CORPORATE SOCIAL RESPONSIBILITY – ATTITUDES, PERFORMANCE AND REPORTING: A COMPARATIVE STUDY OF AN EMERGING AND DEVELOPED ECONOMY

By

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CERTIFICATION

I certify that the work in this thesis represents the original work and contribution of the author, except as acknowledged by general and specific references, and this thesis has not been submitted for a higher degree to any other university or institution.

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ABSTRACT

The thesis (1) examines managerial attitudes towards social and environmental (S&E) accountability, (2) measures organisational S&E performance and (3) examines the extent of S&E disclosure. The purpose of the study is to compare, across Australia and India, the attitudes of managers toward S&E issues, S&E performance and determinants of S&E disclosure. This study argues for greater engagement by S&E accounting researchers with S&E practice, particularly within emerging economies. The study also illustrated that gaps and challenges still remain in improving the performance and extent of S&E disclosure from an emerging and developed economy perspective. This study is important in gaining an understanding of current and potentially future Indian managerial attitudes toward S&E accountability, performance and reporting. Given India's ongoing economic growth and development, it is critical that managers both understand the importance of CSR and enact policies and practices to reduce their organisations overall negative social and environmental impact. Economic growth is placing significant pressure on India's social infrastructure and environmental resources. As India continues to develop and interact in the global market, it is essential to understand Indian managerial attitudes on CSR, the CSR practices they put into place, and the extent of CSR information that they formally report, in order to gauge the extent to which social and environmental problems can be identified and reduced, and overall improvements made.

Using a questionnaire survey the first paper seeks to explore whether respondents from Australia and India, characterised by differing levels of social and economic development, vary in their **attitudes towards social and environmental accountability**. Findings indicate that Australian respondents are concerned about specific issues within the broad social accountability continuum, whilst Indian respondents are concerned about a range of issues surrounding social accountability. Indian respondents were stronger in their support of certain questions related to environmental attitudes than Australian respondents. Significant differences existed between the 318 respondents on 16 of the 34 questions.

The second paper uses four management and two operational performance indicators to measure selected components of **environmental performance** across various industries. Results imply that

corporate efforts in environmental management may not necessarily lead to good operational performance. Indian managers consider that corporate environmental performance (CEP[1]) is more dependent upon environmental management performance (EMP[2]) than environmental operational performance (EOP[3]). Australian managers consider both to be equally important in determining CEP.

Using 35 Global Reporting Initiative (GRI) based social and environmental indicators, the third paper evaluates **extent of reporting** across five industries presented in annual reports and indicates that S&E reporting by Indian organisations is lower than Australian organisations. The extent of total disclosure is significantly higher for large organisations in the Forestry and Paper, Industrial Engineering, Industrial Transport and Mining industries. Australian organisations with negative returns on total assets reported significantly higher social information than Indian organisations. The extent of reporting is unrelated to organisational age, external auditor size, and degree of multinational influence for both countries.

The extent of Indian SER lags behind that found in Australia. This indicates that the positive attitude and strong support for SEA by Indian managers was not reflected in their organisational policy and SER practice. Companies engaged on a social level in India, must take into account how national institutional systems and cultural traditions influence local CSR patterns. CSR initiatives can lead to failure and therefore result in a misallocation of resources. Barkemeyer (2007) stated that feedback loops that strengthen the interlinkages between home and host country can reduce both the misallocation of resources and the tendency of employiny CSR measures as a mere public relations tool.

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[1] Corporate environmental performance is the result of the environmental management activities of an organization. Lankoski (2000) defined corporate environmental performance as "the level of harmful environmental impact caused by a firm so that the smaller the harmful environmental impact the better the environmental performance and vice versa" (p.10).

[2] Environmental Management Performance: The implementation of strategies and operating practices to minimize environmental impact is known as environmental management, which refer to the technical and organizational activities undertaken by the corporation for the purpose of reducing their environmental impact upon the natural environment (López-Gamero, Molina-Azorín, & Claver-Cortés, 2009).

[3] Environmental Operational Performance is the company's performance measured against standard or prescribed indicators of effectiveness, efficiency, and environmental responsibility such as, cycle time, productivity, waste reduction, and regulatory compliance.

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List of Abbreviations

AME	Arab Middle East
ASEAN	Association of South East Asian Nations
BGMEA	Bangladesh Garments Manufacturer and Exports Association
CDCAC	Canadian Democracy and Corporate Accountability Commission
CED	Corporate Environmental Disclosure
CEP	Corporate Environmental Performance
CFA	Confirmatory Factor Analysis
CSD	Corporate Social Disclosure
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
DI	Disclosure Index
DSP	Dominant Social Paradigm
EEI	Eco-Efficiency Index
EEU	Estimated Energy Use
EGO	Estimated Gases Output
EGT	European Green Table
EI	Environmental Intensity
EICI	Environmental Intensity Change Index
EIO	Estimated Industrial Output
EMP	Environmental Management Performance
EOP	Environmental Operational Performance
EPE	Environmental Performance Evaluation
EPER	EU Polluting Emissions Register
EPI	Environmental Performance Indicator
EPM	Environmental Performance Measurement
EPR	Estimated Pollutant Releases
ERM	Environmentally Responsible Manufacturing
ERU	Estimated Resource Use
ET	Environmental Tracking
GDP	Gross Domestic Product
GRI	Global Reporting Initiative
IIP	Index of Industrial Production
ISAR	International Standards of Accounting and Reporting
MNC	Multinational Corporations
MPI	Management Performance Indicators
NEP	New Environmental Paradigm
NGO	Non-Government Organisation
NRA	Natural Resource Accounting
OCM	Operational Counter Measurement
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
OPI	Operational Performance Indicator
OS	Organisational System
PCA	Principal Component Analysis
PRTR	Pollutant Releases and Transfer Register
S&E	Social and Environmental
SAIL	Steel Authority of India Limited
SD	Standard Deviation
SEA	Social and Environment Accountability
SER	Social and Environmental Reporting
SME	Small and Medium Enterprise
SR	Stakeholder Relations
TBL	Triple Bottom-Line
TRI	Toxics Release Inventory
UNEP	United Nations Environmental Programme

Chapter 1

INTRODUCTION

1.1 Introduction

This thesis explores differences in managerial attitudes towards social and environmental accountability, environmental performance and reporting of social and environmental information between corporations in Australia and India. Section 1.2 provides both background and context to the theme of the thesis. Section 1.3 presents research questions and discusses the significance of the overall research problem. Section 1.4 presents a comprehensive, coherent overview of relevant literature. Section 1.5 presents the theoretical framework of the study. Section 1.6 discusses the distinct contribution the thesis makes to the literature. The final section, section 1.7, outlines how each self-contained research paper contributes to addressing the overall research problem.

1.2 Background and Context

In the area of Corporate Social Responsibility (CSR), several terms have been used to study the social and environmental related aspects of corporations. Despite these terms having been used as synonyms for each other, there remain distinct differences between them. Terms such as social and environmental accounting, CSR reporting, social reporting, environmental reporting, social and environmental accountability, corporate social performance, corporate environmental performance and environmental management performance, have all been used to describe the field of CSR.

Social and environmental accounting has been defined by Gray, Owen & Maunders (1987, p. ix) as:

> "…the process of communicating the social and environmental effects of organisations' economic actions to particular interest groups within society and to society at large. As such it involves extending the accountability of organisations (particularly companies), beyond the traditional role of providing a financial account to the owners of capital, in particular, shareholders. Such an extension is predicated upon the assumption that companies *do* have wider responsibilities than simply to make money for their shareholders".

Mathews (1993, p. 64) also states that social and environmental accounting is:

"Voluntary reporting of information, both qualitative and quantitative made by organisations to inform or influence a range of audiences. The quantitative reporting may be in financial or non-financial terms".

CSR reporting is viewed as the provision of information which enables others to determine whether an entity has fulfilled certain social responsibilities. Deegan (2007, p. 1263) defines CSR reporting as "the provision of information about the performance of an organisation in relation to its interaction with its physical and social environment". This would include information about an organisation's interaction with the local community; level of support for community projects; level of support for developing countries; health and safety record; training, employment and education programs; and environmental performance.

Both social and environmental reporting are two associated terms which are part of the overall concept of CSR. Gray, Bebbington & Walters (1993, p. 6) defined environmental reporting as; "covering all areas of accounting that may be affected by the business response to environmental issues, including new areas of eco-accounting". Social reporting provides information about an organisation's interaction with and associated impact on particular societies (Deegan, 2007). A broad definition provided by Mathews and Perera (1995, p. 364) is:

"…an extension of reporting into non-traditional areas such as providing information about employees, products, community service and the prevention or reduction of pollution. However, the term "social accounting" is also used to describe a comprehensive form of accounting which takes into account externalities...Public sector organisations may also be evaluated in this way, although most writers on the subject of social accounting appear to be concerned with private sector organisations".

Although there is no clear consensus on how to define the social responsibility of business, there are examples of what constitutes social responsibility by business entities.

"Today there is a general assumption that companies should contribute broadly to the communities in which they operate. This is logical, since corporate support of local communities helps to create an environment in which a company can conduct its business successfully". (Rio Tinto, Education with Communities, 2000). (Source: Deegan, 2007, p1263)

If we accept the view that management has accountability for the social and environmental performance of an entity, then we would accept that they have a duty to disclose social and environmental information. Accountability is the responsibility to provide a financial or non-financial rationalisation or considering those actions for which one is held responsible (Gray, Owen & Adams 1996). According to Gray et al., (1996) accountability entails two duties or responsibilities: they are (1) accountability to carry out specific actions or abstain from taking certain actions and (2) accountability to offer a justification for those actions. Different countries and cultures will have different views about the social responsibilities of entities. If we accept that individuals and cultures have different perspectives about corporate social responsibilities, this may explain to some extent why there are differences in social responsibility reporting practices across countries.

