

# **SOCIAL AND ENVIRONMENTAL REPORTING WITHIN AUSTRALIAN UNIVERSITIES: AN ACCOUNTABILITY PERSPECTIVE**

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## **Abstract**

**Purpose:** The current study examines the nature of relationships between the level of social and environmental reporting and the size and world academic ranking of 38 Australian universities.

**Design/methodology/approach:** This is a content analysis study that applies the Global Reporting Initiative (GRI) disclosure index to annual reports adopting the accountability model of Coy et al. (2001)

**Findings:** The relationship between the level of social and environmental reporting and size does not exist, while the relationship between the level of social and environmental reporting and world academic ranking is relatively significant.

**Research limitations/implications:** The current study focuses on social and environmental reporting as one aspect of accountability within universities, and does not conduct interviews with sustainability managers to understand their perceptions of accountability and the challenges facing their universities to provide social and environmental reporting. Furthermore, the current study is narrowly focused as it merely examines universities in Australia without considering other developed and developing countries, and relies on 2013 annual reports as the ultimate source of information, while disregarding other social and environmental reporting media such as brochures and advertisements.

Finally, the current study uses the GRI index as a content analysis technique, which only partially represents the level of social and environmental reporting within universities as it focuses on text and does not consider pictures and graphs.

The current study has a number of implications. First, SEA researchers need to offer an overall picture of social and environmental reporting within different sectors. Second, regulators have to present a general framework to be followed by universities when reporting social and environmental aspects. Third, universities need to include social and environmental reporting as another important accountability dimension.

**Originality/Value:** The current study is one of the first studies examining social and environmental reporting within the Australian university sector as a whole.

**Key words:** Social and environmental reporting, Accountability, Australia, Universities

**Paper type:** Master of Research thesis.



## **Declaration**

I hereby certify that this thesis is original, and does not contain without acknowledgment any material previously submitted for a degree or diploma in any university; and does not, to the best of my knowledge, contain any material previously published to which due reference has not been made in the text.

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**Hany Samir Salib**  
**October 06, 2014**

# **Chapter 1: INTRODUCTION**

## **1.1 Overview**

Accountability is the notion that constitutes different competing aspects. Universities are accountable from a number of different aspects including teaching, research and social and environmental reporting. The current study considers social and environmental reporting as one of the most important aspects of accountability within universities.

The last four decades have witnessed great expansion in social and environmental reporting due to the emergence of global warming, pollution, land degradation, human rights (Parker, 2011), drought (Egan, 2014) and biodiversity (M. J. Jones & Solomon, 2013). Social and environmental reporting within different organisations has become popular (Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012) for solving the problems associated with present financial reporting (Burritt & Schaltegger, 2010) as it increases transparency and enhances reliability (Kim, Park, & Wier, 2012) .

The unceasing demand for social and environmental reporting has led to the emergence of numerous frameworks for reporting social and environmental aspects within organisations. Examples of these frameworks are the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (Guidelines), the UN Global Compact principles, the UN Principles for Responsible Investment (UNPRI), and the Extractive Industries Transparency Initiative, 2003 (KPMG 2010). The aim of the GRI, as the most globally recognised framework (Dumay, Guthrie, & Farneti, 2010) is to regulate and improve the quality of social and environmental reporting (Global Reporting Initiative, 2013).

The Commission of European Communities (the Commission) defines social and environmental reporting as a way of incorporating social and environmental aspects in operations, and in contacts with stakeholders (Commission of the European Communities,

2001, 2006, 2011). Therefore, social and environmental reporting is a voluntary disclosure based on the communication between the company and its stakeholders.

The current study adopts the Commission's definition of Corporate Social Responsibility (CSR), for the reason of academic consensus (Deegan & Shelly, 2013; Kilian & Hennigs, 2014), and for being relevant to the topic area (social and environmental reporting) of the current study.

The uniqueness of the university sector encourages researchers to obtain more insight into theory and practice (Godemann, Bebbington, Herzig, & Moon, 2014). Guthrie and Neumann (2007) found that the university sector is part of the public sector as evidenced by the majority of universities (36) being public and only three private universities.

However, the university sector is unique in nature, as it lies between the for-profit sector and the public sector (Banks, Fisher, & Nelson, 1997) and has some of both characteristics. On the one hand, universities are similar to the for-profit sector in three aspects. First, students and the community are like customers in claiming transparency about the social and environmental operations, teaching and research by universities (The Group of Eight 2013). Second, university stakeholders are not restricted to students and employees, and are not confined to the users of traditional annual reports but extend to the community. Third, the university sector is also held accountable for visiting scholars from other universities, the media, and pressure groups (Coy et al., 2001), and compete with other universities (Marginson, 2002). On the other hand, the university sector bears a resemblance to the public sector by having its decisions basically shaped by public policy (Banks et al., 1997), and being subsidised by government revenues (Marginson, 2002).

## **1.2 Purpose of the study**

The current study is located in the area of social and environmental accounting (SEA). Its purpose is to extend the SEA literature by examining the relationships of size and academic ranking with the level of social and environmental reporting within Australian universities using an accountability framework. SEA has been identified as a broad area of accounting research, concerned with social and environmental reporting within organisations (Bellringer, Ball, & Craig, 2011; Guthrie, Ball, & Farneti, 2010; Owen, 2008).

The current study chooses size and academic ranking as the potential factors of relationship with social and environmental reporting within the university sector. The choice of the size factor is supported by early SEA literature. Bowen (1953) stated that large firms shape the economy, influence and lead the practices of the for-profit sector through their vast contacts with rivals, contractors and customers. Similarly, large universities affect and lead the level of social and environmental reporting within the university sector.

The world academic ranking, determined by the Shanghai ranking, for universities is chosen for two reasons. First, academic ranking is relevant to the university sector. Second, it is a constant association between size and academic ranking within the university sector. The indicators of Shanghai ranking are size-based (Saisana, D'Hombres, & Saltelli, 2011), which supports the choice of academic ranking as an appropriate factor to be combined with size of Australian universities in the current study (Florian, 2007; Saisana et al., 2011).

### **1.3 Motivation for the study**

#### **1.3.1 Response to academic calls**

The current study is a response to academic calls in the SEA literature for research concerning practice in organisations (Bellringer et al., 2011; Jane Broadbent & Guthrie, 1995; Guthrie et al., 2010; Owen, 2008; Parker, 2005), which has been relatively limited (Guthrie et al., 2010). Deegan (2002) called for investigation into the effect of size on the level of social and environmental reporting within organisations, while Garde Sánchez et al. (2013) and Ralph and Stubbs (2014) suggested investigation within universities in particular.

In addition, the current study investigates the effect of world academic ranking of the 38 Australian universities (Universities Australia, 2014b) on the level of their social and environmental reporting, for its established relationship with size (Florian, 2007; Saisana et al., 2011), and for its weight in the university sector (De Filippo, Casani, García-Zorita, Efraín-García, & Sanz-Casado, 2012; Docampo, 2012). According to Cho et al. (2012), the association between size and academic ranking variables is insignificant, which supports the current study's position in considering both independent variables.

Universities are accountable for a number of various aspects including teaching quality, research excellence, administration and community services. The current study focuses on social and environmental reporting as one aspect of accountability in the university sector. However, as universities prioritise these aspects differently based on their own interpretation of accountability, discrepancies in the level of social and environmental reporting are expected in the current study.

In essence, the current study considers social and environmental reporting as one key mechanism to satisfy the accountability needs (Buhr, 2007) within the university sector, and evaluates whether size and academic ranking moderates accountability by affecting the level of social and environmental reporting within Australian universities.

### **1.3.2 Limitations in SEA literature**

Despite the growing body of SEA research in recent times, the practice of social and environmental reporting by universities has been noticeably overlooked in the SEA literature. Discounting universities by SEA academics endorses the insufficiency of the SEA literature for theorising and implementing social and environmental changes in all types of organisations.

Social and environmental reporting within the university sector is indisputably essential for the SEA literature and practice for several reasons. First, universities have significant social and environmental impacts and there is increasing community pressure to account for social and environmental issues (Godemann et al., 2014). Universities affect society and the environment through their teaching, research and physical operations (Ralph & Stubbs, 2014). Moreover, universities promote social and environmental reporting via their mission and vision related to teaching, corporate strategy and research (Garde Sánchez et al., 2013). Thus, examining the level of social and environmental reporting within the university sector is valuable for society and the environment.

Second, universities have a social and environmental responsibility to incorporate the environment into their education and research activities (Godemann et al., 2014). Universities boost knowledge by investigating contemporary problems (for instance, climate change, global warming, and poverty), and then assist the community to

understand and solve these problems (Godemann et al., 2014). The social and environmental responsibility of the university sector constitutes the need to examine the factors affecting social and environmental reporting within universities.

Third, universities influence society directly through their students, the future parents, politicians, and academics, during teaching, research and community engagement; universities also affect society indirectly through leading by example and being accountable for their social and environmental performance (Adams, 2013). A fundamental contribution of universities in future community growth (i.e. living standards, community well-being and productivity) is through research (Universities Australia, 2014a).

The community needs to comprehend ways of adapting to complex economic, political, geographic, historical, and technological changes. Academic research helps the community in understanding and adapting to these changes (The Group of Eight 2013). Research in universities affects the perception of the community as a whole. Accordingly, the world academic ranking as a research-oriented factor (Saisana et al., 2011) is amongst the factors affecting the level of social and environmental reporting within the university sector.

Fourth, the university sector has a large ecological footprint, with thousands of students (national and international) and staff on campus (Flint, 2001), that needs to be minimised. Energy, water, transport, and waste are examples of a university's ecological footprint; the ecological footprint is being conventionally measured by the campus size (Venetoulis, 2001). Most likely, large universities, measured by the number of students, staff and campuses, would have large ecological footprints. Given the connection between university size and ecological footprint, size is essential when selecting the factors affecting social and environmental reporting within the university sector.

Fifth, the government provides substantial funds to the university sector. Governments invest in universities to attain high levels of gross domestic product (GDP) growth (Universities Australia, 2014a). Employed university graduates over their lifetimes pay taxes that exceed government funding to the university sector (OECD, 2013). According to the Australian Mutual Provident Society and National Centre for Social and Economic Modelling (AMP/NATSEM 2012), postgraduates will earn \$3.17 million each over their

lifetime, more than both secondary school completers and non-completers (\$1.74 million each). This means that postgraduates will pay higher taxes and generate more return for governments as opposed to less-educated people. Therefore, government investment in the university sector yields higher levels of productivity and rate of return (KPMG-Econtech, 2010).

According to the OECD (2013), university graduates achieve higher labour force participation and greater employment rates (83%) compared with students not completing secondary school (55%). Moreover, employed university graduates are more productive compared to secondary school completers and non-completers (AMP/NATSEM 2012). This reflects the significant economic effects of universities by increasing labour force participation and reducing the unemployment rate.

Remarkably, the university sector provides a lower level of social and environmental reporting compared to the for-profit sector (Lozano, 2011; Ralph & Stubbs, 2014) and the public sector. Also, the number of universities providing social and environmental reporting according to globally accepted reporting guidelines such as the GRI Sustainability Reporting Guidelines is insignificant in total (Adams, 2013), compared to for-profit and public sectors. This limited reporting is problematic and suggests that there are factors affecting the level of social and environmental reporting within the university sector, which require further investigation.

In brief, the paramount focus of SEA researchers on for-profit and public sectors with undeniable exclusion of the university sector is considered a gap in the SEA literature. This identified gap motivates the current study to extend the SEA literature to encompass the university sector. Additionally, restricted social and environmental reporting within the university sector motivates the current study to investigate the factors and relationships within university social and environmental reporting, and particularly Australian universities. These motivations raise the following question: “What is the relationship between size and academic ranking with the level of social and environmental reporting within Australian universities?”

### **1.3.3 Examining the Australian university sector**

Based on a KPMG (2008) report, social and environmental reporting became a key concern in Australia due to carbon emissions, social and demographic changes and climate change. Australia has recorded the highest rate (82%) of social and environmental reporting in the world (KPMG 2013).

There are several reasons for examining social and environmental reporting within the Australian university sector specifically. One reason is the strong contribution of the Australian university sector to Australia's wealth and welfare, by having 1,106,145 domestic and international students (Australian Education International 2014), 113,630 staff, and a rate of return on publicly-funded research between 20 and 60% (Department of Industry 2012; Universities Australia, 2014c).

Furthermore, international education is Australia's greatest service export. Australia's regional universities support regional economies, and university academic research encourages innovations and provides solutions to the social and environmental challenges facing the nation (Universities Australia, 2014c). The final reason is the significant contribution of Australian university sector to the Australian community in terms of offering employment opportunities and industry alliances, and constructing fundamental infrastructure (Universities Australia, 2014c).

## **1.4 Contributions of the study**

By examining the impacts of size and academic ranking on the level of social and environmental reporting within the Australian university sector, the current study offers certain contributions. One contribution is to incorporate social and environmental reporting within universities into the SEA research agenda. This contribution is augmented by the detection of two evident limitations in prior SEA studies. The first limitation is the overriding tendency to neglect the university sector in SEA research as substantiated by Godeman et al. (2014). According to early SEA literature (Bowen, 1953), the university sector is as important as the for-profit and public sectors. Existing SEA literature has focused mainly on the social and environmental reporting practices in the for-profit (Hoi,



Wu, & Zhang, 2013; Kilian & Hennigs, 2014; Mahoney, Thorne, Cecil, & LaGore, 2013), and public sectors (Greco, Sciulli, & D'Onza, 2013; Sciulli, 2011; Williams, Wilmshurst, & Clift, 2011). The current study considers this limitation by investigating the present state and therefore level of social and environmental reporting within Australian universities.

The second limitation in the reviewed SEA literature is the prevailing emphasis on the motives for social and environmental reporting within the for-profit (Mahoney et al., 2013; Momin & Parker, 2013; Spence, Husillos, & Correa-Ruiz, 2010) and public sectors (Bellringer et al., 2011; Farneti & Guthrie, 2009; Sciulli, 2011).

A few SEA studies have researched the relationships between different factors and the level of social and environmental reporting within the for-profit (Trotman & Bradely, 1981) and public sectors (Lodhia, Jacobs, & Park, 2012). Investigating the impacts of size and academic ranking of universities extends the SEA literature on the relationship between the level of social and environmental reporting and various factors.

#### **1.4.1 Theoretical contribution (extending SEA literature)**

According to Hackston and Milne (1996), the association between the size and the level of social and environmental reporting is not entirely supported within the for-profit sector. In the public sector, the effect of size on the level of social and environmental reporting is considered insignificant (Lodhia et al., 2012). However, within the university sector this has not been expressed by SEA academics.

Furthermore, the current study includes a unique factor, namely, Shanghai world academic ranking of Australian universities. Examining world academic ranking per se is considered another contribution for two reasons.

The first reason is the importance of academic ranking for evaluating the performance of universities. The second reason is the chance of adding the level of social and environmental reporting as a seventh key indicator to the existing six indicators of the Shanghai ranking. Adjusting Shanghai ranking to include social and environmental reporting is essential for embedding social and environmental reporting into the research, operations and teaching of the university sector. Furthermore, social and environmental reporting is favourably positioned with the prevailing themes in the literature of

universities, such as pedagogy (Brew, 2013; Chabrak & Craig, 2013; Furco & Moely, 2012), funding (Ness & Tandberg, 2013; Swami, Furnham, Haubner, Stieger, & Voracek, 2010; Waitere, Wright, Tremaine, Brown, & Pausé, 2011) and internationalisation (Finkelstein, Walker, & Chen, 2013; Horn, Hendel, & Fry, 2011; Sanderson, 2011).

#### **1.4.2 Practical contribution**

Another contribution of the current study is to provide chancellors and sustainability officers within Australian universities with facts about the current state of social and environmental reporting within their respective universities. Chancellors, vice-chancellors and sustainability officers could further investigate the limitations in the social and environmental reporting delivered, offering some possible solutions. Furthermore, regulators can start setting rules and guidelines on social and environmental reporting within the university sector. This is a positive step towards making this type of reporting mandatory, and generalising this practice globally within the university sector.

Although the current study draws attention to social and environmental reporting of universities within an Australian context, the contributions are relevant to social and environmental reporting at an international level. In conclusion, the current study extends the SEA literature and practice nationally and globally.

