honda Motor	Japan	Motor Vehicles and Parts
45	Bank of China	China	Banks: Commercial and Savings
46	AmerisourceBergen	United States	Wholesalers: Health Care
47	Pemex	Mexico	Mining, Crude-Oil Production
48	Assicurazioni Generali	Italy	Insurance: Life, Health
49	Societe Generale	France	Banks: Commercial and Savings
50	Fannie Mae	United States	Diversified Financials
51	Rosneft Oil	Russia	Petroleum Refining
52	Costco	United States	Specialty Retailers: Other

No	Company	Country	Type of Activity
53	HP	United States	Computers, Office Equipment
54	Kroger	United States	Food and Drug Stores
55	China Mobile Communications	China	Telecommunications
56	BMW	Germany	Motor Vehicles and Parts
57	SK Holdings	South Korea	Petroleum Refining
58	Credit Agricole	France	Banks: Commercial and Savings
59	Nissan Motor	Japan	Motor Vehicles and Parts
60	SAIC Motor	China	Motor Vehicles and Parts
61	JP Morgan Chase	United States	Commercial Banks
62	Tesco	Britain	Food and Drug Stores
63	Siemens	Germany	Electronics, Electrical Equip.
64	Carrefour	France	Food and Drug Stores
65	Nippon Tel. & Tel.	Japan	Telecommunications
66	Express Scripts Holding	United States	Health Care: Pharmacy and Other Services
67	Banco Santander	Spain	Banks: Commercial and Savings
68	Petronas	Malaysia	Petroleum Refining
69	Enel	Italy	Utilities
70	Nestlé	Switzerland	Food Consumer Products
71	China Railway Engineering	China	Engineering, Construction
72	China National Offshore Oil	China	Mining, Crude-Oil Production
73	GDF Suez	France	Energy
74	Prudential plc	Britain	Insurance: Life, Health
75	Statoil	Norway	Petroleum Refining
76	BASF	Germany	Chemicals
77	Noble Group	China	Trading
78	Électricité de France	France	Utilities

No	Company	Country	Type of Activity
79	China Railway Construction	China	Engineering, Construction
80	Bank of America Corp.	United States	Commercial Banks
81	HSBC Holdings	Britain	Banks: Commercial and Savings
82	IBM	United States	Information Technology Services
83	Marathon Petroleum	United States	Petroleum Refining
84	Cardinal Health	United States	Wholesalers: Health Care
85	Boeing	United States	Aerospace and Defense
86	Citigroup	United States	Commercial Banks
87	China Development Bank	China	Banks: Commercial and Savings
88	Amazon	United States	Internet Services and Retailing
89	Hitachi	Japan	Electronics, Electrical Equip.
90	Wells Fargo	United States	Commercial Banks
91	ING Group	Netherlands	Banks: Commercial and Savings
92	JX Holdings	Japan	Petroleum Refining
93	PTT	Thailand	Petroleum Refining
94	China Life Insurance	China	Insurance: Life, Health (stock)
95	Microsoft	United States	Computer Software
96	Ping An Insurance	China	Insurance, banking, and financial services
97	Metro	Germany	Food and Drug Stores
98	Legal & General Group	Britain	Insurance: Life, Health (stock)
99	Hyundai Motor	South Korea	Motor Vehicles and Parts
100	Procter & Gamble	United States	Household and Personal Products

Appendix III: Confirming Discussions' Form

Features Affecting the Quality of Sustainability Reporting (SR): A Theoretically-Informed Empirical Evidence of the Global Fortune 100 (2011-15)

Confirming Discussions within the Practical Setting

Given the evident environmental damage and social inequity prevailing in our world, the adoption and application of the pivotal concept of *Sustainability* becomes no longer a matter of luxury, but an insistent need. Fingers have been pointed towards the business sector to be holding the major responsibility towards these sustainability issues. In the same vein, the insistent need for the sustainability concept is associated with a parallel need for reporting on corporate sustainability performance. *Sustainability Reporting (SR)* is considered as the only measurement and communication tool for assessing the comprehensive sustainable performance for any firm, including its three dimensions of economic, environmental and social performances. However; despite the theoretically agreed, significant importance of SR, there is also an almost agreement on the “*poor quality of SR*”, which is reflected negatively on corporate stakeholders who depend on SR to take appropriate decisions towards a certain firm.

Accordingly, this research aims at testing possible factors/reasons behind that globally claimed poor quality of SR. Based on an empirical study implemented for the Global Fortune 100 companies for the period of 2011-2015; four main conclusions have been reached in this regard, as follows. First, the adherence to relevant SR regulations, mainly the GRI (the international proxy for SR guidelines) results in a highly qualified SR and is viewed as being more legitimate by corporate stakeholders. Second, the external assurance of SR by a third party, guarantees the legitimacy and quality of the information disclosed within the SR for the stakeholders. Third, the independence of the corporate Chairman positively affects the quality SR and reflects more robust corporate governance practices. Fourth, the inclusion of quantitative information for assessing the three sustainability dimensions within the SR, reflects a committed corporate sustainable performance, as well as is easily verifiable and comparable, and consequently viewed as more legitimate and qualified by the stakeholders.

In the light of these scientific insights, kindly provide your professional thoughts regarding:

***The current quality level of SR in the Egyptian business sector.**

***Factors that should be considered to maintain a qualified SR in the Egyptian setting.**

Thank you for your time and cooperation
Noha Abd El-Rahman