Corporate environmental performance is the result of the environmental management activities of an organization. Lankoski (2000) defined corporate environmental performance as "the level of harmful environmental impact caused by a firm so that the smaller the harmful environmental impact the better the environmental performance and vice versa" (p.10).

The implementation of strategies and operating practices to minimize environmental impact is known as environmental management, which refers to technical and organizational activities undertaken by the corporation for the purpose of reducing its environmental impact on the natural environment (López-Gamero, Molina-Azorín, & Claver-Cortés, 2009).

1.3   Significance of the Overall Research Problem

The overall theme of the thesis is "A Comparative Study of Corporate Social Responsibility in an Emerging and Developed Economy". The primary research question of the study is-

What are the differences in corporate social responsibilities between Australia and India?

The primary research question explores the difference in social and environmental responsibilities between Australia and India, and is operationalised in three areas, namely differences in: (i)

attitudes; (ii) performance measurement and (iii) reporting practices. The thesis aims to answer the following research questions using legitimacy theory.

1. What are managerial attitudes towards social and environment accountability in Australia and India?

2. How do managerial attitudes towards social and environment accountability differ between Australia and India?

3. To what extent do companies in various industries measure Environmental Performance across various indicators developed by Xie and Hayase (2007)?

4. How does Environmental Performance Evaluation in Indian corporations differ from their Australian counterparts?

5. Is corporate social and environmental reporting related to certain company characteristics, such as industry and size?

6. Do differences exist regarding corporate social and environmental reporting between selected companies in Australia and India?

Figure 1.1 shows the linkage of different questions with (i) attitudes; (ii) performance measurement and (iii) reporting practices and with over all CSR practice.
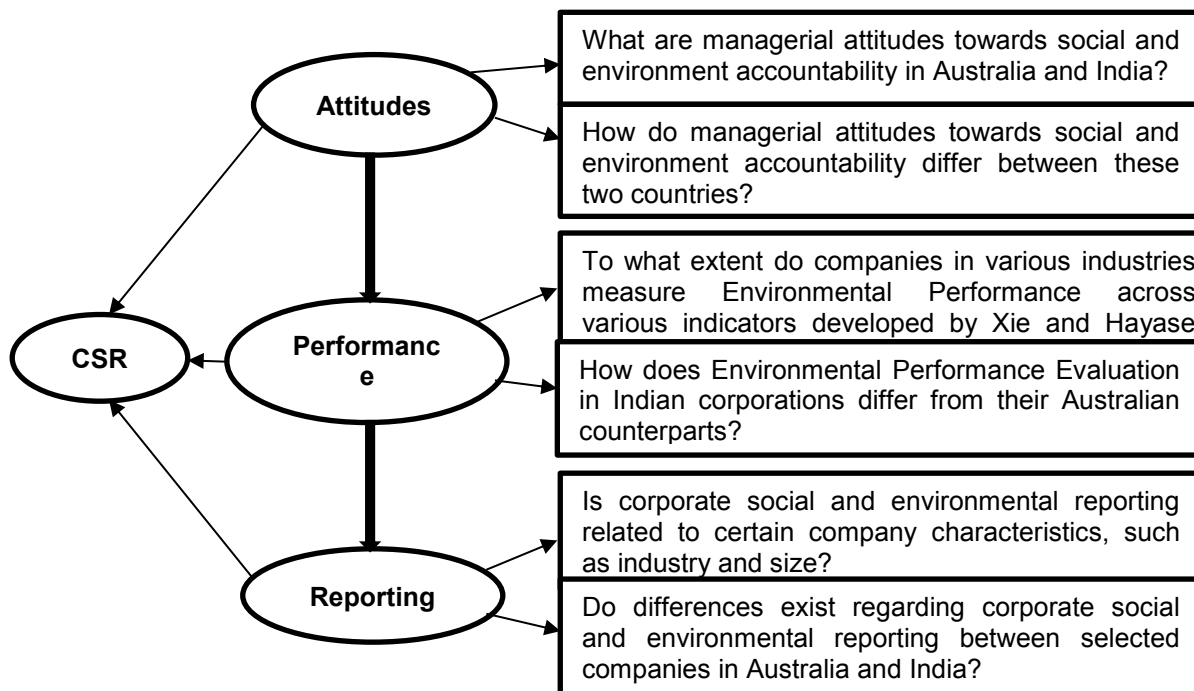
Figure 1.1 Conceptual figure demonstrating the linkage of different questions with elements of CSR

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Attitudes towards social and environmental accountability may influence the type of social and environmental reporting and their measure of performance. Positive managerial attitudes toward social and environmental accountability will be reflected in their action toward business policy formation and how social and environmental performance is measured. Positive attitudes will likely lead managers to include social and environmental issues in their strategic business decisions. There is also a close relationship between social and environmental performance and social and environmental reporting (SER). Clarkson, Richardson & Vasvari (2008) documented a positive relationship between environmental performance and reporting. The authors concluded that consistent with socio-political theories, companies with low emissions disclose more information. Chapple, Overell & Clarkson (2011) reported that Australian companies in high-polluting industries with poorer performance (i.e. higher emissions) disclosed more.

Stakeholder theory suggests that firms must manage the interests of consumers and wider society along with satisfying their shareholders and must maintain their legitimacy to ensure survival (Bebbington, Larrinaga-Gonza´lez & Moneva-Abadı´a, 2008a). Failure to comply with these expectations may have detrimental effects on company operations, such as consumer boycotts, pressure from lobby groups and negative publicity (Wilmshurst & Frost 2000). Therefore companies need to manage their social and environmental image. One component of this image involves the reporting of positive social and environmental performance in the hope it will influence stakeholder perceptions (Cormier & Gordon, 2001; Deegan, Rankin & Tobin, 2002). Alternatively, disclosure of positive actions may be necessary for bad environmental performers who seek to dilute the influence of their negative performance. Large companies and companies belonging to socially and environmentally sensitive industries may also incur greater pressure as they receive higher media coverage and accordingly feel that reporting will circumvent future adverse action by socially and environmentally concerned stakeholders and regulators (Bewley & Li, 2000).

The thesis aims to answer differences in (1) attitudes using questions one and two, (2) performance using questions three and four, and (3) reporting practices using questions five and six.

An attitudinal study will enable a better understanding of how ethics, education, law and its enforcement, help shape attitudes towards environmental management, and why there may be diversity in attitudes towards environmental management across different industries. The research will also help us better understand managerial attitudes towards social and environmental accountability and the influence of these attitudes upon business responsiveness. Balasubramanian, Kimber and Siemensma (2005) found that social responsiveness in India has increased within the last five years. They also found that this development was due to 'improved literacy', 'enlightened professionalism', 'social awakening' and governmental legislation and regulation. This research will shed light on the association of this increased social responsiveness and the direction of Indian managerial attitudes towards SEA.

Understanding environmental performance enables organisations to develop strategies to reduce environmental impact. Having an environmental mechanism will increase the long term value of the firm; hence increasing competitiveness, profitability and share price. Understanding environmental performance will also help law makers implement effective legislation.

Social and environmental reporting increases transparency which improves public image and relations with stakeholders (Robbins, Bergman, Stagg & Coulter, 2003). It also increases relationships with customers and employees (Baker, 2001) which in turn increases the company's value of intangible assets (Ernst & Young, 2002). Increased transparency enables organisations to allocate resources more effectively and efficiently, and reduces regulatory cost and decreases the firm's legal liability (Robbins et al., 2003), thereby improving the competitiveness, profitability and share price of the organisation (CERES, 2002).

Researchers have undertaken comparative studies across developed economies. However no attempt has been made to do comparative studies between a developed industrialized country and an emerging economy. This research will undertake a comparative study between a developed country (Australia) and an emerging economy (India[4]). This research will therefore contribute to the

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[4] India is one of the most important emerging economies in Asia after China in terms of economic growth. The economy has grown by 6.7 per cent in 2008-09. According to Indian Central Statistical per cent in July 2009, Organisation industrial output as measured by the index of industrial production (IIP) clocked an annual growth rate of 6.8% (www.ibef.org).

literature regarding comparative and Indian based social and environmental reporting (SER) practices as well as Australian and Indian managerial attitudes toward social and environment accountability (SEA). The research will also provide an overview of Australian and Indian social and environmental performance measurement; the extent of SER, and analyse the antecedents of SER in a developed and emerging economy.

This study is important in gaining an understanding of current and potentially future managerial attitudes toward social and environmental accountability, environmental performance and the reporting practices of selected environmentally intensive industries in Australia and India. Understanding Indian CSR practice is critical because India is one of the most important emerging economies in Asia in terms of economic growth, with significant urbanisation, a large populace, and a growing presence in the global market. The thesis will help in understanding the relative extent of Indian social and environmental practices. Social and environmental information is crucial to various Indian government organisations and foreign investors. Embedding social and environmental criteria within the supply chain of companies, including its procurement practices, and adopting international quality standards and benchmarks, are essential in order to attract foreign direct investment, and export goods to countries and markets which require sustainable practices, This will in future require Indian government authorities to both enact and enforce regulations that improve social and environmental conditions to a level ideally on par with their developed counterparts. Foreign investors may also use social and environmental information to gauge Indian operating standards, in order to establish and operate sustainable businesses in India.