**Table 1.1 Chapter 1 Research Objectives and Outcomes**

<b>Objectives</b>	<b>Outcomes (sections)</b>
To outline the motivation for a study on social and environmental reporting within universities.	Motivation is based on the need to study social and environmental reporting within a unique sector. The Australian university sector was chosen for its significant contribution to Australia's wealth and welfare through international education.
To outline the contributions of existing SEA literature.	The study is expected to provide an empirical national focus to descriptive SEA literature, and an insight into social and environmental reporting within Australian universities.

## **Chapter 2: LITERATURE REVIEW**

### **2.1 Introduction**

The objective of this chapter is to review the SEA literature across the for-profit and public sectors with emphasis on the university sector, and then identify gaps in the SEA literature. The literature review includes three parts. The first part analyses and evaluates earlier studies that examined social and environmental reporting in myriad types of organisations other than universities (for-profit and public sectors). The analysis and evaluation of the literature on social and environmental reporting in universities is presented in the second part. The last section comments on the reviewed literature by identifying the gaps and providing further ways of improving the social and environmental reporting within universities.

The SEA research principally has focused on the for-profit and public sectors. The following three sections highlight how SEA researchers have overlooked universities and the social and environmental research within universities. The first section discusses the existing SEA research in the for-profit sector. The second section presents SEA research within the public sector. The third section examines the literature of the university sector.

### **2.2 Social environmental accounting (SEA) within the for-profit sector**

The for-profit sector refers to corporations (Dumay et al., 2010). Several researchers (Farneti & Guthrie, 2009; Gray, 2006; Guthrie et al., 2010) have examined extensively social and environmental reporting in the for-profit sector. Adams (1998) examined the relationship between the level of social and environmental reporting and factors such as size, country of residence and industry membership, within six different countries. In 1981, Trotman and Bradely examined additional factors such as risk and the horizon of management decision (long-term) within Australian companies(). Hackston and Milne (1996) examined another factor, profitability, within New Zealand companies.

Two practices, signalling and green washing, were viewed as competing motivations for social and environmental reporting (Mahoney et al., 2013). Signalling refers to firms issuing stand-alone CSR reports to reflect high standards of social and environmental

reporting. Green washing refers to firms issuing stand-alone CSR reports, which makes them appear as good corporate citizens, although it is not true. Kim et al. (2012) have identified earnings management as a potential motivation for social and environmental reporting in United States (US) firms. Additional motivations such as transparency, pressure from stakeholders and competition have been recognised within United Kingdom (UK) corporations (Spence, 2007). Support from the parent company was recognised as motivation within seven Bangladeshi multinational corporation (MNC) subsidiaries (Momin & Parker, 2013).

In conclusion, SEA researchers in the for-profit sector were concerned mainly with investigating the relationship between the level of social and environmental reporting and various factors, and motivations for social and environmental reporting.

### **2.3 Social environmental accounting (SEA) within public sector**

There has been a considerable body of SEA research undertaken in the public sector, in response to recent calls from SEA researchers (Ball, 2005; Jane Broadbent & Guthrie, 1995; Guthrie et al., 2010). The Australian public sector has been scrutinised in terms of the relationship between different factors and the level of social and environmental reporting. Several SEA researchers have examined the relationship between the level of social and environmental reporting within Australian Commonwealth departments with regard to the size of the department, the department's obligation (the Environment Protection and Biodiversity Conservation Act 1999), and pressure of the government internal stakeholders (Lodhia et al., 2012).

SEA academics examined the motivations for social and environmental reporting within public sector organisations. Motivation for social and environmental reporting within the Australian public sector was keeping various stakeholders (the Minister and employees) informed (Farneti & Guthrie, 2009). One Australian government council was motivated by its necessity to handle population growth, plan for the use of land, and deal with changes in climate, and community engagement (Sciulli, 2011). The motivations for social and environmental reporting within the Italian public sector were the pressure of professional bodies, mimicking successful organisations and society expectations (Mussari & Monfardini, 2010). But, the motivations within selected Italian local councils were

transparency, accountability and familiarising the stakeholders with local councils' functions and activities (Greco et al., 2013). In New Zealand local government councils, the motivations for social and environmental reporting were leadership (leading the community by example), accountability (by allowing public access for social and environmental reports), monetary incentives (cost-savings), and attracting important internal stakeholders by compensating for any negative impacts (Bellringer et al., 2011). Dumay et al. (2010) considered augmenting public relations and performance as the main motives for social and environmental reporting within the public sector.

In conclusion, SEA researchers in the public sector have been concerned mainly with investigating the relationship between the level of social and environmental reporting and its various factors and motivations.

#### **2.4. University sector**

Human behaviour and cultural anticipations are shaped by the university sector through its wide range of interrelated activities such as teaching (undergraduate and post-graduate levels), research (trans-disciplinary), knowledge transfer (linking research and the community), and autonomous thought (Adams, 2013; Godemann et al., 2014). Adams (2013) denoted that universities are expected to lead social and environmental reporting, following globally recognised guidelines and frameworks such as UN Global Compact Principles, the GRI Sustainability Reporting Guidelines, and the AA1000 Standards. The sorry state of accountability for social and environmental reporting in universities, as confirmed by the limited number of universities using globally accepted guidelines and frameworks, requires further investigation (Adams, 2013). This raises the question of what the relationship is between accountability-related factors and the level of social and environmental reporting within the university sector.

The current study focuses on this research question, which was explored by SEA academics within the for-profit and public sectors, as evidenced by prior SEA literature review in both sectors, but remained under-researched within the university sector. Also, research within the university sector overlooked social and environmental reporting but focused on different themes. These themes are pedagogy (Brew, 2013; Chabrak & Craig, 2013; Chen & Bennett, 2012; Furco & Moely, 2012), internationalisation (Finkelstein et

al., 2013; Horn et al., 2011; G. A. Jones & Oleksiyenko, 2010; Sanderson, 2011) and funding (Ness & Tandberg, 2013; Swami et al., 2010; Waitere et al., 2011).

SEA studies that have examined the university sector are limited. Ralph and Stubbs (2014) highlighted the importance of universities in generating permanent social and environmental impacts, through their teaching, research, operations and community participation. The authors used semi-structured interviews and the websites of universities to explore the factors that affect the integration of environmental reporting with the teaching, operations and research activities within four Australian and four British universities. They classified the resulting factors into drivers, barriers and key success factors. The most cited drivers for Australian universities were university level programs, senior management's leadership and support, and pressure by stakeholders (internal and external). The most cited drivers for British universities were financial incentives from national funding schemes, pressure by staff and students, and university and national policy/programs. Australian and British universities shared the barriers of academic silos, working across disciplines, and constraining academic freedom. British universities had insufficient funding and a lack of senior managements' leadership and support as their exclusive barriers. According to Ralph and Stubbs (2014), there was a significant consensus between Australian and British universities in having people's contribution and existence of programs and policies as their main key success factors. Australian universities highlighted leadership and support, where British universities underscored evident achievements as their distinguishing key success factors (Ralph & Stubbs, 2014). The current study examines social and environmental reporting, which is broader than the environmental reporting in Ralph and Stubbs's (2014) study.

Garde Sánchez et al. (2013) selected a number of public (105) and private (49) US universities that provided social and environmental information on their web sites. The authors concluded that the majority of US universities released social and environmental information in the form of "technical summaries" rather than annual social and environmental reports. Furthermore, universities were providing social and environmental reports that were not updated (more than one year old) or comparable (no reference to prior years). Garde Sánchez et al. (2013) hypothesised that the private US universities were more likely to provide online social and environmental reporting compared to public US

universities, and that prestigious US universities acted as the major promoters of online social and environmental reporting. Universities avoided disclosing social and environmental reporting, to keep their interaction with stakeholders minimal (Garde Sánchez et al., 2013).

Both public and private US universities were not interested in providing online social and environmental reporting, as a way of evading transparency and accountability (Garde Sánchez et al., 2013). According to Garde Sánchez et al. (2013), universities were noticeably interested in maintaining their reputation and authority rather than being committed to society. However, prestigious universities were the most-interested universities in promoting social and environmental reporting (Garde Sánchez et al., 2013). The authors suggested that future research should identify the factors that have a relationship with online social and environmental reporting within universities. Ralph and Stubbs's (2014) also suggested that future researchers examine the effect of a university's size on its level of social and environmental reporting, which is done in the current study.

In conclusion, the university sector was significantly overlooked in the SEA literature, while social and environmental reporting was also disregarded within university sector literature.

**Table 2.1 Chapter 2 Research Objectives and Outcomes**

Objectives	Outcomes (sections)
To review SEA literature to date and outline some of the main limitations.	<p>SEA researchers overlooked the university sector, as evidenced by the absence of any common themes between the university sector and the for-profit and public sectors. The university sector literature has three themes pedagogy, funding and internationalisation.</p> <p>However, the for-profit and public sectors share all three themes namely relationship between different factors and the level of social and environmental reporting, and motivations for social and environmental reporting</p>

## **Chapter 3: RESEARCH METHOD**

### **3.1 Introduction**

This chapter describes the method applied in the next six subsections of the current study. The next subsection focuses on public accountability as the basis for social and environmental reporting within the university sector. The second subsection examines the adopted public accountability model (Coy et al., 2001), providing reasons for selecting the model and elements of the model. The third subsection focuses on the development and statements of the hypotheses. The fourth subsection specifies the measures of the variables (independent and dependent). The fifth subsection describes the population design. The sixth subsection describes the data collection.

Examining social and environmental reporting within the university sector is fundamental, as it involves meeting community expectations and enhancing transparency in financial reporting (Garde Sánchez et al., 2013). Public accountability is consummate when examining social and environmental reporting within Australian universities as autonomous organisations, due to the association between independence and public accountability (Sinclair, 1995).

### **3.2 Public Accountability**

The obligatory nature of the relationship between universities and the community makes public accountability necessary (Pallot, 1992) when examining social and environmental reporting within the university sector. Furthermore, public accountability is one of the best explanations for social and environmental reporting (Buhr, 2007) within the university sector and in turn within Australian universities.

Public accountability is also supported by legislation within the context of Australian universities. The main legislation for Australian universities is the Higher Education Support Act 2003 (Department of Education, 2014a), and they must conform to the “quality and accountability requirements” (The Office of Parliamentary Counsel, 2014, p. 22). The Minister of Education is authorised by the Australian government to cancel the operation licence of a university, in the case of breaching any of the quality and accountability requirements (The Office of Parliamentary Counsel, 2014).



Quality requirements refer to compliance with the Tertiary Education Quality and Standards Agency (TEQSA)<sup>1</sup> Act 2011 and self-regulations (The Office of Parliamentary Counsel, 2014). Also, the quality requirements assure accountability of universities to the community through the TEQSA.

Accountability requirements incorporate five main requirements “financial viability”, “fairness requirements”, “compliance requirements”, “contribution and fee requirements” and “compact and academic freedom requirements” (The Office of Parliamentary Counsel, 2014, p. 22). Financial viability requirements refer to the obligation of Australian universities to provide annual financial statements with an auditor report to the Minister for approval (The Office of Parliamentary Counsel, 2014). Fairness requirements refer to fair treatment of current and prospective students (The Office of Parliamentary Counsel, 2014). Compliance requirements refer to complying with the Higher Education Support Act 2003 (The Office of Parliamentary Counsel, 2014). Contribution and fee requirements require that the university must charge students both contribution and tuition fees for each unit of study they enrol in. Compact and academic freedom requirements obligates the university to provide a mission based compact that includes its mission, research strategies and its teaching and learning strategies (The Office of Parliamentary Counsel, 2014). The aforementioned accountability requirements ensure accountability of Australian universities to the community through the Minister of Education and are a major requirement for the operation of Australian universities. In conclusion, public accountability is essential when examining Australian universities.

Public accountability is defined as “a public right to know about the condition and performance of the organization under the accountant’s charge” (Coy et al., 2001, p. 8). Moreover, public accountability; henceforth accountability, is the relationship between the “accountor” as the provider of information and the “accountee” as the user of information (Ijiri, 1983, p. 76).

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<sup>1</sup> An independent national legal authority established as a response to the Bradley Review in 2009 of Australian Higher Education. The Bradley Review called for establishing an independent national regulatory body to be responsible for regulating all types of higher education providers. TEQSA registers and assesses the performance of higher education providers against the Higher Education Standards Framework (Tertiary Education Quality and Standards Agency, 2012).

Specific studies examine accountability in particular sectors such as higher education (Banks et al., 1997; Coy et al., 2001; Coy & Pratt, 1998; Dixon, Coy, & Tower, 1991) or the public sector (Farneti & Guthrie, 2009; Smyth, 2012).

The current study applies Coy, Fischer and Gordon's (2001) accountability model, in the context of Australian universities rather than US universities and in the context of voluntary and mandatory disclosure. Australian and US universities are similar in being a mix of public sector organisations and for-profit organisations. But, the current study proposes social and environmental reporting (as one form of voluntary disclosure) to ensure the completeness of annual reports by considering all aspects of accountability and to permit the society to identify their needs (Coy et al., 2001).

### **3.3 Accountability framework**

Coy et al. (2001) have attributed the rise of public accountability in universities to the lost confidence caused by several scandals in western societies. Their accountability model views public accountability as a "bidirectional" (Ijiri, 1983) accountant-accountee relationship. On one hand, the accountant is responsible for providing the information to the accountee and on the other hand, the accountee has the right to know about the situation of the organisation (Coy et al., 2001).

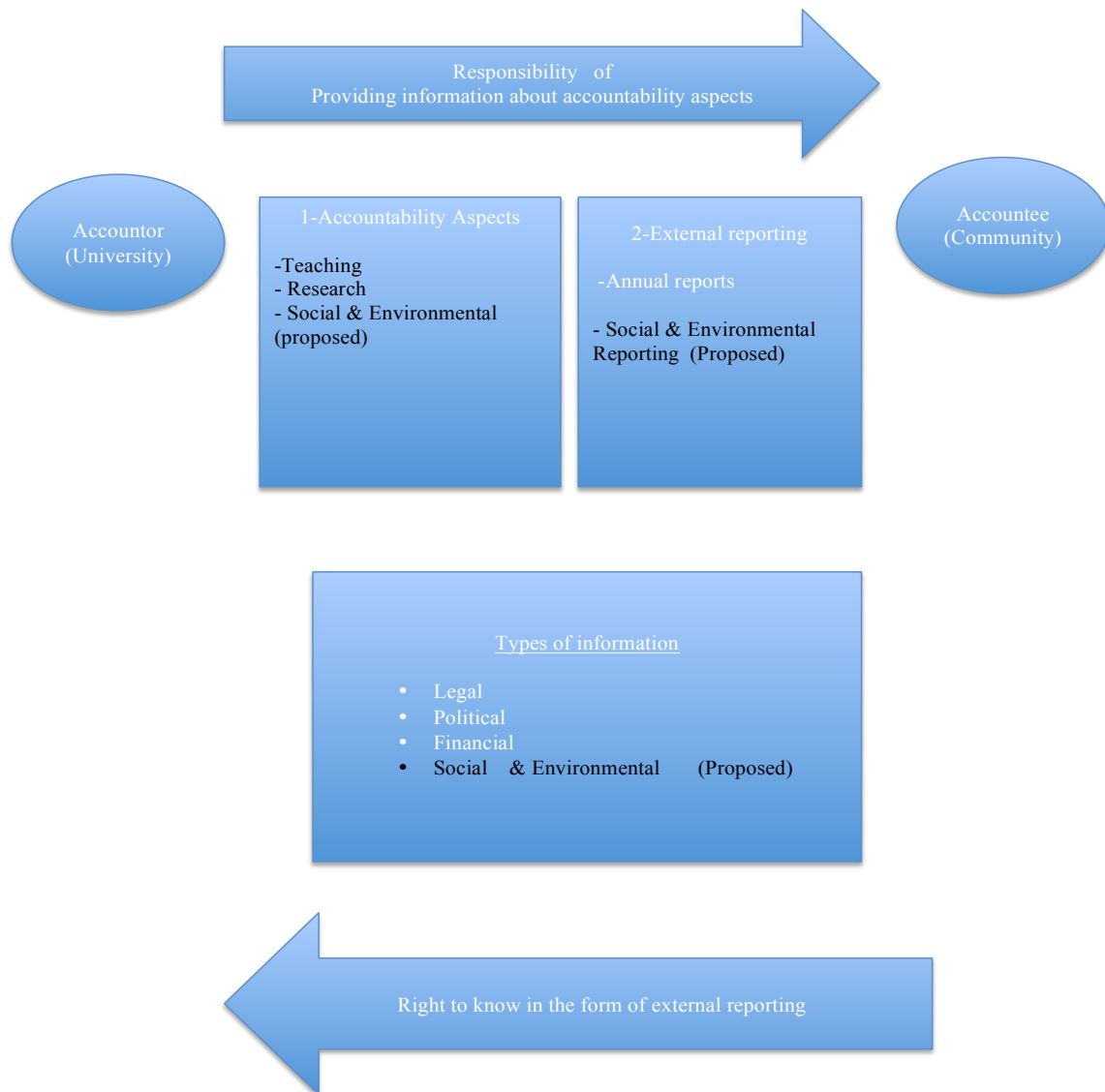
Coy et al.'s (2001) accountability model has identified the accountant as the university and the accountee as the community. The university is responsible for providing information about its teaching and service aspects to the community. The authority given to the university vice-chancellor by the government and the taxes collected by the government from the community in return of services provided by universities to the community raises the accountability of the university to the community. Therefore, universities are accountable to the community as a whole. Accordingly, Coy et al.'s (2001) accountability model views teaching and research as the main accountability aspects of universities.

Coy et al.'s (2001) public accountability model has specified the annual report as one form of external reporting and of accountability mechanisms. Furthermore, the model presents

different forms of accountability information that should be disclosed within annual reports such as teaching and research performance and resource allocation (Coy et al., 2001).

Coy et al.'s (2001) model is a professional model of accountability for involving high levels of autonomy and targeting quality (Burke & Associates, 2005). A professional model of accountability reflects the exact state of universities by considering their dominant independence and performance focus (Alexander, 2000; Carnegie & West, 2012) and overcomes the existing balance problem between accountability and independence (Coy et al., 2001).

**Figure 1. Public Accountability- based model**  
**Adapted from Coy, Fischer and Gordon (2001)**



As shown in Figure 1.1, the accountability model of Coy et al. (2001) has two interrelated elements. They are accountability aspects and external reporting, where the accountor is responsible for disclosing information (legal, political and financial) about research and

teaching activities in the form of external reporting (annual reports) to the accountee. As the current study considers social and environmental reporting amongst the aforementioned accountability aspects of universities, it proposes social and environmental information to include legal, political and financial information.

Furthermore, Coy et al. (2001) have called for more comprehensive annual reports, as they are the proper form of external reporting, because universities provide inadequate information about their teaching and research activities. The current study suggests social and environmental reporting within annual reports as a way of attaining the required comprehensiveness of all aspects of accountability within Australian universities. Also, the current study highlights the appropriateness of Coy et al. (2001) public accountability model in an Australian context rather than a US context.

The current study adopts Coy et al.'s (2001) accountability model for six reasons.

First, the major assumption of the model is having different accountability perspectives such as teaching and research (Coy et al., 2001), which is consistent with the view of the current study. Nevertheless, the current study focuses on social and environmental reporting rather than teaching and research.

Second, another assumption of the adopted model coincides with that of the current study by considering the university sector has a unique nature by having characteristics of both public sector and for-profit sector organisations (Coy et al., 2001). Australian universities are public sector organisations by complying with the Higher Education Support Act 2003 and TEQSA Act 2011, and being accountable to the community by reporting to government representatives. Australian universities are for-profit sector organisations because they have significant autonomy in their activities (M. Abbott & Doucouliagos, 2003; Huisman & Currie, 2004) although some are “private not-for-profit organisations” (Coy et al., 2001). Furthermore, the Australian university sector is formed of a mixture of public and private universities (Guthrie & Neumann, 2007), which is similar to US universities (Coy et al., 2001).

Third, the model was constructed particularly for higher education which includes universities. The accountability model of Gray et al. (1996) is another model reported in the literature, but it has been criticised for being general and not explaining the relationships between specific accountors and accountees (Lehman, 1999).

Fourth, the model is appropriate for Australia, as one of the western countries to which the model applies (Coy et al., 2001).

Fifth, Coy et al.'s (2001) model is consistent for being based on accountability rather than decision usefulness, which is more comprehensive (Ijiri, 1983). A conceptual model based on decision usefulness focuses on the user of the accounting information (Coy et al., 2001), while ignoring the provider of this information (Coy et al., 2001; Ijiri, 1983). Based on the decision usefulness model, universities are unheeded while the community is cogitated. An accountability-based model considers universities as providers of information, and the community as the user of this information (Ijiri, 1983). The types of information are legal, political and financial (Coy et al., 2001).

Sixth, Coy et al.'s (2001) accountability model clearly considers the desire of universities to present the best possible performance, which supports the choice of the current study to benchmark the level of social and environmental reporting within Australian universities using an index based on the GRI Guidelines as the best performance measurement.

### **3.4 Hypotheses Development**

The current study adopts Coy et al.'s (2001) public accountability model to examine the relationship between the level of social and environmental reporting size and between the level of social and environmental reporting and academic ranking. Universities are responsible for providing social and environmental reporting to the community to maintain public trust in the higher education system (Coy & Pratt, 1998), and for embedding social and environmental reporting within their core activities (Jane Broadbent, Laughlin, & Alwani-Starr, 2010). Measuring the level of social and environmental reporting, and determining its nature is essential for placing the university sector within the debate on accountability (Burritt & Welch, 1997).

Universities in discharging their accountability responsibilities need to provide social and environmental reporting. Discharging accountability for the university sector requires the disclosure of social and environmental information regarding the university-community relationship and regarding protection of the environment (Gray, 2001; Gray, Kouhy , & Lavers, 1995a).

Universities need to be accountable for their activities, and for the consequences of these activities (Ijiri, 1983) . Large organisations conduct more activities that considerably affect the society and the environment compared to small and medium sized organisations (Adams, Hill, & Roberts, 1998; Hackston & Milne, 1996). Large-sized universities conduct considerable research, teaching and commercial activities that require high levels of social and environmental reporting for their substantial impacts on society and environment. Therefore, large-sized universities are expected to maintain high levels of social and environmental reporting to satisfy the information needs of society.

Moreover, universities affect future practices in social and environmental reporting through their accountability (Adams, 2013) and by representing the “best practice” (Ralph & Stubbs, 2014). Teaching and research activities outline the future of society by guiding the performance and behaviour of both regulators and experts (Godemann et al., 2014). Furthermore, the complexity of environmental issues (such as drought and global warming) can be reduced through “trans-disciplinary” research (Godemann et al., 2014).

Universities also have commercial activities (Godemann et al., 2014; Laursen & Salter, 2004) through interacting with industry (Laursen & Salter, 2004). Therefore, the social and environmental reporting within for-profit and public sectors is evidently improved through the practices of large-sized universities. In summary, large-sized universities are responsible for high level accountability to the community, and are expected to provide a high level of social and environmental reporting.

The SEA literature regarded organisation size as the most salient variable affecting the level of social and environmental reporting within organisations (Belkaoui & Karpik, 1989; Cowen, Ferreri, & Parker, 1987; Du & Gray, 2013; Gray et al., 1995a; Lodhia & Jacobs, 2013; Trotman & Bradely, 1981). Hence, the current study regards university size

as an important factor to be examined when measuring the level of social and environmental reporting within the university sector.

Universities in general are expected to measure their performance in accountability aspects and communicate this measurement to the community (Elton, 1988) in annual reports (Coy et al., 2001). Large-sized universities are more accountable than medium and small-sized universities (Huisman & Currie, 2004) to report on their accountability aspects. Large-sized universities are expected to lead by example (Adams, 2013), providing guidance through their significant social and environmental reporting to the community. Maintaining high levels of social and environmental reporting reveals the control universities have over their activities (Adams, 2013). Therefore, large-sized universities are expected to provide higher levels of social and environmental reporting to ascertain their accountability. The current study formulates the predictions in the following hypothesis:

***Hypothesis 1. Large-sized universities are expected to provide higher levels of social and environmental reporting than small and medium-sized universities.***

With respect to universities ranking, the Shanghai world academic ranking of universities as a measure of research performance (Docampo, 2012) is important because it attracts media attention, and controls public perception of the domestic education system (Saisana et al., 2011). Visibility of universities is positively correlated with their level in the Shanghai ranking (De Filippo et al., 2012; Saisana et al., 2011). Top Shanghai-ranked universities are highly visible to the community for their prestige, which permits monitoring their accountability (Townley, 1996). Therefore, universities of high levels of research performance are more visible and therefore more accountable to the community, compared with their lower-ranked counterparts.

The high academic ranking for universities creates immense public responsiveness to social and environmental reporting and therefore raises accountability for these universities (Cowen et al., 1987). The level of social and environmental reporting within prestigious universities is expected to be relatively higher because of their visibility as opposed to low-ranked universities. Top-ranked universities are the principal universities in sponsoring (Garde Sánchez et al., 2013) and promoting social and environmental reporting (De Filippo



et al., 2012). Hence, top-ranked universities are expected to provide high levels of social and environmental reporting to support their visibility.

***Hypothesis 2. Top academic ranked Australian universities are expected to provide higher levels of social and environmental reporting than their non-ranked counterparts.***

### **3.5 Measurement of variables**

#### **3.5.1 Dependent variable**

The dependent variable used in the current study was the level of social and environmental reporting. The current study measured the level of social and environmental reporting in the annual reports of Australian universities. Prior SEA literature had focused entirely on annual reports (Gray, Kouhy, & Lavers, 1995b). Accordingly, the current study used annual reports (Bowman & Haire, 1976; Holder-Webb, Cohen, Nath, & Wood, 2009; Milne & Adler, 1999) as the sole source of social and environmental reporting within universities for three main reasons. One reason is its mandatory nature (Holder-Webb et al., 2009), which means that universities are required by law (Clarkson, Li, Richardson, & Vasvari, 2008) to prepare annual reports allowing for comparability (Guthrie & Parker, 1989) across universities. The second reason is that annual reports provide regular evidence about the university's ability to achieve its objectives (Banks et al., 1997). The third reason is the credibility of annual reports for being audited (Neu, Warsame, & Pedwell, 1998).

According to Guthrie et al. (2004)<sup>2</sup>, the extant SEA literature conventionally measured the level of social and environmental reporting by counting words (Beck, Campbell, & Shrives, 2010; Deegan & Gordon, 1996), sentences (Deegan, Rankin, & Tobin, 2002; Hackston & Milne, 1996; Milne & Adler, 1999)<sup>3</sup>, concepts (Jose & Lee, 2007) and pages (Hooks & Van Staden, 2011; Unerman, 2000)<sup>4</sup> as different forms of content analysis.

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<sup>2</sup> See Guthrie et al. (2004) for a good description of coding by the use of words, sentences, paragraphs and pages in SEA literature.

<sup>3</sup> See Milne and Adler (1999) for supporting the usage of sentences in measuring and coding social and environmental reporting.

<sup>4</sup> See Unerman (2000) for a good discussion of criticisms for the usage of the number of words and sentences in SEA literature.

Measuring the level of social and environmental reporting by counting words, sentences, concepts and pages is not pragmatic because of their repetitive nature (Marston & Shrives, 1991). Accordingly, the current study has extended the scope of the SEA empirical research by using a disclosure index based on the 2011 GRI guidelines. The choice of the disclosure index is supported by numerous prior studies for measuring the level of social and environmental reporting (Hooks & Van Staden, 2011) and for comparisons (Wiseman, 1982) among universities. The current study elects the 2011 GRI guidelines (G3.1) as the most suitable version for research purposes and for benchmarking the social and environmental reporting within Australian universities.

In addition, the current study measured the level of social and environmental reporting within Australian universities by using a “disclosure index” (Hooks & Van Staden, 2011) of different reporting formats (annual reports and stand-alone sustainability reports). The current study adopted the GRI-based index as one form of content analysis to scale the textual social and environmental reporting in numbers to allow for statistical analysis (Joseph & Taplin, 2011). The disclosure index is derived from the GRI guidelines.

GRI guidelines were developed to improve the quality and rigidity of social and environmental reporting (Clarkson, Overell, & Chapple, 2011). The GRI guidelines comprise 13 principles, which deliver benchmarking, indicating the reciprocal influence between the organisation and the anticipations of social and environmental reporting, and comparability within the organisation and with different organisations (Global Reporting Initiative, 2011). Accordingly, the current study used the GRI-based index consisting of the 13 broad indicators of social and environmental reporting provided in G3.1. The level of social reporting is measured by labour practices and availability of decent work, human rights, society, and product responsibility. The level of environmental reporting is measured by the organisation’s use of materials, energy, water, biodiversity, emissions, effluents and waste, products and services, compliance, transport and overall indicators.

**Table 3.1 GRI social and environmental indicators**

Serial	GRI- based index indicators	Nature of indicator
1	Labour practices and decent work	Social
2	Human rights	Social
3	Society	Social
4	Product responsibility	Social
5	Materials	Environmental
6	Energy	Environmental
7	Water	Environmental
8	Biodiversity	Environmental
9	Emissions, effluents and waste	Environmental
10	Products and services	Environmental
11	Compliance	Environmental
12	Transport	Environmental
13	Overall	Environmental

The current study measured the level of social and environmental reporting in three consecutive steps:

- First, the annual report of each university was examined to determine whether each GRI indicator was disclosed or not. Assessing the absence or presence of each GRI indicator was based on G3.1 indicator protocols set for each social and environmental reporting indicator (Global Reporting Initiative, 2011). If an indicator was not clear, accompanying comprehensive instructions were checked for complete understanding of the indicator and for minimising subjective judgment (Clarkson et al., 2011).
- Second, the level of social and environmental reporting was rated for existence and degree of precision of each GRI indicator (Wiseman, 1982). Consequently, a score of two was assigned to a GRI indicator if it was present in the annual report and was fully disclosed (by covering at least one of the sub-indicators) as representing the best quality of disclosure (Coy, Tower, & Dixon, 1993; Hooks & Van Staden, 2011; Wiseman, 1982). A score of one was assigned to an indicator if it was present in the annual report and was partially covered “ minimum coverage” (Hooks & Van Staden, 2011). A zero was assigned to a GRI indicator if it was absent in the annual report (Hooks & Van Staden, 2011; Wiseman, 1982). For

example, materials is one environmental GRI indicator with two sub-indicators. The first sub-indicator is materials used by weight or volume; and the second sub-indicator is the percentage of materials used that are recycled input materials. If both sub-indicators are fully covered in the annual report, the university is assigned a score of (2) in the materials indicator. If both sub-indicators are only partially covered in the annual report, the university is assigned a score of (1) in the materials indicator. If no mention of either of the two sub-indicators, the university is assigned (0) in the materials indicator.

In other words the score for social and environmental reporting in an annual report is zero, one or two. The author and two other independent researchers completed a rating sheet independently to minimise partiality (Wiseman, 1982). No significant discrepancies were noticed, as the scores were virtually the same.

- Finally, the total score was calculated for each university. The maximum total score is 26, which is equivalent to 13 GRI indicators (a maximum score of two each). Each indicator was given an equal weight (Dixon et al., 1991) due to the insignificance of different weights (Tooley & Guthrie, 2007) .