1.4   Overview of Relevant Literature

CSR has been explored across a wide domain including, the costs and benefits of reporting, social justice issues, 'internal factors that manipulate the degree of disclosure, the different national rules pertaining to disclosure of social and environmental information, triple bottom line reporting, the relationship between profitability and liquidity on reporting, sustainability accounting, stakeholder pressure, management perceptions about various issues, and reporting quality (Gray et al., 1995a). This section integrates literature from studies on; (1) managerial attitudes towards social and

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environmental accountability, (2) social and environmental performance measurement and (3) social and environmental reporting. Section 1.4.1 presents literature from studies on managerial attitudes towards social and environmental accountability, further categorizing it into studies on (i) developed economies and (ii) developing economies. Section 1.4.2 presents literature from studies on social and environmental performance measurement. Finally studies on social and environmental reporting, again categorized into (i) developed economies and (ii) developing economies are presented in section 1.4.3. Brief descriptions of these studies are provided in Tables 1.1 to 1.5.

1.4.1 Studies on Attitudes towards Social and Environmental Accountability (SEA)

Recently CSR researchers have moved on to examine managerial and other stakeholder perceptions of SEA more directly by using methods such as questionnaires or in depth interviews (Belal & Owen, 2007; Islam & Deegan, 2008; Owen, 2008; Wang & Yang, 2011; Yakovleva & Vazquez-Brust, 2012). Existing SEA research is reviewed under two categories: those based in Western developed economies and SEA studies in emerging economies. This categorisation is in response to differences in the level of socio-economic, (Xiao et al., 2005) and technological development (Williams & Pei, 1999) between these two groups of economies. Because of these differences the reasoning underlying corporate attitudes in emerging economies could be somewhat different to that in the developed economies. Brief descriptions of SEA studies are provided in Tables 1.1. These studies are closely related with paper one of this study. These important previous studies are briefly discussed below in two sections. Section 1.4.1A briefly discusses studies on western developed economies and section 1.4.1B discusses studies on developing economies, especially South and South East Asian economies.

1.4.1A SEA Studies on Western Developed Economies

Attitudes toward social and environmental issues have been solicited mainly in Western developed countries such as Spain (Corraliza & Berenguer, 2000); Australia (Cummings, 2008); USA (Fukukawa, et al., 2007; Shafer, 2006); Ireland (O'Dwyer, 2002); Sweden (Arvidsson, 2010) and the UK (Petts et al., 1998). Most studies (Arvidsson, 2010; Cummings, 2008; Michael et al. 2010; Petts et al., 1998; Shafer, 2006) have examined attitudes towards environmental issues.

Fukukawa, et al. (2007) examined attitudes among experienced MBA students towards environmental as well as social issues. In doing so, they examined the relationship between personal values and support for social and environmental accountability.

Table 1.1 Summaries of Major Previous Studies on Attitudes towards SEA

	Methods	Brief Description	SER Studies
Studies on developed economies	Questionn-aires and interviews	Predominantly qualitative studies which directly explore managerial attitude towards SEA	Arvidsson, 2010; Corraliza & Berenguer, 2000; Cummings, 2008; Fukukawa, Shafer & Lee, 2007; Michael, Echols & Bukowski, 2010; O'Dwyer, 2002; Petts, Herd & O'Heocha, 1998; Sangle, 2010; Shafer, 2006; Stanaland, Lwin & Murphy, 2011; Yakovleva & Vazquez-Brust, 2012.
Studies on developing economies	Questionn-aires and interviews	Predominantly qualitative studies which directly explore managerial attitude towards SEA	Balasubramanian, Kimber & Siemensma, 2005; Belal & Owen, 2007; Islam and Dellaportas 2011; Islam & Deegan, 2008; Jaggi & Zhao, 1996; Kim & Park, 2011 Kuasirikun, 2005; Lawrence, & Roper, 2004; Liangrong & Song, 2008; Lodhia, 2003, Rahaman, 2000; Rahaman, Teoh & Thong, 1984; Tian, Wang & Yang, 2011.

Two points: (1) government should adopt and enforce formal SEA standards; and (2) corporations and executives should be held accountable for the social and environmental impacts of their actions, were clearly evident through exploratory factor analysis. The results specified that the universalism value type is not associated with support for government enforcement of accountability standards but is positively associated with general support for SEA (Fukukawa, et al., 2007). Support for government enforcement of SEA standards is significantly impacted by gender (female participants supported enforcement). Yakovleva and Vazquez-Brust (2012) examined attitudes toward and suitability of CSR for addressing social, environmental and economic issues associated with mining multinationals in Argentina. The authors found that attitude toward and understanding of CSR differs between mining managers in Argentina and their global headquarters. The authors also reported that firms in Argentina negotiate the economic, environmental and legal aspects of CSR with government, whilst philanthropic and ethical responsibilities are defined and negotiated by the headquarters centrally.

Cummings (2008) and Shafer (2006) found that managers supported the new environmental paradigm (NEP[5]). Arvidsson (2010) also reported a distinct trend shift towards greater focus on CSR in corporate communication by investigating the attitude of management teams in large firms in Sweden. They also found that firms engage in CSR activities for avoiding the negative impacts rather than motivated by their social accountability. Cummings (2008) indicated significant differences towards environmental attitudes among Australian, Chinese and Indonesian respondents. Australian respondents were more cautious of supporting a candid view on environmental issues but Chinese respondents favoured a more centralised approach to decision making regarding the environment. It was also found that the age factor was a possible influence on respondent beliefs (25-34 years age group supported strongly). Shafer (2006) argued that commitment to the support for ideologies such as free enterprise, private property rights, economic individualism, and unlimited economic growth, poses a threat to progress in imposing greater standards of corporate environmental accountability in Western societies. The study suggested that attitudes toward these ideologies play a significant role in the formation of attitudes toward environmental accountability.

Sangle (2010) investigated the attitude towards the adoption of proactive environmental strategies. The author reported that institutional pressure, environmental investments and productivity enhancement initiatives are the significant factors affecting the adoption of proactive environmental strategies, not the desire for social and environmental accountability itself. With an objective to better understand employee attitudes toward the environment, and their influence on business responsiveness, Petts, et al., (1998) explored the links between management and non-management attitudes to the environment and organisational responses within small and medium enterprises (SMEs). The study found strong positive attitudes about the environment and suggested that personal attitudes might be exploited to motivate, activate and help operationalise business responses to the environment.

In summary, few studies have investigated managerial attitudes towards SEA from a developed economy perspective. Again, most of these studies have focused only on the USA, Europe and

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[5] Widely used measure of pro environmental orientation developed by Dunlap and Van Liere (1978).

Australia. The studies reported a positive managerial attitude but this attitude was mainly due to direct or indirect economic benefit not related to accountability.

1.4.1B SEA Studies on Emerging Economies

Attitudes have been solicited in Bangladesh (Belal & Owen, 2007, Islam & Deegan, 2008), Thailand (Kuasirikun, 2005), China (Liangrong & Song, 2008; Tian et al., 2011), Hong Kong (Jaggi & Zhao, 1996) and Ghana (Rahaman, 2000; Rahman et al., 2004). In studies based in emerging economies, management attitudes and interpretations of SEA have been explored by Jaggi and Zhao (1996), Kuasirikun (2005); Belal and Owen, (2007), Islam & Deegan, 2008; Liangrong and Song (2008); Kim & Park, 2011 and Tian et al., 2011. Jaggi and Zhao (1996), investigating the attitudes of managers and management accountants on the environmental reporting practices in Hong Kong, found that although managers were concerned about the protection of the environment in Hong Kong, this concern was not reflected in voluntary environmental reporting. They also commented that management accountants did not show much enthusiasm to convert their attitudes into action. Similar attitudes were found by Kuasirikun (2005) who evaluated attitudes toward current accounting practices and social and environmental accounting among Thai managers and management accountants. The author argued that a change in attitude will have to involve a change in the nature of the Thai accounting profession and suggested ways in which the future development of SEA practice might be given further momentum within a specific Thai context.

Kim and Park (2011) examined the attitudes of public relations students towards CSR and reported that respondents consider CSR an effective reputation management strategy for prospective employees not solely as an accountability mechanism. Liangrong and Song (2008) investigated how Chinese senior executives and middle level managers perceive and interpret SEA, to what extent firms' characteristics influence managers' attitudes towards SEA, and whether their values in favour of SEA are positively correlated to a firms' economic performance. They found an overall favourable view, but the nature of their attitude was linked to entrepreneurs' gaining economic benefits. They also found that managers of firms smaller in size, state-owned, and located in poorer regions are more likely to strongly support SEA. Manager's personal characteristics were not significantly correlated with their firms' economic, environmental and social performance. Tian

et al. (2011) examined the attitude of consumers towards CSR in China. The authors found that product categories influence consumer responses to CSR. The authors concluded that consumers who were middle aged with a medium income showed more positive attitudes towards CSR.

Both Belal and Owen (2007) and Islam and Deegan (2008) have explored the attitudes of managers of Bangladeshi companies. Using 23 semi-structured interviews, managerial perceptions of Bangladeshi organisations had been studied by Belal and Owen (2007). The results propose that a desire to manage powerful stakeholder groups was the main drive following Bangladeshi SER. They commented that "outside forces" and pressure from international buyers are the eventual motivating force behind rising SER practices in Bangladesh. Using legitimacy theory as a framework, the drive for Bangladeshi social reporting had been re-examined by Islam and Deegan (2008). Studying annual report content of the Bangladesh Garments Manufacturer and Exports Association (BGMEA), the authors concluded that since the early 1990s BGMEA faced pressure from international buyers regarding their social performance. This pressure helped formulate their social reporting policy. The results are similar to that of Belal and Owen (2007). Belal and Owen (2007) also claim that social policy and reporting in the garment industry is compelled by such pressure. Rahaman (2000) explored senior management attitudes towards SEA in Ghana, and found that most of the Ghanaian organisations made very little or no reporting on environmental issues and the principal determinants of such attitudes were pressures from international lending agencies (such as the World Bank and the IMF), management philosophy, government regulation and the desire to achieve listing on international stock markets. Rahman et al. (2004) explored this issue further in a later study and found that the main driving force behind SEA in the Volta River Authority was external pressure from international lending institutions such as the World Bank.