**Table 3.2 Steps for measuring the level of social and environmental reporting for each Australian university**

Steps	Assessment of	Criteria applied
<b>Step 1</b>	Absence/presence of each social & environmental GRI indicator	<b>G3.1 indicator protocols.</b> Two possible outcomes: <b>a) Indicator clear:</b> decide whether it is present or not in the examined annual report. <b>b) Indicator is not clear:</b> check accompanying comprehensive instructions then <b>c) decide whether it is present or not in the examined annual report.</b>
<b>Step 2</b>	The level of social & environmental reporting	<b>(0), (1) or (2) scores.</b> Two possible outcomes: <b>a) Indicator absent in annual report:</b> assign <b>(0)</b> score for this indicator <b>b) Indicator present in annual report: Two possible outcomes:</b> <b>i. assign a score of (1) if partial disclosure</b> <b>ii. assign a score of (2) if full disclosure</b> <ul style="list-style-type: none"> <li><b>Partial disclosure:</b> refers to the universities covering one part of the social and/or environmental GRI sub-indicators. <b>For example,</b> referring to materials that are recycled input materials without determining the percentage.</li> <li><b>Full disclosure:</b> refers to the universities covering all parts of the social and/or environmental GRI sub-indicators. <b>For example,</b> referring to the percentage of materials that are recycled input materials.</li> </ul>
<b>Step 3</b>	Calculating total social and environmental score for each university	<ul style="list-style-type: none"> <li>Summing up the scores for social and environmental scores in each university.</li> <li>The total score should not exceed 26, as there are 13 social &amp; environmental GRI indicators.</li> <li>Each indicator is given an equal weight.</li> <li>Each indicator has a maximum score of (2) if present and fully disclosed.</li> </ul>

### 3.5.2 Independent variables

The independent variables used in the current study were the size of universities and world academic ranking. Measurable proxies of size were extracted from the SEA, and higher education and organisational literature to reach the most appropriate proxies of size. Shanghai Jiao Tong ranking was the proxy of academic ranking as supported by the higher education literature.

### 3.5.3 Size of universities

The current study invoked four criteria in selecting an accurate proxy of size. The first criterion was the appropriateness of the proxy to the objectives of the current study (Adams et al., 1998) in a university context; and the second criterion was the availability of data (Adams et al., 1998) about the proxy across all Australian universities. The third criterion was that the proxy was supported by the literature, while the fourth criterion was the availability of a classification for Australian universities based on the examined size proxy.

The current study adopted the categorisation of size proxies specified by Kimberly (1976) for being comprehensive in embracing other recognised categorisations such as that of Gupta (1980)<sup>5</sup> and suitable proxies for size in the university sector. This categorisation has five categories: the personnel available to an organisation, the physical capacity of the organisation, volume of organisational input, volume of organisational output and discretionary resources available to the organisation. First, the personnel available to an organisation as the ultimate proxy of size (Kimberly, 1976) is measured by the number of full-time paid staff (Gray, Javad, Power, & Singlair, 2001; Gupta, 1980; Kimberly, 1976). Second, the physical capacity of the organisation is measured by the number of campuses (Malcolm Abbott & Doucouliagos, 2004). Third, the volume of organisational input is measured by the number of enrolled students (Malcolm Abbott & Doucouliagos, 2004; Flegg, Allen, Field, & Thurlow, 2004; Kimberly, 1976; Tooley & Guthrie, 2007; Worthington & Higgs, 2011), and by age of the organisation (Gray et al., 1995a; Roberts, 1992). Fourth, the volume of organisational output is measured by total revenue (Tooley & Guthrie, 2007). Fifth, discretionary resources available to the organisation is measured by total assets (Tooley & Guthrie, 2007; Trotman & Bradely, 1981).

The first two criteria apply to the aforementioned proxies. But, the complete four criteria apply only to the number of enrolled students. In other words, the number of enrolled students is strongly regarded in the literature as a proxy for the size of universities and the only proxy with a classification for Australian universities based on size (Universities

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<sup>5</sup> Gupta (1980) categorised measures of size into three main categories. The first category is “cyclical” where the number of activities cycles in an organisation such as the number of patients treated in a hospital and the number of graduates in a university measure size. The second category is “energetic” where size is measured by amount of energy consumed by the organisation. The third category is “components” which reflects organisational input such as the number of students and number of employees. According to Gupta (1980), these three categories are similar to those provided by Kimberly (1976).

Australia, 2013). In conclusion, the number of enrolled students is the most appropriate proxy of the size of Australian universities. The current study offers a size classification for Australian universities using each of the other proxies that did not meet the fourth criterion. These proxies are the number of full-time paid staff, the number of campuses, age of the university, total revenue and total assets.

### **3.5.4 Academic ranking of universities**

The current study used the Shanghai ranking as a measure of academic ranking for Australian universities. The Shanghai global ranking of universities consists of six key indicators: alumni (number of graduates of a university winning Nobel prizes and Fields medals), awards (total number of staff of a university winning Fields Medal in Mathematics, and Nobel prizes in Economics, Medicine, Chemistry, and Physics), HiCi (total number of highly cited academics in 21 subject categories), PUB (total number of researches indexed in Science Citations - Expanded (SCIE) and Social Science Citation (SSCI) in 2012), Nature and Science (the number of researches published in Nature and Science between 2008 and 2012 , with the weight of Nature and Science relocated to other indicators within universities specialising in humanities and social science), and PCP (Per Capita Performance measured as the weighted scores of the aforementioned five indicators divided by the number of full-time equivalent academic staff) (ARWU website, 2013). The scores of each indicator were weighted to reach an ultimate overall score for each university; the university with the highest score was given a total score of 100, and the scores of other universities were calculated as a percentage of the highest total score (ARWU website, 2013).

## **3.6 The population design**

The higher education industry commonly comprises of public and private providers (Coy et al., 2001). Australian higher education consists of universities, self-accrediting entities and non self-accrediting entities<sup>6</sup> (The Office of Parliamentary Counsel, 2014).

According to the Higher Education Support Act 2003, Australian universities (as the focus of the current study) comprise 38 public and 3 private universities established under

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<sup>6</sup> A self- accrediting entity is an entity that is a registered higher education provider; and is authorised by or under the act to self-accredit one or more courses of study that lead to a higher education award. A non self-accrediting entity is an entity that is registered as a higher education provider; but has no authorisation to self-accredit any course of study that leads to a higher education award.

Australian law (The Office of Parliamentary Counsel, 2014). Australian universities are self-governing bodies by law, although they are dependent on government funding (The Office of Parliamentary Counsel, 2014) and student tuition fees which makes them partly self-governing (Jane Broadbent et al., 2010). Public universities are more reliant on government funding whereas private universities (Egan, 2014; Wamsley & Zald, 1973) are more dependent on student tuition fees and private contributions (Garde Sánchez et al., 2013). Both public and private universities are accountable to the community and their social and environmental reporting is of public interest (Coy & Pratt, 1998). There are two opposing views in determining the level of social and environmental reporting within public and private universities. One view is that private universities provide more social and environmental reporting to gain a competitive edge over public universities (Garde Sánchez et al., 2013). The other opinion is that private universities are expected to provide less social and environmental reporting because they are more concerned with profits (Burritt & Welch, 1997) compared with public universities.

According to the Higher Education Support Act (2003), public and private universities in Australia approved by the Minister obtain government funding, and should meet the accountability requirements (The Office of Parliamentary Counsel, 2014). Therefore, the current study has recognised that both public and private universities are of the same nature and of equivalent importance when examining the level of social and environmental reporting within the university sector.

The current study considered the entire population of the Australian university sector, since the population is quite limited. The complete list of the 39 Australian universities was obtained from the Department of Education, Employment, and Workplace Relations (DEEWR) website, as it was accessible and provided the most recent information about Australian universities (Worthington & Higgs, 2011). Furthermore, the current study used the universities' official websites as the main source of social and environmental reporting, for its accessibility in terms of being cost-effective and downloadable (Garde Sánchez et al., 2013).



**Table 3.3 List of Australian universities (A-Z)**

1- Australian Catholic University	21- University of New England
2- Central Queensland University	22- University of Newcastle
3- Charles Darwin University	23- University of South Australia
4- Charles Sturt University	24- University of Southern Queensland
5- Edith Cowan University	25- University of Tasmania
6- Flinders University of South Australia	26- University of Technology, Sydney
7- Griffith University	27- University of Wollongong
8- James Cook University	28- Victoria University
9- Macquarie University	29- Bond University
10- Monash University	30- Curtin University of Technology
11- RMIT University	31- Deakin University
12- Southern Cross University	32- Federation University Australia (Ballarat)
13- Swinburne University of Technology	33- La Trobe University
14- The Australian National University	34- Murdoch University
15- The University of Adelaide	35- Queensland University of Technology
16- The University of Melbourne	36- The University of Queensland
17- The University of Notre Dame Australia	37- University of New South Wales
18- The University of Sydney	38- University of the Sunshine Coast
19- The University of Western Australia	39- University of Western Sydney
20- University of Canberra	

### 3.7 Data collection

The current study followed three steps in collecting the data. The first step was collecting data about the size of Australian universities, measured by the number of student enrolments. The second step was collecting data about the academic ranking of Australian universities. The third step was collecting data about the level of social and environmental reporting within Australian universities by adopting a disclosure index based on the 2011GRI guidelines.

The current study collected data about the number of enrolled students in 2013 from the Australian Education International website (Australian Education International 2014). The classification of Australian universities based on size was adopted from Universities Australia (2013). In terms of the number of students (enrolments), large-sized universities comprise more than 50,000 students while medium-sized universities comprise more than

10,000 students and small-sized universities comprise less than 10,000 students (Universities Australia, 2013).

**Table 3.4 Size categories based on student enrolments (prior-adjustments)**

Number of enrolled students (Size)	Total number of universities in this category
< 10,000	1
10,000- 20,000	9
20,000- 30,000	12
40,000- 50,000	7
> 50,000	4
Total	33

Based on Table 3.4, six universities remain unclassified. These six universities lie in the category of 30,000–40,000, which were overlooked by Universities Australia (2013). Accordingly, the current study has developed its own categorisation to cover all 39 universities as shown in Table 3.5.

**Table 3.5 Size categories based on student enrolments (post-adjustments)**

Size (Number of enrolled students)	Total number of universities in this category
Large-sized Universities > 50,000	4
Medium-sized Universities 10,000- 50,000	34
Small-sized Universities < 10,000	1
Total	39

Moreover, the current study collected data of proxies rather than total number of enrolments from various sources. The MyUniversity (2014) site was one source for collecting data on the age of universities and the number of campuses. A second source was the university's annual report for 2013 that provided amounts of total revenue (revenue from continuing operations), net assets and total assets. A third source was the Department of Education (2014b) for collecting data of the total number of full-time paid staff.

The current study collected data for the academic ranking of Australian universities from the Shanghai ranking website (Shanghai Jiao Tong University, 2013).

**Table 3.6 World Academic ranking categories based on Shanghai Jiao Tong ranking**

Academic Ranking 2013 (Shanghai Jiao Tong)	Total number of universities in this category
Top 100	5
101- 150	2
201- 300	2
301- 400	7
401- 500	3
Non-ranked	20
Total	39

The current study followed two main steps for collecting data about the level of social and environmental reporting within Australian universities. The first step was collecting social and environmental data. The second step was measuring the level of social and environmental reporting by adopting the GRI-based index.

There collection of social and environmental reporting data of Australian universities required two steps. The first step was accessing the university websites to obtain annual reports and sustainability reports. The second step was sending a follow-up e-mail to sustainability managers, and media managers of Australian universities for completeness purposes, to ensure that the sustainability reports not publicly available on the website are not issued.

The current study relied on university websites for primary social and environmental data collection. Websites are used because they provide social and environmental reporting information that is timely and rapidly accessible (Gallego-Álvarez, Rodríguez-Domínguez, & García-Sánchez, 2011; de Villiers & van Staden, 2011) and which overcome many of the difficulties experienced with the use of other methods (Dixon et al., 1991), such as mail and e-mails. Finally, the popularity of websites (Holder-Webb et al., 2009) means that all Australian universities have their own official websites This allowed the current study to analyse more data and provide more inferences.

A follow-up e-mail was sent to sustainability managers and media managers of all 39 universities to complement the website data by confirming that the universities that did not publish sustainability reports on their websites were not actually preparing any separately.

**Table 3.7 Chapter 3 Research Objectives and Outcomes**

Objectives	Outcomes (sections)
Applying the Accountability framework to support the theory of current study.	The current study adopted the accountability model of Coy et al.(2001) as the accountability framework linking size, academic ranking and social and environmental reporting with university (accountor) and society (accountee).

## **Chapter 4: RESULTS**

### **4.1 Introduction**

This chapter provides the results of the statistical analysis using Excel on the relationship between the total number of student enrolments and the level of social and environmental reporting within Australian universities. In addition, the chapter reports the results of the relationship between the Shanghai world academic ranking and the level of social and environmental reporting within Australian universities.

### **4.2 Results of statistical analysis**

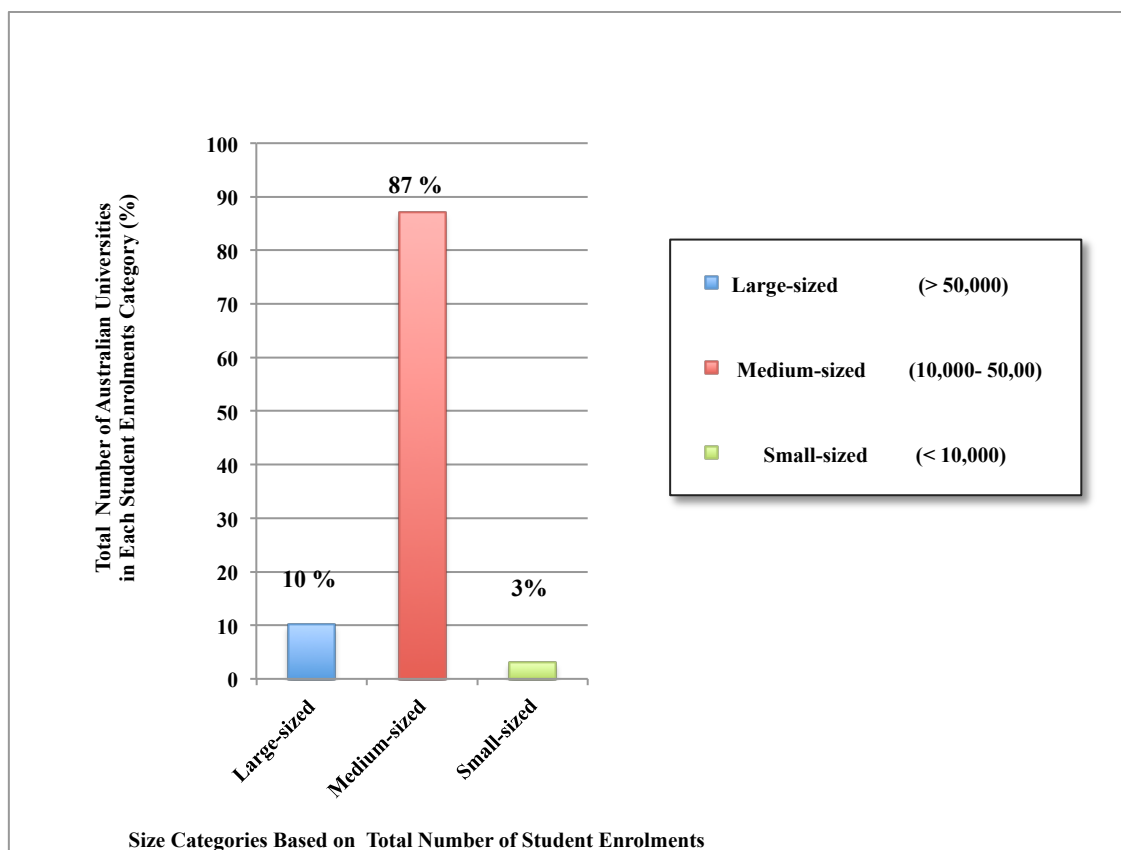
#### **4.2.1 Descriptive statistics**

The current study provides descriptive statistics of Australian universities based on size and on world academic ranking before exhibiting statistical results. Australian universities are classified based on the total number of student enrolments into large, medium and small- sized. Moreover, Australian universities are classified based on the Shanghai world academic ranking into ranked and non-ranked.

##### **4.2.1.1 Classification of Australian universities based on Size**

The current study advocates the total number of student enrolments as the utmost supported proxy by the literature, but also presents other proxies that are less supported in the literature. These other proxies are age of the university, total number of university campuses, total number of full-paid staff, total revenues and total assets. The current study applies proxies of size rather than total number of student enrolments to allow for comparability and to test for the reliability of prior studies' findings.