In summary, few studies have investigated managerial attitudes towards SEA. The minute amount of literature looking at emerging economies suggests that corporate attitudes could be somewhat different from that found in developed economies. Belal and Momin (2009) argued that the difference could be because of the differences in the level of socio-economic (Xiao et al., 2005) and technological development (Williams & Pei, 1999) between these two groups of countries. Various authors (Belal & Owen, 2007; Islam & Deegan, 2008; Rahman et al. 2004) argued that consumer pressure or pressure from non-government organisations or civil society groups are the

driving force for SEA in organisations in developed economies. In contrast, the driving force of SEA in organisations in emerging economies which depend on foreign loans and aid, could be external pressure from international lending institutions (Rahman et al. 2004), pressure from particular stakeholders (such as international buyers) to upgrade their social performance which shaped their social policy (Belal & Owen, 2007), pressure from outside forces via parent company's instructions, and pressure from international buyers (Islam & Deegan, 2008). Table 1.2 summarises the key variables and related studies on emerging economies.

Table 1.2 Summary of the key variables and related study on emerging economy

Key Variable	Study
Differences in the level of socio-economic	Xiao et al., 2005.
Technological development	Williams & Pei, 1999.
External pressure from international lending institutions	Rahman et al. 2004.
Pressure from particular stakeholders	Belal & Owen, 2007.
Pressure from outside forces via parent company's instructions and pressure from international buyers	Islam & Deegan, 2008
Age and level of income	Tian et al. 2011
Effective reputation management strategy	Kim & Park, 2011

Although scant research has attempted to describe SEA in Australia and for certain emerging economies in Asia such as Bangladesh, China and Thailand, managerial attitudes towards SEA in India have not been researched. Therefore, using data from Australian and Indian companies, the first paper of this study aims to examine Australian and Indian managerial attitudes towards SEA to answer the following two research questions.

1. What are managerial attitudes towards social and environment accountability in Australia and India?

2. How do managerial attitudes towards social and environment accountability differ between these two countries?

This first paper was presented at the 34th European Accounting Association (EAA) Annual Congress in Rome, April 2011, and the International Finance Conference in India, January 2011. A paper "Attitudes Toward Environmental Responsibility within Australia and India: A comparative Study" by Asit Bhattacharyya (90%) & Lorne Cummings (10%), based on the PhD, has been Published in the *Journal of Environmental Planning and Management*. A paper "Attitudes Towards Environmental Accountability in an Emerging Economy Setting - Evidence from India", an article on managerial attitudes using data only from the Indian Biotech & Pharmaceutical industry, related to

the PhD through the concepts used has been published in the *Journal of Asia-Pacific Centre for Environmental Accountability,* June 2011, *17(2,)*:51-74. Another paper "Managerial assertiveness toward Environmental Responsibility – Evidence from Australian Environmentally Sensitive Industries" by Asit Bhattacharyya (90%) & Lorne Cummings (10%) has been submitted to *Journal of Asia Pacific Business.*

1.4.2   Studies on Environmental Performance Measurement

Various authors (Curkovic, 2003; Hall & Wagner, 2012; Ilinitch, Soderstrom & Thomas, 1998; Jung, Kim & Rhee, 2001; Sharma, 2009; Wagner, 2009; Xie & Hayase, 2007; Young & Welford, 1998) have addressed the measurement and evaluation of CEP. The studies can be divided into two categories. The first focuses on developing EPM models for effective internal management decision making, and constructing appropriate Environmental Performance Indicators (EPIs) accordingly. The second attempts to develop an EPM suitable for third-party evaluation, seeking to make the model comparable across companies from different sectors or industries. The various EPM models established by researchers are outlined in Table 1.3.

Most EPM models focus on helping companies develop EPIs for internal management and external reporting. Whilst these EPM models and EPIs are useful and valuable for business managers to identify areas of success and failure, and to make corresponding decisions (Azzone, Noci, Manzini, Welford & Young, 1996), they are not appropriate for drawing comparisons across companies (Young & Welford, 1998) because there is a lack of agreement on what and how to measure. Only a few studies, Wells et al. (1992); Eckel and Fisher (1992); Wolfe and Howes (1993); Young and Welford (1998); Thoresen (1999) and Sharma (2009) have made significant contributions to internal EPM management. Although the necessity and significance of constructing an EPM model suitable for comparison was advocated by various authors, previous studies have seldom been conducted in this field (Azzone et al., 1996; Curkovic, 2003; Metcalf et al., 1995). Kolk and Mauser (2002) commented that few studies have focused on EPM in a broad sense but there was no consensus on what, how and where to measure. Ilinitch et al. (1998) noted that no single approach addresses common dimensions of CEP in a formal theoretical or systematic empirical way.

Table 1.3 Summaries of Major Previous Relevant Studies

Authors (year)	Purpose	Dimensions of EPM model
Wells, Hochman & O'Connell (1992)	Internal management	(1) Process improvement; (2) environmental results; (3) customer satisfaction.
Wolfe and Howes (1993)	Internal management	Ditto.
Eckel and Fisher (1992)	Internal management	(1) Policy and objectives; (2) performance measures; (3) systems to collect and report information; (4) on-going monitoring.
Metcalf, Williams, Minter & Hobson (1995)	Effective management	(1) Environmental management system; (2) EPM system.
Azzone et al. (1996)	External-oriented reporting	(1) State of the environment; (2) corporate environmental policy; (3) environmental management system; (4) environmental impact of products and processes.
Azzone and Noci (1996)	Internal decision making	(1) External environmental effectiveness; (2) company's environmental efficiency; (3) company's 'green' image; (4) firm's environmental flexibility.
Young and Welford (1998)	Internal management	(1) Environmental policy; (2) environmental management system; (3) environmental impacts of processes, products/services.
Thoresen (1999)	Internal management	(1) Product lifecycle performance; (2) management system performance; (3) manufacturing operations performance.
European Green Table (1993; in Welford, 1996)	Third-party evaluation	(1) Environmental management EPIs; (2) facility and operation EPIs.
Ilinitch et al., (1998)	Third-party evaluation	(1) Organisational system; (2) stakeholder relations; (3) regulatory compliance; (4) environmental impact.
Jung et al. (2001)	Third-party evaluation	(1) General environmental management; (2) input; (3) process; (4) output; (5) outcome.
Curkovic (2003)	Third-party evaluation	(1) Strategic system; (2) operational system; (3) Information system; (4) results.
Xie & Hayase (2007)	Third-party evaluation	(1) Organisational system, (2) Stakeholder relations, (3) Operational countermeasures; (4) Environmental tracking; (5) Input; (6) Output.
Sharma (2009)	Third-party evaluation	(1) Organization Design, (2) Information and Benchmarking (3) Environmental Impact Reduction
Wagner (2009)	Third-party evaluation	(1) Stakeholder pressure, (2) Process innovation, (3) Product innovation and (4) Input
Hall and Wagner (2012)	Third-party evaluation	(1)Organisational system, (2) Regulator, (3) Public, (4) Markets (5) Input; (6) Output, (7) Risks, (8) Image.

they are not appropriate for drawing comparisons across companies (Young & Welford, 1998) because there is a lack of agreement on what and how to measure. Only a few studies, Wells et al. (1992); Eckel and Fisher (1992); Wolfe and Howes (1993); Young and Welford (1998); Thoresen (1999) and Sharma (2009) have made significant contributions to internal EPM management. Although the necessity and significance of constructing an EPM model suitable for comparison was

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advocated by various authors, previous studies have seldom been conducted in this field (Azzone et al., 1996; Curkovic, 2003; Metcalf et al., 1995). Kolk and Mauser (2002) commented that few studies have focused on EPM in a broad sense but there was no consensus on what, how and where to measure. Ilinitch et al. (1998) noted that no single approach addresses common dimensions of CEP in a formal theoretical or systematic empirical way.

Few studies have sought to establish comparable EPM models. The earliest effort was made by the European Green Table (EGT). The EGT model in Welford (1996) comprises two areas: environmental management EPIs, and facilities and operations EPIs. This EPM model, based on self-assessment, can both enhance internal decision making and provide the elements for consistent communication with external stakeholders (Welford, 1996).

Based on previous studies (Lober, 1996; Wood, 1991), Ilinitch et al. (1998) developed an integrated matrix consisting of process/outcome and internal/external axes which encompass four dimensions: organisational system, stakeholder relations, regulatory compliance and environmental impact. Subsequently, after each empirical test, Ilinitch et al. (1998) found that there are five CEP dimensions since stakeholder relations are two dimensional. However, they did not analyse the relationships among the five dimensions. The model by Jung et al. (2001) consists of five categories: general environmental management, input, process, output and outcome. However Jung et al. did not apply this model to measure actual CEP; instead, they used it to evaluate the disclosure level of the environmental information of 39 firms. Analysis of efficiency in major firms has shown that the number of employees has a critical influence on determining overall firm efficiency. Based on the Malcolm Baldrige National Quality Award criteria, Curkovic (2003) established a measurement system consisting of four factors, (i.e., strategic system, operational system, information system and results) by which to measure Environmentally Responsible Manufacturing (ERM). After empirically testing the constructs and measures by employing Confirmatory Factor Analysis (CFA), he found that the dropout rate of the measurement items he generated to operationalise the four factors was high and he concluded that this research stream was in its early stages. Curkovic's (2003) study was the first attempt at creating a consensus regarding how ERM is measured. Curkovic's (2003) study has developed and validated a preliminary measurement instrument for ERM. Therefore, he suggested that alternative EPM

models should be developed, validated and compared with existing models to clarify the foundations of EPM. To answer the question of what should be measured for third-party EPE, Xie and Hayase (2007) developed an Environmental Performance Measurement (EPM) model consisting of Environmental Management Performance (EMP) and Environmental Operational Performance (EOP), and hypothesised that EMP be measured by four management performance indicators (MPIs: organisational system, stakeholder relations, operational countermeasures and environmental tracking) and EOP be measured by two Operational Performance Indicators (OPIs: inputs and outputs). Further, to answer the question of how to enable third-party EPE to be comparable across companies from different (sub-) sectors, Xie and Hayase (2007) proposed the use of the Environmental Intensity Change Index (EICI) as a measure of OPIs.

Sharma (2009) investigated the impact of organization design variables on environmental performance. The author found that organization design variables, information and benchmarking directly influence proactive environmental practices. The availability of information about environmental technologies, practices, regulations, societal expectations etc. partially mediates the direct influence of organization design variables in driving proactive environmental practices in organizations. Hall and Wagner (2012) examined the role of innovation for the link between the integration of strategic issues and the environmental performance of firms. Using structural equation modeling the authors reported that there is a positive association between the integration of strategic issues and the environmental performance of firms. They concluded that differences in the link between integration and environmental performance depend on the type of business model or innovation pursued. Wagner (2009) also investigated the nature of the association between corporate sustainability and competitive advantages and whether this association can be influenced positively by integrating environmental performance with the general strategy of the firm. Using cluster analysis the author found a significant link between environmental performance with innovation and competitive advantages for four different dimensions of competitive advantage

Based on the indicators developed by Jaggi and Freedman (1992), Tyteca, Carlens, Berkhout, Hertin, Wehrmeyer & Wagner (2002) ranked some companies across electricity and the pulp and paper segment. They have tested the possible factors which affect rankings, and establish that rankings are significantly influenced by process types. Using the eco-efficiency index (EEI),

Momoshima (2004) as cited in Xie and Hayase (2007) rated 23 chemical Japanese companies and concluded that comparison is appropriate and valid within the same sub-sector but difficult across different sub-sectors.

The concept of Environmental Intensity (EI), defined as the ratio of environmental impact to production is used by The Jaggi–Freedman model (Tyteca et al., 2002), and the concept of EEI, defined as the ratio of sales or returns on operation to environmental impact is used by the eco-efficiency model. These two instances indicate that EPIs resulting from the eco-efficiency models and the Jaggi–Freedman model cannot be used to compare companies from different (sub-) segments (Xie & Hayase, 2007).

Regarding the comparison of EPIs, few authors (e.g., Tyteca, 1997; Zaim, 2004) have attempted to use a standardised technique. An account for the presence of pollutants in the form of undesirable outputs, (productive efficiency theory) is the base of this method. Using self-defined, weighted coefficients, all the related aspects (input, output, pollutants etc.) taken into account are combined to produce a quantity ranging from zero to one. Zero indicated inefficiency whilst one indicated efficiency (Olsthoorn, Tyteca, Wehrmeyer & Wagner, 2001; Tyteca, 1996). A non-linear programming technique was the basis of the process. Results derived from this method are very responsive to the number of issues and sample units measured. Nevertheless this technique has numerous advantages such as lucid and evident standardisation, elasticity, and no previous weight determination requirement (Callens & Tyteca, 1999; Olsthoorn, Tyteca, Wehrmeyer, & Wagner, 2001). This technique is restricted to contrasting comparable components as well, such as plants or firms inside a business sub-sector (Callens & Tyteca, 1999). Contrasting the actual quantifiable CEP with encoded objectives or criteria is suggested by Dias-Sardinha and Reijnders (2001), Habler and Reinhard (2000) and Young and Welford (1998). Nevertheless, as a number of organisations do not set targets against which to measure their performance, this approach may not be possible.

Xie and Hayase (2007) propose to use the Environmental Intensity Change Index (EICI) as a measure of OPIs to enable third-party EPE comparable across companies from different (sub-) sectors. Although empirical tests confirmed that the EICI and the evaluations based on it are

comparable across companies from different sub-sectors, it is not feasible for implementation in the emerging, as well as developed economies, because the required data is not completely available. Most research work to date in the area of Corporate Environmental Performance measurement (Curkovic, 2003; Hall & Wagner, 2012; Ilinitch et al., 1998; Metcalf, et al., 1995; Nakao, Amano, Matsumura, Genba & Nakano, 2007; Wagner, 2009; Xie & Hayase, 2007) has been undertaken in the USA, Europe and Japan. Few academic studies have been undertaken in this area in Australia and Emerging Asian economies, leading to the conclusion that the process of measuring Corporate Environmental Performance (CEP) is still in its developmental stage (Curkovic, 2003). This is, at least partly, due to the lack of academic research in this field (Kolk & Mauser, 2002) and the logistical difficulties in undertaking research in developing economies. Many organisations have adopted a range of measures to evaluate CEP. But existing measures and ratings have an inherent risk of a vicious circle as pointed out by Ilinitch et al., (1998) that as "…rankings are based partly upon reputation and reputation is based partly upon rankings", this may inhibit a stakeholder's ability to interpret such data and make purposeful comparisons across companies and even confuse the public and reduce the credibility of these measures and ratings (Ilinitch et al., 1998, p. 385; Xie & Hayase, 2007).

Scant research has been undertaken in the area of social and environmental performance measurement in Australia and India. Therefore, using data from Australian and Indian companies, the second paper of this study aims to evaluate Australian and Indian social and environmental performance to answer the following two research questions.

1. To what extent do companies in various industries measure Environmental Performance across various indicators developed by Xie and Hayase (2007)?
2. How does Environmental Performance Evaluation in Indian corporations differ from their Australian counterparts?

This second paper was presented at the 9th Australasian CSEAR conference in Albury in December 2010. A paper "Corporate Environmental Performance Evaluation in Emerging Economies: Current Practices and Future Direction" by Asit Bhattacharyya (100%) based on the preliminary findings of this PhD has been published in *The International Journal of Environmental,*

Cultural, Economic and Social Sustainability, 2011, 7(2): 253-270. Another paper "Evaluating Corporate Environmental Performance: Evidence from Australian Environmentally Sensitive Companies" by Asit Bhattacharyya (90%), Lorne Cummings (10%), based on the PhD, has been submitted to the *Business Strategy and Environment*.

1.4.3 Studies on Social and Environmental Reporting (SER)

Prior studies on SER have focused predominantly on developed countries, including the USA, UK, and Australia. Their focus was on either the annual report or other sources (e.g., stand-alone environmental report, internet material, organisation's website, newspaper etc.). There are a few review papers (Deegan & Soltys, 2007; Owen, 2008; Parker, 2005) which have explored previous SER literature and the historical development of SER. These reviews provide practical explanations of SER practices and offer insights mainly from a developed economy viewpoint. Therefore, existing SER research is reviewed under two categories; (i) SER studies on Western developed economies and (ii) SER studies on Emerging Economies. Brief descriptions of these categories are provided in Tables 1.4 and 1.5.

1.4.3A SER studies on Western Developed Economies

The majority of SER studies focus on Western countries (Adams & Zutshi, 2004; Deegan & Gordon, 1996; Gamble, Hsu, Jackson, & Tollerson, 1996; Gray, Owen & Adams, 1996; Guthrie & Parker, 1990; Hackston & Milne, 1996; Ho & Taylor; 2007). Brief descriptions of studies related to SER within developed economies are provided in Table 1.4. Adams and Zutshi (2004) Brammer and Pavelin (2008), Branco and Rodrigues (2008); Clarkson, Overell & Chapple (2011), de Villiers and van Staden (2011), González-Benito and González-Benito (2010), Hackston and Milne (1996), Ho and Taylor (2007), Smith et al. (2010) have all studied the extent and determinants of SER. These studies are closely related with paper three of this study. These important studies are briefly discussed below.

Adams and Zutshi (2004) identified factors that affect organisational SER, and commented that the most concerning feature of reporting on social, ethical and environmental issues is the lack of completeness when referenced to GRI guidelines. Organisational reports were leaving out details

regarding their impact on communities and the environment which are material to key stakeholder groups.

Table 1.4 Summary of Major SER studies on Developed Economy

Categories [6]	Brief Description	Studies
Studies related to SER practices	Predominantly quantitative studies which directly or indirectly explore SER by measuring the extent of reporting.	Adams & Zutshi, (2004); Ali, Ahmed, & Henry, (2004); Baker, (2001); Burritt, (2002); Clarkson, Li, Richardson & Vasvari,(2008); Clarkson, Overell & Chapple, (2011); Deegan, (2002); Deegan & Gordon, (1996); Deegan & Rankin, (1996); Gray, (2006); Gray et al., (1996); Orij, (2010); Schaltegger & Burritt, (2000); Solomon & Lewis, (2002); Tinker & Gray (2003);
Comparative studies	Predominantly quantitative studies which directly or indirectly explore SER practices of various developed economies	Adams, Hill & Roberts, (1998); Guthrie & Parker, (1990); Gamble et al., (1996); Holland & Foo, (2003); Jaggi & Low, (2000); Newson & Deegan, (2002); Nyquist, (2003); Perry & Sheng, (1999); Vanstraelen, Zarzeski, & Robb, (2003).
Studies related to extent and determinants of SER	Quantitative studies examined the extent and determinants of SER	Adams and Zutshi (2004) Brammer & Pavelin, (2008); Branco & Rodrigues, (2008); Clarkson, Li, Richardson & Vasvari, (2011); de Villiers & van Staden, (2011); González-Benito & González-Benito, (2010); Hackston & Milne, (1996); Ho & Taylor, (2007).
Related to Literature review	Reviewed previous SER literature in its historical context	Deegan & Soltys, (2007); Gray, Kouhy & Lavers, (1995a); Owen, (2008); Parker, (2005); Schaltegger and Burritt (2010).