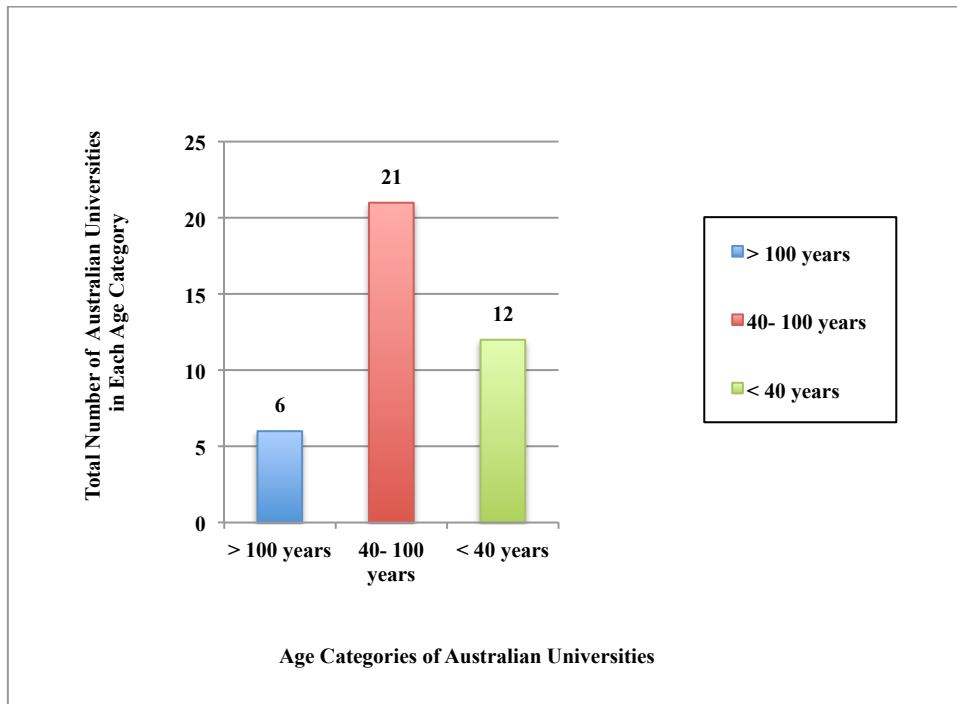
#### 4.2.1.1.1 Classification of Australian universities based on Total Number of Student Enrolments



**Figure 4.1 Australian Universities Size Classification based on Total Number of Student Enrolments**

According to Figure 4.1, there are three size categories, namely, large-sized, medium-sized and small-sized universities. Large-sized universities have more than 50,000 student enrolments. Medium-sized universities have less than 50,000 and more than 10,000 student enrolments. Small-sized universities have less than 10,000 student enrolments. Figure 4.1 shows that most Australian universities (87%) are medium-sized, while 10% are large-sized and 3% are small-sized.

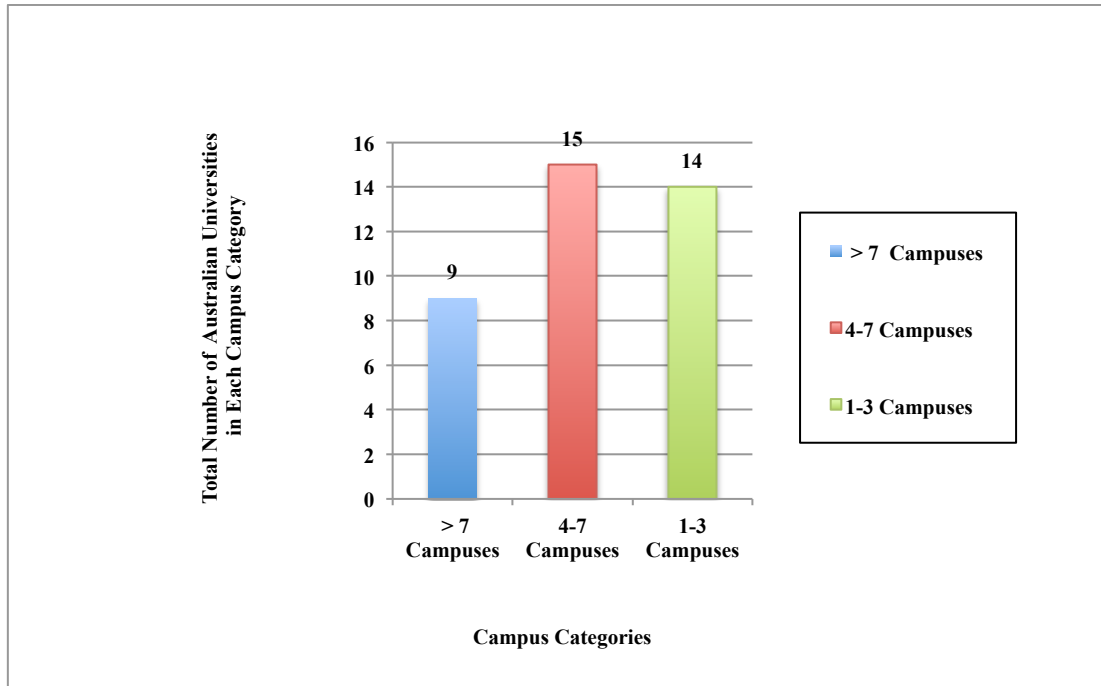
#### 4.2.1.1.2 Classification of Australian universities based on Age of University



**Figure 4.2 Australian Universities Size Classification based on Age of the University**

Figure 4.2 identifies three size categories based on the age of the university. These three categories are 100 years old or older, 40-100 years old and less than 40 years old). Moreover, Figure 4.2 shows that the majority of Australian universities are 40-100 years old (21 universities), which is consistent with the results of total student enrolments. Six universities are 100 years or older and 12 universities are less than 40 years old. The six oldest (100 years old or more) universities are the University of Sydney, the University of Melbourne, the University of Adelaide, the University of Tasmania, the University of Western Australia and the University of Queensland. In conclusion, most Australian universities are 40 years old or more (27 universities), which reflects the experience of Australian universities in teaching and research.

#### 4.2.1.1.3 Classification of Australian Universities based on Total Number of Campuses

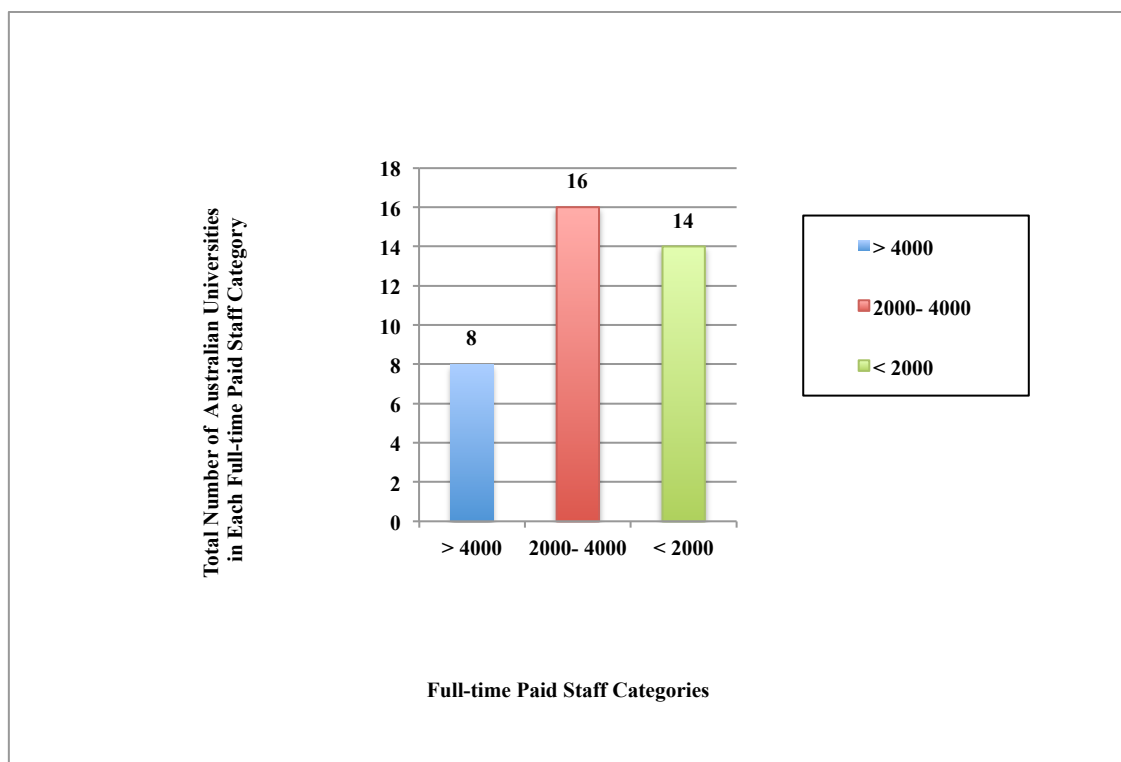


**Figure 4.3 Australian Universities Size Classification based on the Total Number of Campuses**

Figure 4.3 indicates three categories of size based on the total number of campuses. These categories are large-sized (more than 7 campuses), medium-sized (4-7 campuses) and small-sized (1-3 campuses). Moreover, Figure 4.3 shows that most Australian universities are small and medium-sized (29 universities), while only nine universities are large-sized. Therefore, the total number of campuses as a proxy of university size shows that most Australian universities are small and medium-sized, compared to mostly medium-sized universities when total student enrolments are considered.



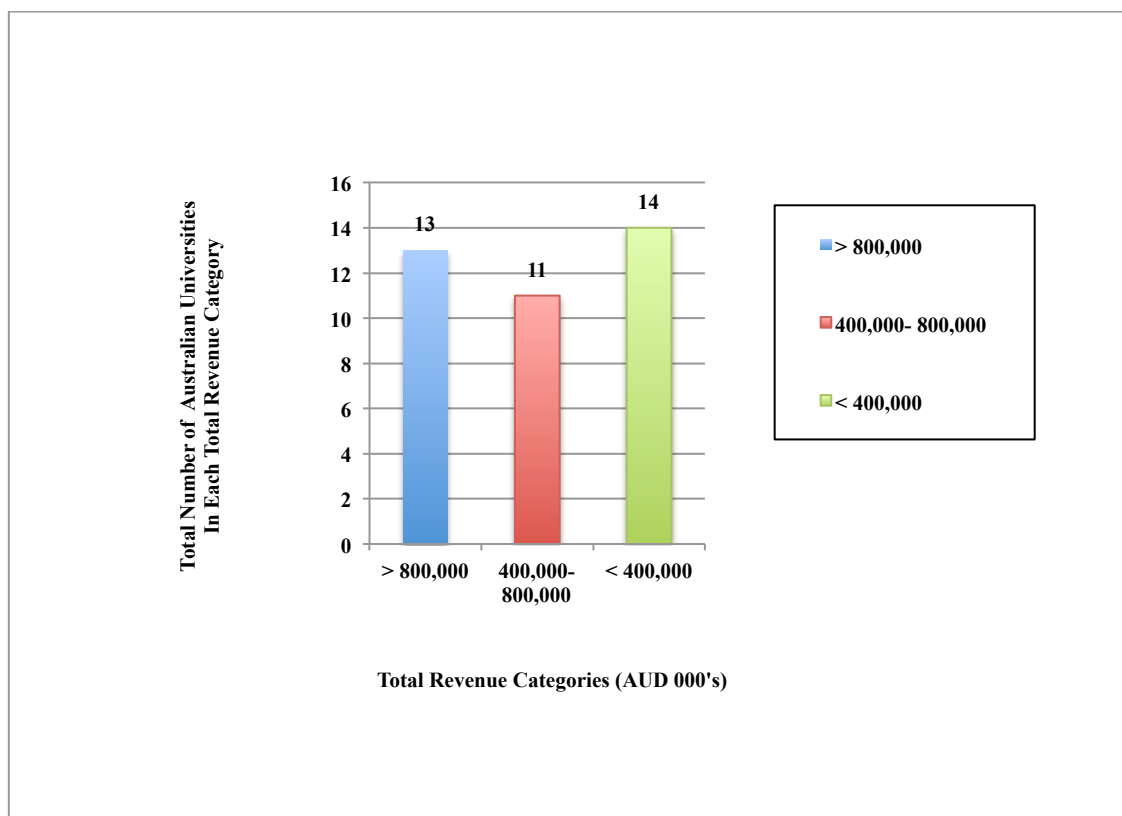
#### 4.2.1.1.4 Classification of Australian universities based on Total Number of Full-time Paid Staff



**Figure 4.4. Australian Universities Size Classification based on Total Number of Full-time Paid Staff**

Figure 4.4 presents three size categories based on the total number of full-paid staff. These three categories are large-sized (more than 4,000 staff members), medium-sized (2,000-3,999 staff members) and small-sized (less than 2000 staff members). Moreover, Figure 4.4 shows that the bulk of Australian universities are medium-sized (16 universities) consistent with the findings of the total student enrolments setting. However, total number of student enrolments and total number of full-paid staff are of a similar nature, which has led to similar results.

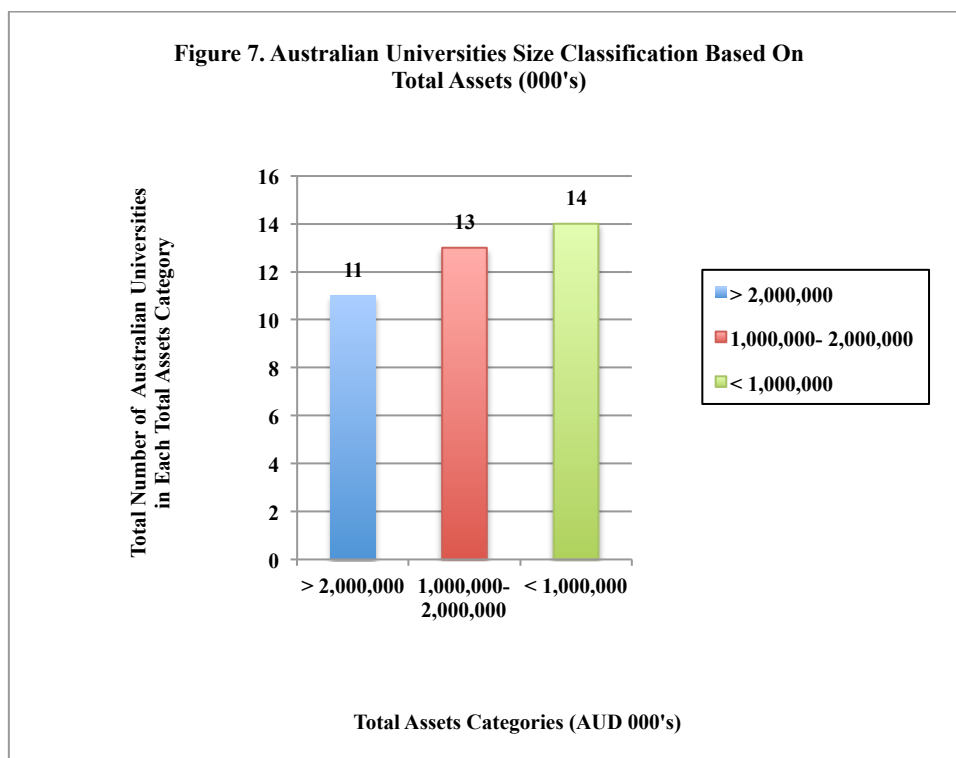
#### 4.2.1.1.5 Classification of Australian universities based on Total Revenues



**Figure 4.5. Australian Universities Size Classification based on Total Revenues**

Figure 4.5 provides three categories of size based on total revenue. These three categories are large-sized (more than \$800 million), medium-sized (\$400 million-799 million) and small-sized (less than \$400 million). The differences between the three categories are insignificant because 13 universities are large sized, 11 universities are medium sized and 14 universities are small-sized.