Brammer and Pavelin (2008) examined the factors associated with the variation in the extent and quality of voluntary environmental reporting based on 450 listed firms in the UK. They focused on the five facets of environmental disclosure quality such as environmental policy, initiative, improvement, audit and target. The authors reported that the firm's size and the nature of its business activities had a positive relationship with the extent and quality of environmental reporting. They also reported that media exposure has no relationship with voluntary environmental reporting. Examining forty nine annual reports and websites, Branco and Rodrigues (2008) reported that

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[6]This categorisation is subjective and is not ideal. Some studies can be classified into both categories. For example, Parker (2005) has been classified in first category as I consider that is more appropriate but it can be in any of the four categories.

company size and media exposure are both positively related to social responsibility reporting. Clarkson et al. (2011) investigated the extent and the nature of firms' environmental reporting using 51 Australian firms that reported to the National Pollutant Inventory (NPI). The authors documented a positive relationship between environmental performance and environmental reporting. The authors concluded that consistent with socio-political theories, firms having greater levels of emissions (a higher pollution propensity) undertake more environmental reporting. De Villiers and van Staden (2011) investigated environmental reporting undertaken by firms in annual reports and on corporate websites in relation to a long-term (bad) and a short-term (crisis) environmental performance measure. The authors found that the extent of environmental reporting across the two forms of media outlet is conditional. Firms with an environmental crisis are more likely to report more environmental information on their website and firms with a poor environmental reputation report more environmental information in their annual reports. Hackston and Milne (1996) indicated that the majority of disclosures were declarative and positive in nature. Results also show that both firm size and industry membership were significantly associated with the amount of disclosure, whilst profitability was not. Ho and Taylor (2007) investigated the triple bottom-line (TBL) disclosures of 50 of the largest US and Japanese companies. Results indicated that the extent of reporting is higher for firms with a larger size, lower profitability, lower liquidity, and for firms with membership in the manufacturing industry.

Adams et al., (1998); Guthrie and Parker (1990); Gamble et al. (1996); Holland and Foo, (2003); Jaggi and Low (2000); Nyquist, (2003); Perry and Sheng (1999); Vanstraelen et.al. (2003) all compared the SER practices of different developed economies.

Adams et al. (1998) examined corporate social reporting practices for a sample of 150 annual reports in six European countries. Findings indicate that the amount and nature of social disclosure varied significantly across Europe, and that firm size and industry membership were important determinants of social disclosure levels in all six countries. Guthrie and Parker (1990) indicated that the incidence of social reporting appeared to be much higher in the United States, and in the United Kingdom, than in Australia. Gamble et al. (1996) indicated that extremely diverse practices were observed among and within sample countries and these practices were not applied consistently over time. Overall, companies operating in countries with a high social conscience

and/or developed capital markets voluntarily disclosed more environmental information. Holland and Foo (2003) compared the corporate environmental reporting practices of the United Kingdom and United States. They primarily found that even though environmental legislation in the United States was more prevalent than in the United Kingdom, more firms in the UK sample published stand-alone environmental reports or included a separate environmental section than US firms. They also found that most US firms reported the information in the 'management discussion and analysis' section of the annual report, whereas a separate section for environmental information was the most prevalent way of reporting in the United Kingdom. Comparing Western experience with environmental reporting to that in Singapore, Perry and Sheng (1999) found a low commitment to environmental reporting amongst Singaporean organisations. They commented that the low level of environmental reporting in Singapore is symptomatic of the gap between the conscience of environmental responsibility in developed Western countries and the absence of it in newly industrialised economies.

In summary, most empirical studies on SER have focused on Anglo Celtic based countries such as the USA, UK, Canada, Australia and New Zealand, or countries in continental Europe. Most of the reviewed studies used a content analysis method. These are predominantly quantitative studies which explore SER by measuring the extent of reporting and SER determinants. These studies measured the extent of reporting contained within annual reports, company websites and sustainability reports. Some studies compared the SER practices of different countries but these comparisons were mainly restricted to developed countries.

1.4.3B SER Studies on Emerging Economies

Belal and Momin (2009) believed that SER has the potential to promote equality, social justice, accountability and transparency; and hold business organisations accountable. Several developing countries deal with the extensive corruption, poverty, inequality, social exploitation and human rights violations. Pachauri (2006) argue that organisations (local and multinational corporations) functioning in developing countries are accountable to attend to some of these 'evils'. Organisations may perhaps discharge their accountability through transparent SER. Table 1.5 presents the brief descriptions of studies related to SER within developing economies.

Table 1.5 Summary of major SER studies on Emerging Economies

Category	Brief Description	SER Studies
Studies related to extent of SER and their determinants	Predominantly quantitative studies which indirectly explore SER by measuring the extent of reporting. This category also includes studies which examined the determinants of SER.	Auora & Puranik, (2004); Batra, (1996); Belal, (2000); Choi, (1998, 1999); Craig & Diga, (1998); de Villiers & van Staden, (2006); Disu & Gray, (1998); Gao, Heravi, & Xiao, (2005); Haniffa & Cooke, (2005); Huang & Kung, 2010; Jamali & Mirshak, (2006); Kamla, (2007); Kisenyi & Gray, (1998); Kuasirikun & Sherer, (2004); Li & Zhang, (2010); Mahadeo, Hanuman & Soobaroyen, (2011); Sahay, (2004); Raman, (2006); Rashid & Lodh, (2008); Thompson & Zakaria, (2004); Xiao, Gao, Heravi, & Cheung, (2005); Yin & Zhang, (2012)Williams & Pei, (1999).

SER have been studied in Bangladesh (Belal, 2000, 2001; Imam, 2000; Belal & Owen, 2007; Islam & Deegan, 2008; Rashid & Lodh, 2008), India (Aurora & Puranik, 2004; Batra, 1996; Raman, 2006; Sahay, 2004), Malaysia (Haniffa & Cooke, 2005; Thompson & Zakaria, 2004), Thailand (Kuasirikun & Sherer, 2004), China (Li & Zhang, 2010; Gao et al. 2005), Tiwan (Huang & Kung, 2010) and Ghana (Rahaman, 2000; Rahman et al., 2004).

Based on a longitudinal analysis of CSR practices in the Steel Authority of India Limited (SAIL), Batra (1996) proposed a SER framework for Indian organisations. The author observed inconsistencies in Indian SER practices arising from lack of uniformity in presentation and also due to lack of "conventions, postulates and axioms to guide social accountants in drafting accounts" (p. 43). The study perceived the need for a suitable social reporting framework in view of the inconsistency of social reporting practices in India. Sahay (2004) indicated that, in India, environmental reporting in general is unsystematic, piecemeal, inadequate and non-comparable. He commented that environmental reporting in India is still in its infancy and is largely public relations oriented. It does not provide relevant information to stakeholders or a database for continual improvement. The study pointed out that the reason for inadequate environmental reporting is most likely that less pressure is applied to Indian organisations by stakeholders including environmental groups, the general public and government. Whilst environmental legislation was perhaps 'adequate', what was needed most was enforcement. Raman (2006)

conducted an exploratory study to identify how senior management perceives and reports social and environmental information in India. Using content analysis, the study looked at the chairman's message section of the annual reports of the top 50 organisations in India. Results indicated that 80% of the sample made a reporting related to product/service improvement followed by human resources reporting. Not more than 52% of the organisations mentioned their involvement in community activities or other activities like education and health services. The study found that the nature and the extent of reporting vary with a large emphasis being placed on product/service improvement and development of human resources.

From the Bangladeshi perspective, Belal (2000) found that 27 out of 30 companies undertook some form of environmental reporting. The author indicated that compared to previous reporting, the number of organisations disclosing environmental information had increased. In another study, Imam (2000) also confirmed this increasing trend, which reported that all sampled companies disclosed some form of human resource information. Others disclosed information on community (25%), environmental (22.5%) and consumer (10%) activities. The study concluded that the overall extent of reporting was insufficient and pitiable. Exploring a socio-political and economical perspective, Belal (2001) explained the social reporting practices of Bangladesh firms and reported a higher level of reporting within the "employee" category. Rashid and Lodh (2008) examined the influence of board composition (measured by the percentage of independent directors) and ownership structure on CSR. The results indicate that board composition is a significant influence, but not so ownership structure. Based on these findings Rashid and Lodh (2008) suggest mandatory CSR regulations in Bangladesh.

Mahadeo et al. (2011) investigated the social reporting practices of an African developing economy (Mauritius) based on the annual reports of listed firms from 2004 to 2007. They found that the extent and variety of social reporting significantly increased after the introduction of the local corporate governance code. The authors also confirmed that firm size and leverage positively influence the extent of social reporting but profitability and industry affiliation are not related to social reporting. Analysing environmental reporting in the annual report of Malaysian, Singaporean, Indonesian, Philippines and Thailand firms, namely five Association of South East Asian Nations (ASEAN) countries, Craig and Diga (1998) concluded that, in general, ASEAN organisations

emerged as hesitant in disclosing information about environmental programs, government subsidies and labour and employment activities, which were perceived to be socially or politically sensitive. They also concluded that ASEAN corporate reporting was "oriented strongly towards the information needs of capital providers, rather than the needs of a broader set of stakeholders (including employees, government agencies, and the general community)".