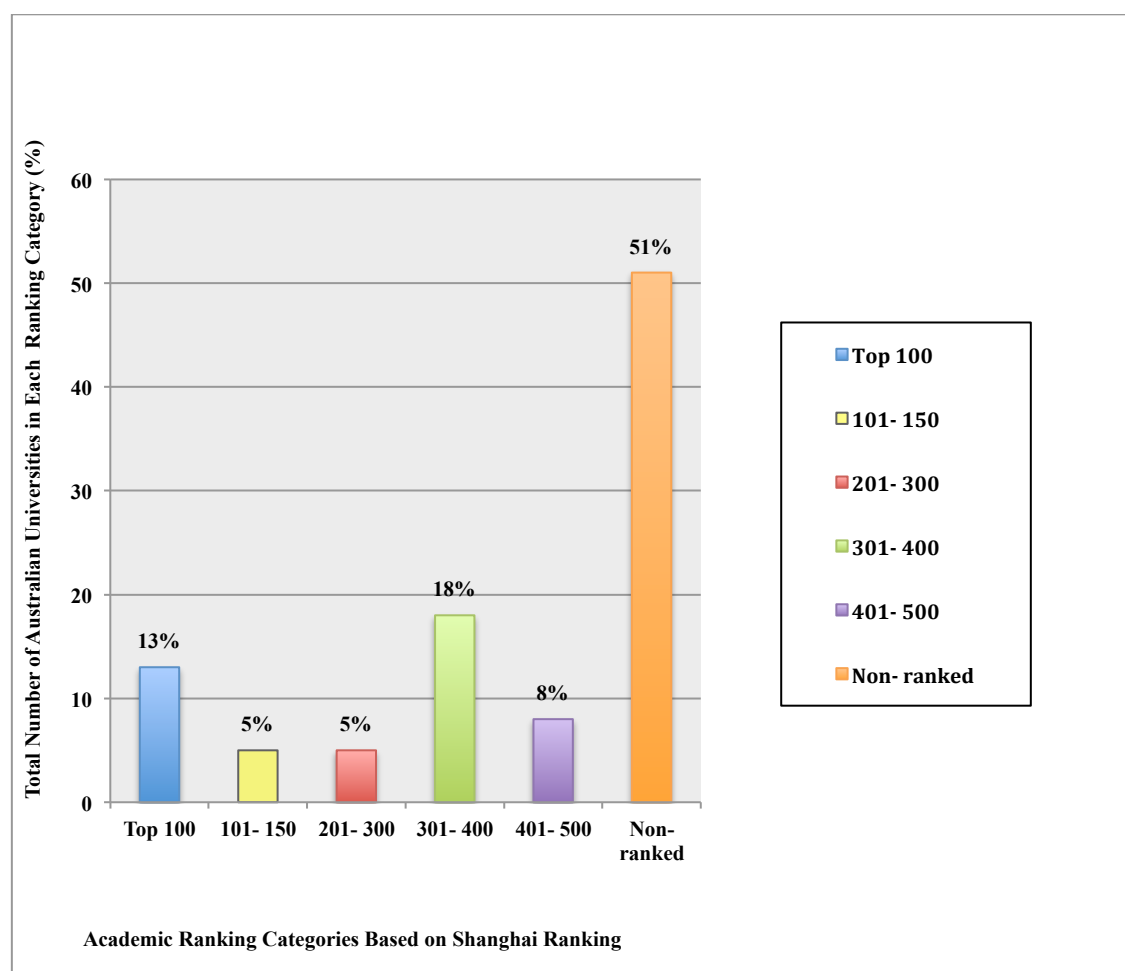
#### 4.2.1.1.6 .... Classification of Australian universities based on Total Assets



**Figure 4.6. Australian Universities Size Classification based on Total Assets (000's)**

Figure 4.6 shows three categories of size based on the total assets. These three categories are large-sized (more than \$2,000,000,000), medium-sized (\$1000,000,000-1,999,000,000) and small-sized (less than \$1,000,000,000). The discrepancies between the three categories are insignificant because 11 universities are large sized, 13 universities are medium sized and 14 universities are small-sized.

#### 4.2.1.2 Classification of Australian Universities based on Shanghai World Academic Ranking



**Figure 4.7 Classification of Australian Universities based on Shanghai World Academic Ranking**

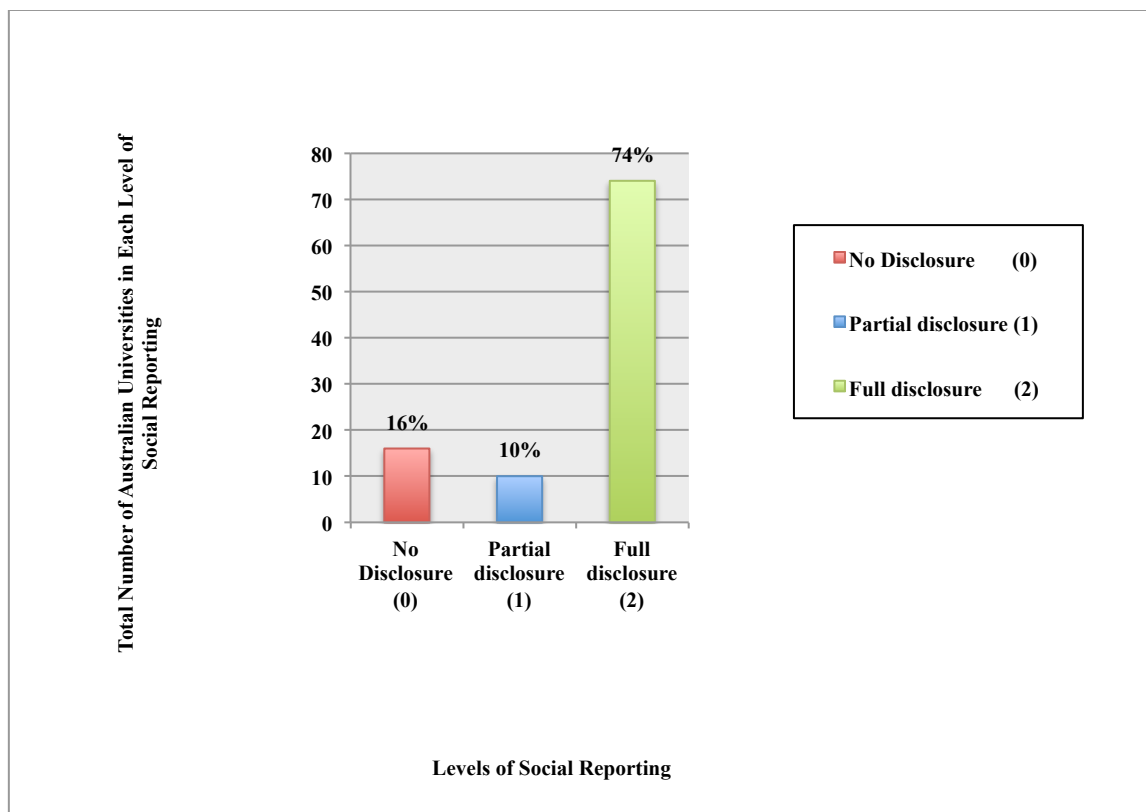
Figure 4.7 demonstrates that there are more non-ranked universities (51%) than ranked universities (49%) in Australia. The proportion of ranked Australian universities is allocated as top 100 (13%), 101-150 (5%), 201-300 (5%), 301-400 (18%) and 401-500 (8%). Accordingly, the proportion of highly ranked (top 100) Australian universities is insignificant compared to their non-ranked counterparts.

#### 4.2.2 Statistical analysis

This section presents the results of the statistical analysis for social reporting alone, environmental reporting and both social and environmental reporting within Australian universities. Thirty-eight Australian universities that published annual reports in 2013 were included in the analysis. As the University of Notre Dame Australia did not publish an

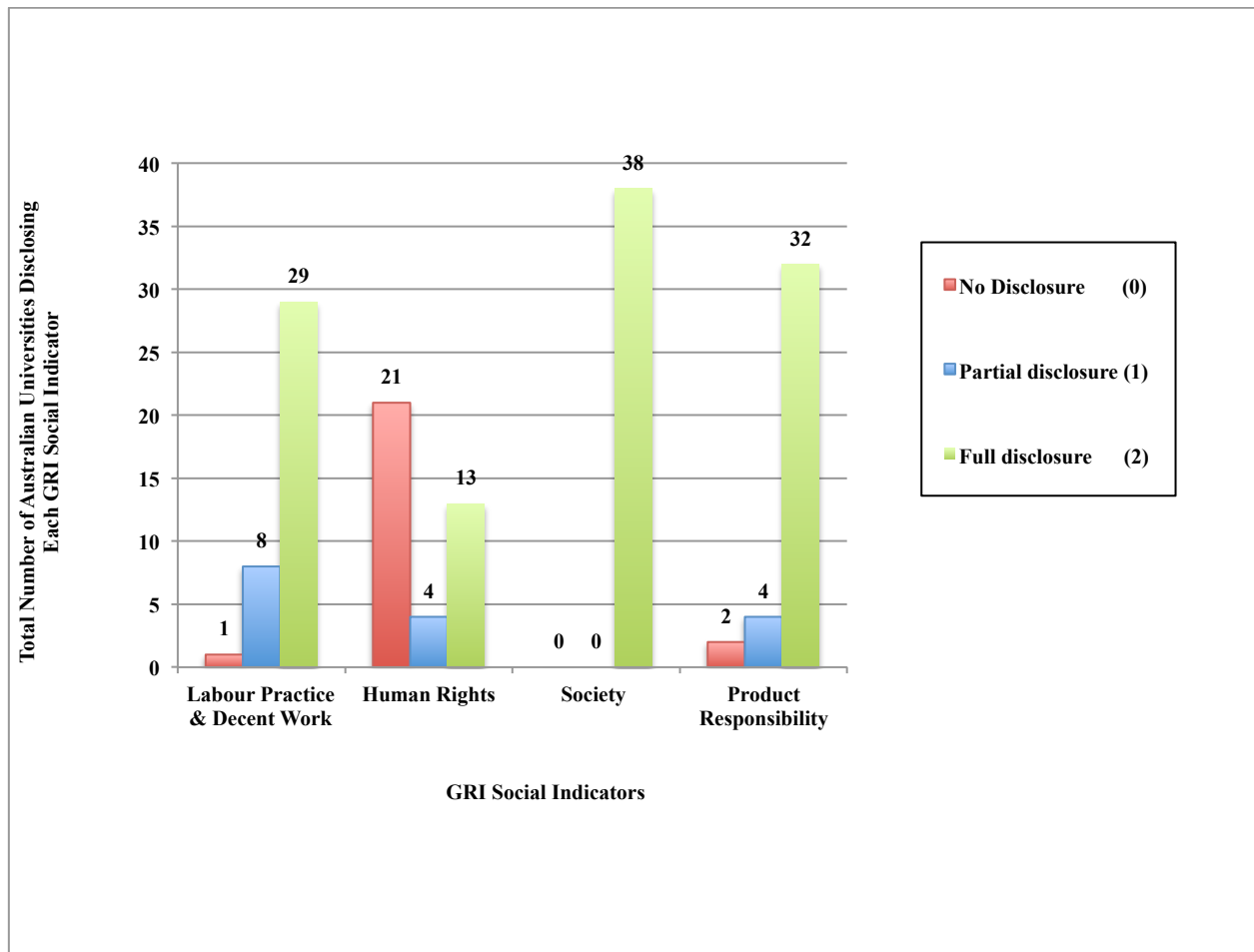
annual report or any form of stand-alone social and environmental reports in 2013, it was excluded from the analysis.

#### 4.2.2.1 The Level of social reporting within Australian universities



**Figure 4.8. The Level of Social Reporting within Australian Universities**

Figure 4.8 shows that there are three different levels of social and environmental reporting, namely, full disclosure (2), partial disclosure (1) and no disclosure (0). It also indicates that the level of full disclosure in social reporting is relatively high and represents 74%, compared with partial disclosure (10%) and no disclosure (16%) of all universities. The level of reporting of each GRI social indicator is shown in Figure 4.9.

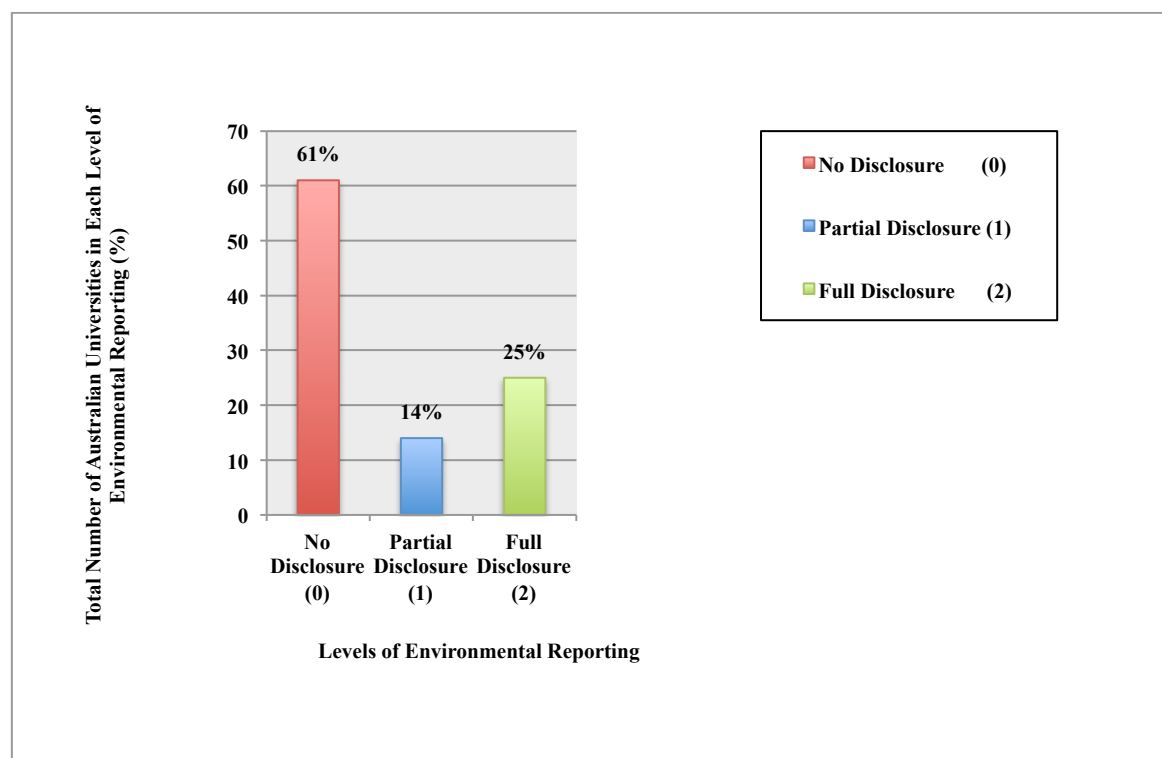


**Figure 4.9. The Level of Reporting of GRI Social Indicators within Australian Universities**

Figure 4.9 shows that 38 Australian universities fully reported on society as one of the GRI social indicators, 32 universities fully reported on product responsibility, 29 universities fully reported on labour practices and decent work and only 13 universities fully reported on human rights. The highest level of full disclosure (100%) is on society and the lowest level of full disclosure (34.21%) is on human rights. Accordingly, all Australian universities focus on reporting on society's social aspects such as community engagement, Aboriginal education and disability education. But Australian universities are not giving due care to human rights disclosure as evidenced by the large number not disclosing any information about their human rights practices (21 universities), which represents 55.26% of the total number of Australian universities (38 universities). In Figure 4.9, the non-disclosure of social aspects is relatively insignificant for labour practice and decent work (1 university), society (0) and product responsibility (2 universities).

Furthermore, Figure 4.9 shows that only 8 universities partially disclosed information on labour practice and decent work, only 4 universities partially disclosed information on human rights, none of the universities partially disclosed information on society, and only 4 universities partially disclosed information on product responsibility. Therefore, partial disclosure of social aspects is relatively insignificant within Australian universities compared to full disclosure and no disclosure. In conclusion, the levels of social reporting within Australian universities based on GRI index is remarkably high with three out of the four indicators considered full-disclosure indicators.