Kuasirikun and Sherer (2004) and Kamla (2007) have analysed the extent of SER, highlighting the political and socio-economic background of developing countries. Kuasirikun and Sherer (2004) examined the extent and quality of reporting in Thailand. Using a critical perspective and taking account of the local context, the study concluded that a variety of aspects of the reporting process in Thailand were disabling, and in general, accounting practices fell short of their potential utility as a facilitating communication device. An overview of SER practices in the Middle East (ME) was offered by Kamla (2007). She examined the extent and quality of social reporting of 68 annual reports from nine ME countries. The author concluded that the quality of social reporting is similar to that in the developed world, such as the UK. The result indicated country specific differences among themes included within social reporting, which reflect each economy's own social priorities. However key subjects covered in social reporting by organisations in ME countries were consistent with the usual coverage of European countries. Xiao et al. (2005) contrasted the SER practices between a developed economy (UK) and an emerging economy (Hong Kong) and established that the extent of SER of sampled Hong Kong organisations was lower than that of UK organisations. The authors argued that differing levels of social and economic development were the reasons for this difference.

Many other researchers explored the extent of reporting to describe SER practices in various developing economies such as, Korea (Choi, 1998, 1999), Nigeria (Disu & Gray, 1998), South Africa (de Villiers, 1999) and Uganda (Kisenyi & Gray, 1998). Many of these studies used some form of content analysis, constructed in developed countries, to study the extent of SER within developing countries. Belal and Momin (2009) stressed that vast differences exist between countries regarding the issues outlined inside every category although it may appear that the broad categories of CSR practices are alike. Kuasirikun and Sherer (2004) mention that value-added

statements in employee reporting are an important issue in Bangladesh, but it is not common in the majority of Asian countries or the UK.

In summary, few studies on SER have been undertaken within a South Asia context. Most of the reviewed studies from the context of emerging economies used a content analysis method. These are descriptive studies and measured the extent of reporting contained within annual reports. Bebbington and Unerman (2008) and Guthrie, Cuganesan, and Ward (2008) raised concerns that an exclusive focus on annual reports might not capture all SER issues. It is argued "that stand alone and/or internet reporting (among other forms of reporting) has now become much more common in practice" (Bebbington & Unerman, 2008, p. 2). Belal and Momin (2009) argued that though this scrutiny may be legitimate from a Western developed economy context, given differences in the levels of socio-economic (Welford, 2005; Xiao et al., 2005) and technological development (Williams & Pei, 1999), it might not be embraced within an emerging economies context.

Prior studies (Burritt, 2002; Rezaee, Szendi & Aggarwal, 1995; Schaltegger & Burritt, 2000) have articulated the need for standardisation of SER practices and use of the GRI framework (Burritt, 2002; Ho & Taylor, 2007; Holland & Foo, 2003; Raman, 2006; Sahay, 2004; Schaltegger & Burritt, 2000). Although literature has highlighted the need for standardisation of SER practice using GRI guidelines, no published work has sought to examine the extent of SER based on these widely accepted GRI (2002) social and environmental reporting guidelines in India. Using selected GRI (2002) social and environmental performance indicators, the third paper of this study seeks to answer the following two research questions.

1. Is corporate social and environmental reporting related to certain company characteristics, such as industry and size?
2. Do differences exist regarding corporate social and environmental reporting between selected companies in Australia and India?

This third paper was presented at the 9th Australasian CSEAR conference in Albury in December 2010 and in an internal seminar at the University of Newcastle in March 2011. A paper "Factors

Associated with the Social & Environmental Reporting of Environmentally Sensitive Australian Companies", by Asit Bhatacharyya (100%), based on the PhD, and has been accepted for publication in the *Australasian Accounting Business and Finance Journal*. The article is scheduled to appear in vol 8(1) (March, 2014). Furthermore, a second paper "Adherence to the Global Reporting Initiative's (GRI) Social and Environmental Disclosure Requirements by Indian Organisations", by Asit Bhattacharyya (100%) based on preliminary findings from the PhD has been published in the *Journal of the Asia-Pacific Centre for Environmental Accountability*, 2008, 14(4): 12-26. Another paper "Legitimacy and Social & Environmental Reporting in an Emerging Economy context: Evidence from India" by Asit Bhattacharyya (80%), Lorne Cummings (10%) & Robert Staib (10%), based on the PhD, is under further review at the *Pacific Accounting Review Journal* after being requested to be revised and re-submitted in the first round.

1.4.4 Motivation for the Thesis

Most empirical studies on SER have focused on Anglo Celtic based countries such as the USA, UK, Canada, Australia and New Zealand, or countries in continental Europe. Few studies on SER have been undertaken within a South Asia context. Few studies have investigated managerial attitudes towards SEA from a developed economy perspective. Again, most of these studies have focused only on the USA, Europe and Australia. The minute amount of literature looking at emerging economies suggests that corporate attitudes could be somewhat different from that found in developed economies. Belal and Momin (2009) argued that the difference could be because of the differences in the level of socio-economic (Xiao et al., 2005) and technological development (Williams & Pei, 1999) between these two groups of countries. Various authors (Belal & Owen, 2007; Islam & Deegan, 2008; Rahman et al. 2004) argued that consumer pressure or pressure from non-government organisations or civil society groups are the driving force for SEA in organisations in developed economies. In contrast, the driving force of SEA in organisations in emerging economies which depend on foreign loans and aid, could be external pressure from international lending institutions (Rahman et al. 2004), pressure from particular stakeholders (such as international buyers) (Belal & Owen, 2007), pressure from outside forces via parent company's instructions, and pressure from international buyers (Islam & Deegan, 2008).

Researchers have undertaken comparative studies of developed economies but limited attempts have been made to do comparative studies between a developed industrialised economy and an Asian emerging economy. This research will undertake a comparative study between a developed country (Australia) and an emerging economy (India). Comparing Australian and Indian CSR practice is critical because India is one of the most important emerging economies in Asia after China in terms of economic growth,[7] with significant urbanisation, a large populace, and a growing presence in the global market. Despite these factors, Indian CSR practices are far behind those found in developed economies (Balasubramanian, Kimber and Siemensma 2005). The Australian economy is one of the most developed market economies in the world and the most productive in South Pacific, with a steady economic growth.[8] Australia is looking to strengthen trade relations with India. The study will help in understanding Indian CSR practices. CSR information is crucial to various Indian government organisations and foreign investors. Foreign investors may also use CSR information to gauge Indian operating standards, in order to establish and operate sustainable businesses in India.

1.5 Contribution the Thesis makes to the Literature

The thesis provides a detailed analysis of CSR examining accountability, performance measurement and reporting from an emerging economy perspective and compares it with a developed economy. The study uses GRI performance indicators, a combined research method (primary and secondary data) for improved outcome, and includes social as well as environmental issues to contribute to both fields of CSR literature. The study argues for greater SEA researcher engagement with SER practice, particularly in an emerging economy context. The study illustrates the gaps and challenges that remain in improving the quantity and quality of SER from an emerging and developed economy perspective.

- The majority of CSR work limits its focus to Western countries; relatively few attempts have been made to research CSR within a non-western and emerging South & South-

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[7] The Indian economy grew by 6.7% in 2008–2009 and 7.2% in 2009–2010 (www.finmin.nic.in).India is the fourth largest economy in terms of purchasing power parity, tenth most industrialised economy and has the third largest pool of scientific and technical manpower when ranked against the world's economies.
[8] Australian economy grew by 1.4% in 2009 and 2.5% in 2010.

East Asian context (Kuasirikun, 2005). This research will therefore contribute to the literature by examining CSR within an important emerging economy; India.

- Researchers have undertaken comparative studies of developed economies but limited attempts (Cummings, 2006; Sonnenfeld & Mol, 2006) have been made to do comparative studies between a developed industrialised economy and an Asian emerging economy. This research will therefore contribute to the literature on comparative and Indian-based social and environmental attitudes, performance measurement and reporting.

- Environmental research dominates more recent SER published output (Parker, 2005) and social research has not been given much importance. According to Parker (2005) only 10% of the published social and environmental reporting work up to 2003 has emphasized both social and environmental components. Although recent research has emphasized the social component, gaps remain.

This research includes social as well as environmental issues to contribute to both fields of literature.

- Few studies exist on managerial attitudes towards SE accountability and environmental performance measurement within a developed and emerging economy context. In India, there is no published work on managerial attitudes. Little research has been undertaken in the area of Corporate Environmental Performance measurement in Australia. Priyadarshini and Gupta (2003, p. 13) commented that "Environmental performance among (the) Indian corporate is typically ad hoc and restricted to compliance aspects, and even these are not fully addressed".

This research will contribute in these under researched area of attitude and performance measurement.

- This thesis combines a questionnaire survey with collection of annual reports and use of content analysis for more robust empirical evidence. Guthrie, (2005), suggested that a combination of either sources of SER and /or method of data collection will provide more robust empirical evidence of SER practices. Parker (2005) reported that only 1% of SEA

publications during 1988 to 2003 used combined methodologies. This thesis will also contribute in this area.

- This study uses the GRI (2002) social and environmental framework. Although prior studies (Burritt, 2002; Schaltegger & Burritt, 2000) have articulated the need for standardisation of SER practice and use of the GRI framework (Ho & Taylor, 2007; Holland & Foo, 2003; Raman, 2006) no published work has sought to examine SER based on GRI (2002) social and environmental guidelines in Australia and India.

This study is important in gaining an understanding of current and potentially future managerial attitudes toward social and environmental accountability, environmental performance and the reporting practice of selected environmentally intensive industries in Australia and India. Understanding Indian CSR practice is critical because India is one of the most important emerging economies in Asia in terms of economic growth, with significant urbanisation. According to the annual report of the ministry of finance (Government of India), the Indian economy has grown (in GDP) 6.7% in 2008-09 and 7.2% in 2009-2010 (www.finmin.nic.in).

The rapid economic and urban growth of many developing countries is typically associated with environmental degradation such as industrial pollution, wastewater treatment deficiencies, water shortage and related health problems (Daniere & Takahashi, 1999). The rapid economic growth, industrial development and increasing population are placing pressure on social and environmental resources in India.