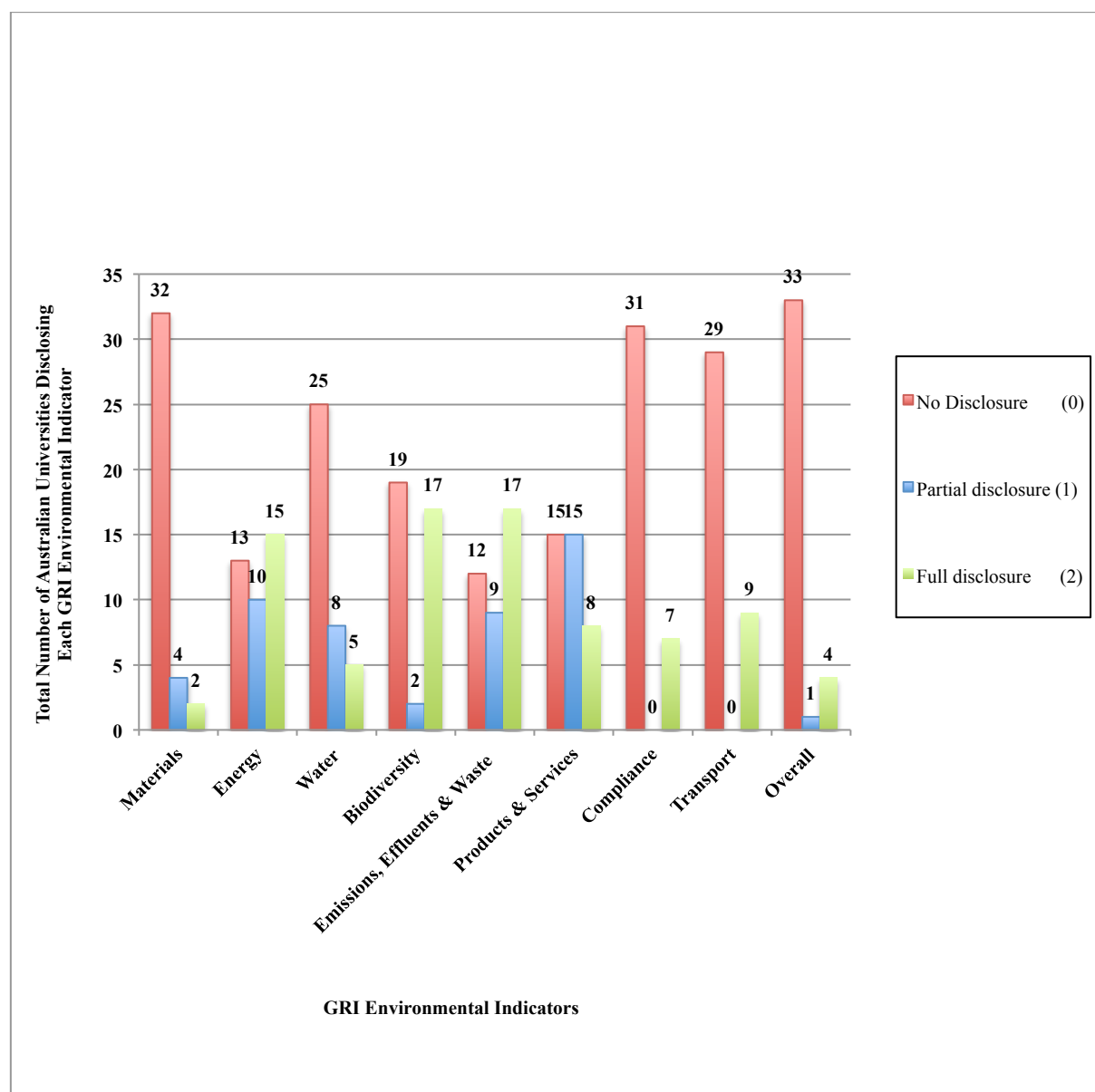
#### 4.2.2.2 The Level of environmental reporting within Australian universities



**Figure 4.10. The Level of Environmental Reporting within Australian Universities**

Figure 4.10 shows that the level of environmental non-disclosure is relatively high and represents 61%, compared with 14% partial disclosure and 25% full disclosure. The current study measured the level of environmental reporting within 38 Australian universities, by comparing environmental reporting within annual reports against the GRI index environmental indicators namely, materials, energy, water, biodiversity, emissions, effluents

and waste, products and services, compliance, transport and overall. The overall GRI environmental indicator is concerned with the total expenditures to protect the environment. The level of reporting of each GRI environmental indicator is shown in Figure 4.11.



**Figure 4.11. The Level of Reporting GRI Environmental Indicators within Australian Universities**

In Figure 4.11, the highest levels of environmental non-disclosure are shown in GRI environmental indicators of overall (33 universities), materials (32 universities), compliance (31 universities), transport (29 universities), water (25 universities) and biodiversity (19 universities). Also, the highest levels of environmental full-disclosure are shown in GRI environmental indicators of biodiversity (17 universities), emissions, effluents and waste (17

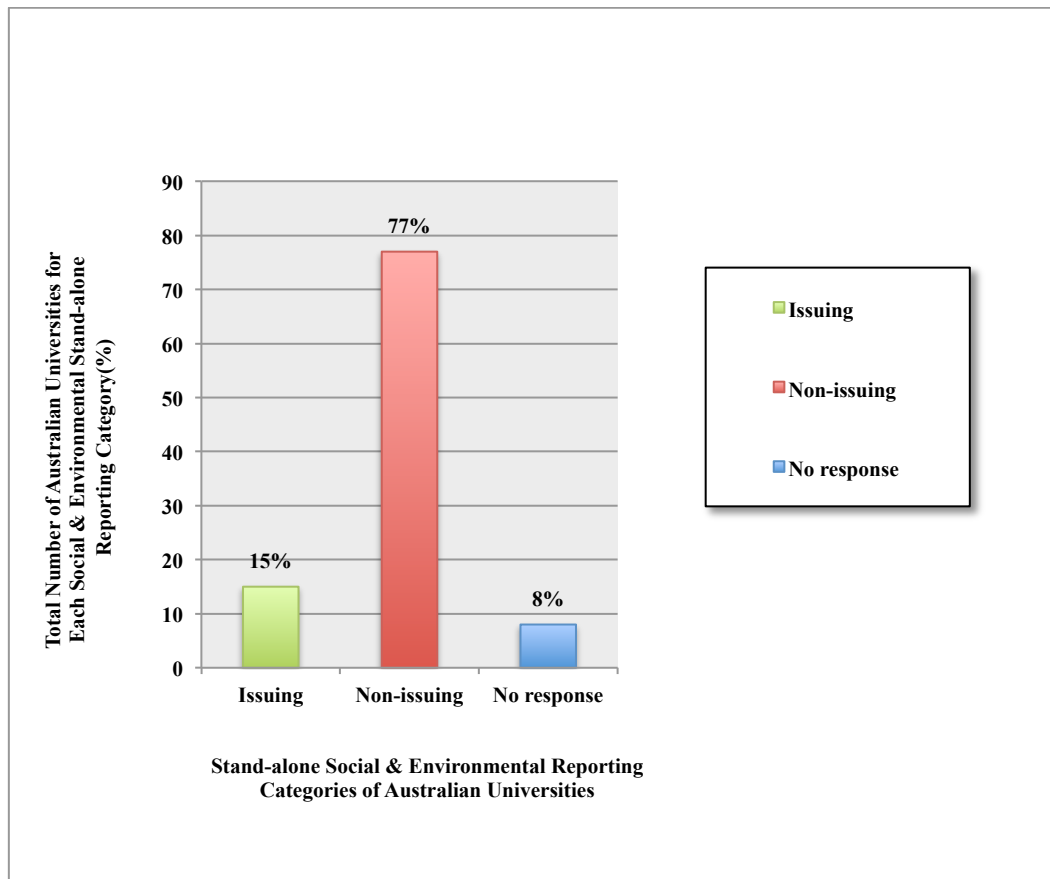


universities) and energy (15 universities). The highest levels of environmental partial-disclosure are shown in GRI environmental indicators of products and services (15 universities) and energy (10 universities). Therefore, the level of environmental reporting within Australian universities based on the GRI index is remarkably low with six out of nine indicators considered non-disclosure indicators. These six indicators are overall, materials, compliance, transport, water and biodiversity. The three other environmental GRI indicators are emissions, effluents and waste, energy and products and services were disclosed as follows. Environmental full-disclosure of emissions, effluents and waste was the highest (17 universities) compared to non-disclosure (12 universities) and partial-disclosure (9 universities). Similarly, environmental full-disclosure of energy was the highest (15 universities) compared to non-disclosure (13 universities) and partial-disclosure (10 universities). Finally, environmental full-disclosure of products and services was equal to partial disclosure (15 universities) but non-disclosure was the lowest (8 universities).

Australian universities are considerably concerned with social reporting, as substantiated by the full-disclosure of three out of the four indicators (i.e. 75% of GRI social indicators) and by the high level of full-disclosure (74% in Figure 4.8). Additionally, Australian universities are overlooking environmental reporting as confirmed by the non-disclosure of six out of nine indicators (i.e. 66.67% of GRI environmental indicators) and by the high level of non-disclosure (61% in Figure 4.10). These findings reflect that Australian universities are more concerned with social reporting than environmental reporting.

#### **4.2.2.3 Australian Universities issuing sustainability reports**

The current study considers stand-alone (i.e. separate from annual reports) social and environmental reports (Cho et al., 2012; Dhaliwal et al., 2012; Du & Gray, 2013; Holder-Webb et al., 2009; Mahoney et al., 2013) as another relevant social and environmental reporting media. Issuing stand-alone social and environmental reports, “sustainability reports”, within universities promotes public trust, and helps universities and their stakeholders to reach a generally accepted sustainability report (Adams, 2013).



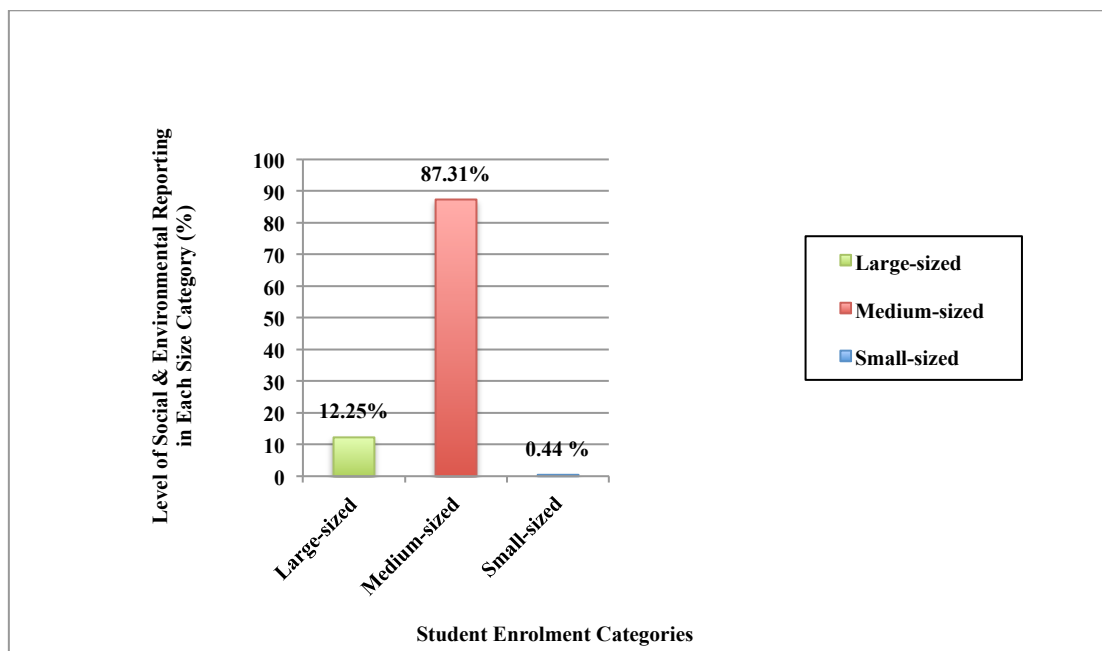
**Figure 4.12 Australian Universities Issuing Stand-alone Social and Environmental Reports**

In Figure 4.12, the results show that the proportion of Australian universities issuing stand-alone social and environmental reports is insignificant (15%) compared with their non-issuing counterparts (77%). The current study identified Australian universities that are issuing stand-alone social and environmental reports by accessing the website of each university and sending a follow-up e-mail. All Australian universities except three universities (8%), that did not advise whether they issue stand-alone social and environmental reports, responded to the e-mail. Only six Australian universities issue complete or some form of stand-alone social and environmental reports. Deakin University, Federation University Australia (Ballarat), Macquarie University, La Trobe University and University of the Sunshine Coast issue stand-alone reports in the form of sustainability reports, and Charles Sturt University issues an environmental scorecard, a form of stand-alone report. Thus, the majority of Australian universities (32) do not value social and environmental reporting as one aspect of their public accountability.

### 4.3 Hypotheses Tests

#### 4.3.1 The Relationship between Total Number of Student Enrolments and the Level of Social and Environmental Reporting

Figure 4.13 shows the results of the first hypothesis, which predicted that large-sized Australian universities were more likely to provide higher levels of social and environmental reporting than their medium and small-sized counterparts. The level of social and environmental reporting was calculated for each size category (large-sized, medium-sized and small-sized), by adding the scores for GRI social and environmental index indicators in the 2013 annual report of each Australian university.

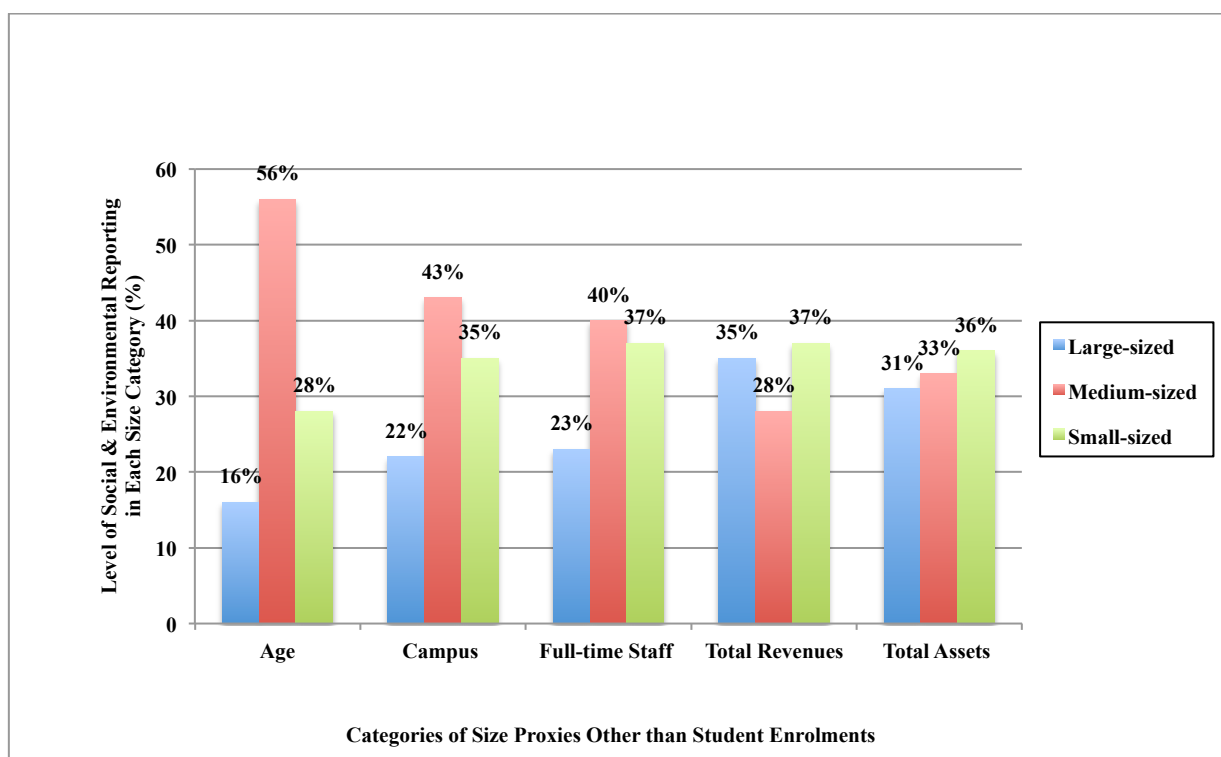


**Figure 4.13 The Effect of Student Enrolments on the Level of Social and Environmental Reporting within Australian Universities (First Hypothesis)**

Figure 4.13 indicates that the largest proportion of social and environmental reporting is in medium-sized Australian universities (87.31%), which does not support the first hypothesis. The level of social and environmental reporting within large-sized and small-sized universities is 12.25% and 0.44%, respectively. Accordingly, the level of social and environmental reporting within large-sized universities is low then increases within medium-sized and finally decreases to very low within small-sized universities. The level of social and

environmental reporting should consistently increase/ decrease with the changes in the total student enrolments, if there is a relationship. However, there is no relationship between the total number of student enrolments and the level of social and environmental reporting within Australian universities.

#### 4.3.2 The Relationship between Other Size Proxies and the Level of Social and Environmental Reporting



**Figure 4.14. The Effect of Other Size Proxies on the Level of Social and Environmental Reporting within Australian Universities (First Hypothesis)**

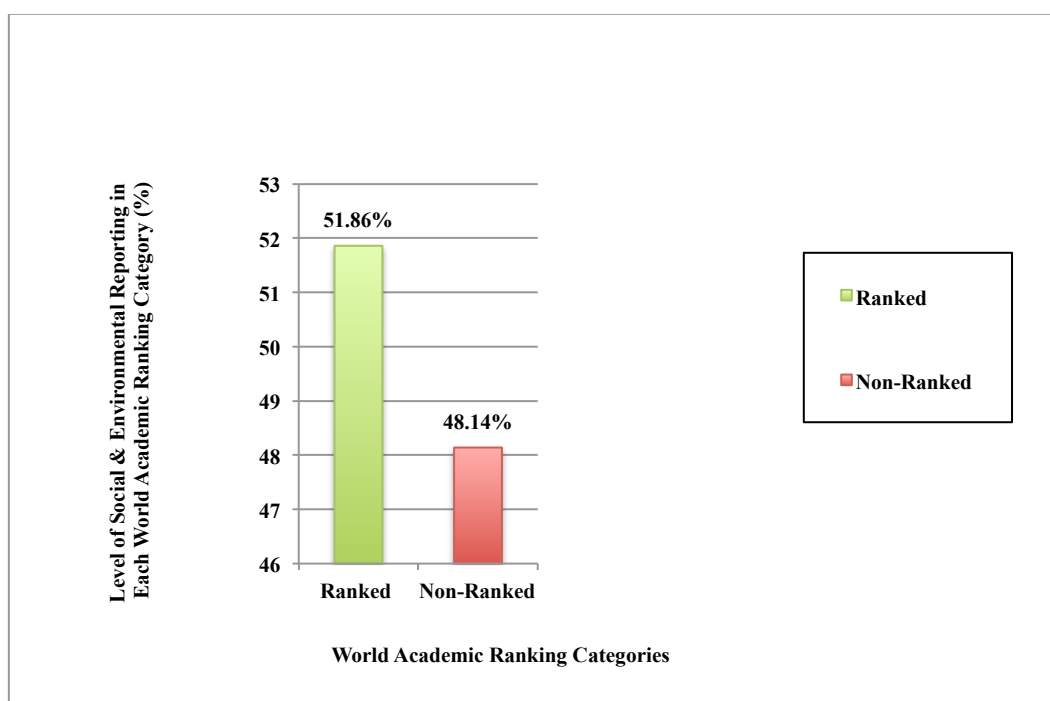
Figure 4.14 shows that using other proxies rather than the total number of student enrolments does not yield different results. It also shows that medium-sized universities have the highest levels of social and environmental reporting when using age of university, total number of campuses and total number of full-time paid staff as size proxies. However, large-size universities have the highest levels of social and environmental reporting when using total revenues and total assets as size proxies. Using the age of university as a proxy of size produces great differences in the levels of social and environmental reporting among universities of different sizes. The level of social and environmental reporting within

medium-sized universities is 56%, compared to 28% within small-sized and 16% within large-sized universities. The category of medium-sized universities is the only one that values social and environmental reporting and gives relatively significant consideration to this aspect of accountability, as evidenced by the results of testing the first hypothesis. Social and environmental reporting within medium-sized Australian universities reached the highest levels (87%) using the total number of student enrolments compared to age of university (56%), total number of campuses (43%), and total number of full-time paid staff (40%). Consistent with the literature, the total number of student enrolments is the best proxy of size as it clearly reflects the non-existence of the relationship between size and the level of social and environmental reporting. Unexpectedly, small-sized universities provide higher levels of social and environmental reporting using total revenues and total assets as size proxies. The level of social and environmental reporting within small-sized universities is 37% compared to 35% for large-sized and 28% for medium-sized universities when using total revenues. Also, the level of social and environmental reporting within small-sized universities is 36% compared to 31% for large-sized and 33% for medium-sized universities when using total assets.

The level of social and environmental reporting of large-sized (12.25%) is significantly higher than small-sized universities (0.44%) when using the total number of student enrolments, but relatively higher (35%) than medium-sized universities (28%) when using total revenues. In conclusion, there is no specific trend for the relationship between size and the level of social and environmental reporting within Australian universities. Thus generally, Australian universities focus more on other accountability aspects rather than social and environmental reporting.

### 4.3.3 The Relationship between World Academic Ranking and the Level of Social and Environmental Reporting

The second hypothesis predicts that top-ranked Australian universities are more likely to provide higher levels of social and environmental reporting than their low-ranked counterparts. Figure 16 shows the results of testing the world academic ranking hypothesis.



**Figure 4.15. The Effect of Shanghai World Academic Ranking on the Level of Social and Environmental Reporting within Australian Universities**  
(Second Hypothesis)

In Figure 4.15, the largest proportion of social and environmental reporting is in ranked Australian universities (51.86%), which supports the second hypothesis. The level of social and environmental reporting within non-ranked universities is 48.14%. Therefore, the level of social and environmental reporting within Australian universities is only slightly affected by the Shanghai world academic ranking. The results are inconsistent with the view that ranked universities promote and sponsor social and environmental reporting (De Filippo et al., 2012; Garde Sánchez et al., 2013) with this little difference of 3.72% between ranked (51.86%) and non-ranked (48.14%) universities

#### 4.4 Summary

This chapter presented the results of testing two hypotheses. The results did not support the first hypothesis. Accordingly, the results indicate the insignificance of the relationship between the total number of student enrolments (as a proxy of size) and the level of social and environmental reporting within Australian universities. However, the results support the second hypothesis. Therefore, there is a relatively significant relationship between Shanghai world academic ranking and the level of social and environmental reporting within Australian universities, as evidenced by the slight difference (3.72%) between ranked and non-ranked universities in their levels of social and environmental reporting. In conclusion, Australian universities consider social and environmental reporting as the least important aspect of public accountability, as evidenced by the low levels of social and environmental reporting in ranked universities (51.86%) and by their irrelevant relationship with size. The current study will interpret the results in the next chapter from an accountability perspective.

Large-sized universities are expected to provide higher levels of social and environmental reporting than small and medium-sized universities.

**Table 4.1 Chapter 4 Research Objectives and Outcomes**

Objectives	Outcomes (sections)
To test the first hypothesis in which there is a relationship between size and the level of social and environmental reporting within Australian universities.	There is no relationship between size and the level of social and environmental reporting within Australian universities.
To test the second hypothesis in which there is a relationship between Shanghai world academic ranking and the level of social and environmental reporting within Australian universities.	There is a relatively significant relationship between Shanghai world academic ranking and the level of social and environmental reporting within Australian universities.

## **Chapter 5: CONCLUSIONS, IMPLICATIONS & FUTURE RESEARCH**

### **5.1 Introduction**

The purpose of the current study is to extend the SEA literature by examining the relationships of size, world academic ranking and the level of social and environmental reporting within Australian universities using an accountability model. Size was measured by the total number of university student enrolments, age of the university, total number of university campuses, total number of full-paid staff in the university, total revenues and total assets of the university. Shanghai ranking of Australian universities was the world academic ranking applied. Finally, the accountability framework adopted was that of Coy et al.(2001).

The study found that there was no relationship between the level of social and environmental reporting and the size of Australian universities. Also the study revealed that there was a relationship between the social and environmental reporting and the Shanghai world academic ranking of Australian universities. Ranked Australian universities provided relatively higher levels of social and environmental reporting than their non-ranked counterparts.

### **5.2 Discussion**

Mainly medium-sized Australian universities provide the highest levels of social and environmental reporting compared to large-sized and small-sized universities, as evidenced by the results using most of the size proxies, that is, total number of student enrolments, age of university, total number of campuses and total number of full-time paid staff.

Small-sized Australian universities provide the highest levels of social and environmental reporting using total revenues and total assets. Unpredictably, large-sized Australian universities provide the lowest levels of social and environmental reporting using all size proxies except total number of student enrolments and total revenues. Small-sized Australian universities provide the lowest level of social and environmental reporting using total number of student enrolments, while medium-sized universities provide the lowest level using total revenues. There are three possible interpretations of these observations. The first explanation



is the low amount of funding assigned by the government for each student (Guthrie & Neumann, 2007), which causes universities to give less attention to the levels of social and environmental reporting. The second explanation is the higher levels of accountability associated with larger size universities (Huisman & Currie, 2004), which is considered a burden on universities and thus implies focusing on certain aspects of accountability from the viewpoint of the university. The third explanation is that universities need to construct their own funding sources independent of the government (Guthrie & Neumann, 2007), by focusing on improving the quality of teaching and research rather than the level of social and environmental reporting. Therefore, Australian universities are not concerned with the levels of social and environmental reporting because this does not make a difference in terms of increasing government funding or creating new sources of funding.

The findings of the current study are inconsistent with the findings from for-profit sector studies (Adams, 2002; Gray et al., 2001; Hackston & Milne, 1996; Trotman & Bradely, 1981) that support the relationship between corporate size and the level of social and environmental reporting. But the findings of the current study are consistent with the findings from public sector studies (Frost & Seamer, 2002; Lodhia et al., 2012) that do not support the relationship between size and the level of social and environmental reporting.

There is a relationship between world academic ranking and the level of social and environmental reporting within Australian universities as evidenced by the difference of 3.72% between ranked (51.86%) and non-ranked universities (48.14%). The current study offers three possible interpretations of this result. One interpretation is that ranked universities, compared to non-ranked universities, may conduct social and environmental research and therefore are interested in empirically justifying their findings by providing social and environmental reporting.

Another interpretation is that ranked universities may try to enhance their prestige by providing social and environmental reporting as a way to show their comprehensive view of accountability by presenting all aspects of accountability to the community. A final interpretation is that ranked universities feel more accountable to the community, and are more responsive in adopting modern social and environmental reporting practices.

### **5.3 The levels of social and environmental reporting**

The level of environmental reporting is lower than social reporting within Australian universities. This shows that Australian universities may view their accountability from a social perspective rather than an environmental perspective.

Furthermore, the recent formation of sustainability offices in Australian universities can justify the lowest level of environmental reporting, as universities are not fully aware of their environmental accountability and this is also considered a convincing reason for the insignificant amount of published sustainability reports within Australian universities. The lowest level of full social reporting on human rights is unexpected. However, the human rights social GRI indicator is concerned with incidents of discrimination, grievances relating to human rights and violations of indigenous rights. This is a convincing indication that Australian universities strictly consider human rights an important aspect of their accountability and therefore reporting on breach of human rights is minimal. The highest level of non-disclosure environmental reporting is on materials (32%), because universities as organisations providing services do not use the quantities of renewable and non-renewable materials like corporations. Therefore, universities do not consider reporting on materials a relevant aspect of accountability.

### **5.4 Implications**

The current study has a number of implications for SEA researchers, regulators and universities. First, the implications for SEA researchers are the need to examine the level of social and environmental reporting within all sectors of the economy in order to provide a complete representation of the current state of social and environmental reporting, and further investigate different aspects of accountability within the Australian university sector. Second, the implications for regulators are the need to offer a specific framework such as GRI or a set of guidelines to be followed when organisations provide social and environmental reporting, allowing for comparison across organisations and benchmarking social and environmental performance. Regulators also need to set rules to mandate social and environmental reporting within universities. Third, the findings indicate that universities view accountability in different ways. Large-sized universities place greater emphasis on teaching and research rather than social and environmental reporting because they are more concerned about student enrolments while the opposite applies to smaller-sized universities. For instance, the

University of New South Wales (UNSW) is a large sized Australian university (52,363 students) and is highly ranked (101-150 based on the Shanghai ranking) but its level of social and environmental reporting is very low (with a total score of 8). Therefore, the UNSW views accountability from a research perspective, which justifies its high academic ranking (research-based ranking), that is accompanied by its relatively low social and environmental reporting. A second example is the non-ranked, medium-sized University of Southern Queensland (26,734 students), which provides the highest level of social and environmental reporting among Australian universities. So, the University of Southern Queensland does not overlook accountability but views accountability from a social and environmental reporting perspective. Other examples are the Australian National University (ANU) and the University of Tasmania, which view accountability from a superlative research perspective, by emphasising research excellence (66th and 301-400 respectively in Shanghai ranking), while being relatively small-sized (20,929 students and 25,097, respectively) and having a low level of social and environmental reporting (with a total score of 15 and 8, respectively). Furthermore, universities need to include new social and environmental performance measures in their annual reports to meet the expectations of public accountability (Coy & Pratt, 1998).

## **5.5 Limitations**

The current study has a number of limitations while providing some contribution to knowledge. These limitations are:

- focusing on social and environmental reporting as one aspect of accountability within universities and disregarding other aspects such as teaching quality, research excellence and alliances with industry;
- failing to conduct interviews with sustainability managers to understand their perceptions of accountability and the challenges facing their universities in providing social and environmental reporting;
- being of narrow focus by merely examining universities in Australia without considering other developed and developing countries;
- relying on 2013 annual reports as the ultimate source of information while disregarding other social and environmental reporting media such as brochures and advertisements (Tilt, 1994; Zeghal & Ahmed, 1990) so lacking generalisability; and

- using the GRI index as a content analysis technique which only partially represents the level of social and environmental reporting within universities, thus only focusing on text and not considering pictures and graphs (Unerman, 2000).

## **5.6 Future Research**

According to the limitations presented in the previous section, the current study proposes the following for future research:

- focusing on other aspects of accountability within universities such as reporting on the quality of teaching and research within universities;
- conducting interviews with vice-chancellors, sustainability managers and financial managers in Australian universities to reach an insightful understanding of different competing aspects of accountability, to discover to what extent they are applied within universities and the weight given to each aspect within Australian universities;
- examining the level of social and environmental reporting within universities in other international contexts. Furthermore, future research can conduct comparative studies among universities in different countries;
- applying longitudinal studies in SEA using annual reports over five years or more to compare the levels and trends of social and environmental reporting in each university and within universities over time would enhance generalisability;
- considering other reporting media such as brochures and advertisements besides annual reports in order to obtain a complete representation of the level of social and environmental reporting;
- achieving different results by including graphs and pictures when conducting content analysis; and
- examining the university sector in different international contexts considering culture as one of the factors affecting the perception of accountability especially in developing countries.

## **5.7 Summary**

The current study provides insights into the relationship between accountability and one of the mechanisms of accountability, namely, social and environmental reporting. The results support the view of Buhr (2007) that social and environmental reporting follows a regular

development starting with social reporting, then environmental reporting and finally social and environmental reporting. Therefore, social and environmental reporting within Australian universities is in its infancy as it extensively focuses on social rather than environmental reporting. Annual reports are finite and costly documents. Henceforth, universities have to exercise due care when preparing annual reports and deciding the types of information and the weight importance of each item of information to include based on its own interpretation of accountability and on the priorities given to each accountability aspect.

Issuing stand-alone social and environmental reports is a practical solution to deal with these prioritising issues. Universities can produce stand-alone social and environmental reports while focusing on other accountability aspects within their annual reports. However, costs of preparing stand-alone social and environmental reports should be weighed against benefits (Coy et al., 2001) because high costs may be a reason for avoiding social and environmental reporting (Cormier & Gordon, 2001).

Universities should provide high levels of social and environmental reporting because they are accountable to society. Mandatory social and environmental reporting should be applied within Australian universities as an effective way of advancing accountability, and as a good step towards mandatory social and environmental reporting globally within universities.

**Table 5.1 Chapter 5 Research Objectives and Outcomes**

<b>Objectives</b>	<b>Outcomes (sections)</b>
To provide implications of the current study	The current study delivered implications for SEA researchers, regulators and universities.
To provide limitations of the current study	The current study presented limitations related to theory, research method, data collection method and context.
To provide avenues for future research	There are many avenues for future research by adopting a distinct theory and/or a different research method. Furthermore, SEA researchers may use other data collection methods and/or in diverse contexts.

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