Understanding environmental performance will contribute to developing a more thorough environmental management system. It will enable organisations to develop strategies to reduce environmental impact if they have proper systems that measure performance. It will allow organisations to identify problem areas that result in high costs to the organisation. So it will be easy for organisations to reduce cost and risk. Having an environmental mechanism will increase the long term value of the firm; hence increasing competitiveness, profitability and share price. Understanding environmental performance will also help law makers implement effective legislation.

This study uses a hierarchical framework identifying the key factors that characterise CEP measurements (Figure 3.1). In this study CEP consists of Environmental Management Performance (EMP) and Environmental Operational Performance (EOP). Further, it has been hypothesised that EMP be measured by four Management Performance Indicators (MPIs) and EOP be measured by two OPIs (inputs and outputs). These indicators and their measurement items could cover the entire range of activities critical to CEP.

Wood (1991) defined Corporate Social Performance (CSP) as 'a business organisation's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's social relationships'. In a broad sense, CEP is a component of social performance (Xie & Hayase, 2007) and there is no established framework (except GRI social performance indicators) to measure social performance. That is why the study did not measure social performance separately in the second paper. However, selected GRI social performance indicators have been used in the third paper to analyse the extent of SER.

1.6   Theoretical Framework

Legitimacy theory and institutional theory offer essential theoretical frameworks for social and environmental accounting research. Based on system-oriented theories we believe that any organisation influences society and in turn, the organisation is also influenced by the society in which it operates. Chen and Roberts (2010) highlighted that to decrease ambiguity and to guarantee continued existence and expansion, organisations work within such interdependencies. The objective of these theories is same to a great extent although they have different levels of perception, specificity, and promise (Chen & Roberts, 2010). In explaining how organisations make sure continued existence and expansion is their common interest, they all stress that competence and financial performance might be essential but not enough for continued existence of organisations.

While there is no generally accepted grand theory for explaining CSR practices, recent research within CSR literature includes various alternate theories, the major one being legitimacy theory

(Branco & Rodrigues, 2008; Deegan, 2002, Mahadeo, et al., 2011, Claasen & Roloff, 2012). According to Gray (1995a), legitimacy theory has an advantage over other theories in that it provides disclosing strategies that organisations may adopt to legitimate their existence that may be empirically tested. Legitimacy theory explains the association between accounting and society from an organisation's perspective. An organisation will voluntarily report on activities if management perceives that the particular information is demanded by the societies in which it operates (De Villiers & Van Staden, 2006). Social expectations vary between countries and this variation is likely influenced by cultural variables (Van Der Laan Smith, Adhikari, & Tondkar, 2005). Institutional theory is also capable of explaining the influence of culture and CSR. Proponents of institutionalism depict legitimacy as a result of congruency between the organisation and its cultural environment, with a greater focus on the cognitive rather than the evaluative side (Amran & Devi, 2008). This point demonstrates that institutional and legitimacy theories are intimately interconnected. Legitimacy and institutional theories are closely interconnected and both are applicable as a theoretical framework for social and environmental studies, capable of explaining different societal expectation. As legitimacy theory has an advantage over other theories (Gray, 1995a), this thesis therefore adopted legitimacy theory as the theoretical foundation.

Several studies have directly or indirectly examined legitimacy theory and its applicability to the CSR practices of companies (for example, Belal & Owen 2007; Branco & Rodrigues, 2008; Campbell et al., 2003; Deegan & Gordon, 1996; Deegan & Rankin, 1996; Gray et al., 1995; Islam & Deegan, 2008; Mahadeo, et al., 2011; Mobus, J.L., (2005); O'Donovan, 2002 and Roloff & Cyrlene, 2012). The results of these studies generally tend to acknowledge the applicability of legitimacy theory in understanding the voluntary CSR practices of companies. Chen and Roberts (2010, p. 662) suggested that-

> "Legitimacy theory is more appropriate when research primarily focuses on how organisations manage their public image, while the social expectation of organisations is generally assumed without reference. The origin of expectation may not necessarily be identifiable, and similarly, the targeted audience of such legitimation may not be explicitly named (an example of which could be voluntary reporting). Institutional theory is considered a proper choice for studies that investigate a specific corporation structure, system, program, or practice that is commonly implemented by other

similar organisations as a part of normal business operations (such as the employer matching gift program)".

Legitimacy theory (Lindblom, 1994; Suchman, 1995) focuses on whether the value system of an organisation is consistent with the value system of society, and whether the objective of organisations is to meet social expectations. The theory states that legitimacy is a status or condition that is achieved when the value system of an organisation is congruent with the value system of the larger society. Suchman defines legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574).

Depending on the purpose of legitimation, there are primarily two levels of legitimacy – institutional and organisational (or strategic) (Chen & Roberts, 2010). The process of seeking institutional legitimacy is directly related to institutional theory. The concepts of stakeholder theory are more relevant to the process of strategic legitimacy. Chen & Roberts (2010) stated that the theories have a shared interest to explain how organisations survive in a changing society. Mobus (2005) stated that the dynamics that generate external pressures on an organisation is the emphasis of the institutional legitimacy. Suchman (1995) mentioned that the institutional aspect views legitimacy as a set of norms and beliefs held by relevant stakeholders. Organisations do not extract legitimacy from the environment; rather cultural definitions determine how the organisation is understood and evaluated by the stakeholders (Suchman, 1995). The institutional viewpoint of legitimacy theory is one of the leading theories in CSR studies reporting studies as used by Chen and Roberts (2010), Deegan (2002) and Patten and Crampton (2004). Branco and Rodrigues (2008) mentioned that the focal point of institutional perspective of legitimacy theory is social legitimacy. The acceptance of an organisation by its social environment and outer components are referred by social legitimacy. Social legitimacy is defined by Dowling and Pfeffer (1975) as the degree to which an organisation conforms to the predominant social norms and values. They outline (ibid, p.27) three ways of becoming a legitimate organisation.

1. The organisation can adapt its output, goals, and methods of operation to conform to fundamental definitions of legitimacy.

2. Through communication the organisation can attempt to alter the definition of social legitimacy so that it conforms to the organisation's present practices, output, and values.

3. Through communication the organisation can attempt to become identified with symbols, values, or institutions which have a strong base of social legitimacy.

Branco and Rodrigues (2008) commented that "the importance of social legitimacy comes from the theoretical assumption that companies are embedded in the social environment in which they operate, and that their performance and expectations are affected by the environment. The company's success, even survival, is determined by this interface".

Suchman (1995) differentiates three types of legitimacy, such as pragmatic, moral and cognitive legitimacy. He proposes that these types co-exist and reinforce one another in most settings. Pragmatic legitimacy derived from the people's perception that the organisation is beneficial for themselves. It is thus a form of "exchange legitimacy" (Suchman 1995, p. 578) that serves the needs of self-interested individuals. Favourable influence or exchange relation to stakeholder's self-interest gains pragmatic legitimacy. Pragmatic legitimacy dynamics are often observed with stakeholders that directly interact with an organisation. The connection between the organisation and stakeholders may include broad social interactions. Pragmatic legitimacy behaviours may focus on delivering favourable outcomes and stakeholder interests. The dynamics may focus on incorporating tools into policy-making and/or adopting component measures of performance (Suchman, 1995, p. 578). By addressing stakeholder expectations companies can obtain pragmatic legitimacy. Pragmatic legitimacy results from the calculations of self-interested individuals who are part of the organisation's stakeholder constituency, e.g., the key stakeholders or the wider public (Suchman, 1995). It is a challenge for the organisation to influence individuals' calculations, persuade key stakeholders and the wider society about the usefulness of its output, procedures, structures and leadership behaviour (Ashforth & Gibbs, 1990). This can be accomplished in various ways, e.g., by direct benefits to constituents, by meticulous stakeholder management, by inviting stakeholders to participate in corporate decision-making, or through influential public relations. Stakeholder management literature has widely acknowledged this fact. Some authors (Mitchell et al. 1997; Savage et al. 1991) suggest to prioritise powerful vocal stakeholders but others (Carroll and Buchholtz 2006; Freeman et al. 2010) warn managers not to overlook the importance of more vulnerable stakeholder groups to ensure a company's legitimacy in the longer term.

Cognitive legitimacy is the ''mere acceptance of the organisation as necessary or inevitable based on some taken-for-granted cultural account'' (Suchman 1995, p. 582). For example, companies in the food industry are perceived as more legitimate than companies in the tobacco industry because of the different nature of their products. Cognitive legitimacy is not investigative by nature. The third way described by Dowling and Pfeffer (1975) (i.e. through communicating a link between the firm and legitimate symbols, values and organisations) can influence cognitive legitimacy. This could be attained through a marketing approach that creates this cognitive link. Cognitive legitimacy emerges, when the society regards an organisation and its output, procedures, structures and leader behaviour as inevitable and necessary. This acceptance is based on mostly public assumptions (Palazzo & Scherer, 2006, p. 72). It is difficult for the organisation to directly and strategically influence and manipulate perceptions as cognitive legitimacy operates mainly at the subconscious level (Oliver, 1991; Suchman, 1995). Therefore, in many cases cognitive legitimacy can be managed only indirectly and only to a minor degree (Oliver, 1991).

Moral legitimacy depends on the organisational activities relative to the social contract and the positive evaluations of the organisation. Suchman (1995) stated that moral legitimacy "rests not on judgments about whether a given activity benefits the evaluator, but on judgments about whether the activity is 'the right thing to do". It "reflects beliefs about the activities which effectively promote social welfare" (p. 579). A morally legitimate company will be judged by its accomplishments, its work in accordance with socially accepted procedures, its leadership and its capacity to perform well. Palazzo and Scherer (2006) believe that moral legitimacy results from a conscious moral judgement on ''the organisation's output, procedures, structures and leaders'' (p. 73). They propose that moral legitimacy is socially created and has been considered and used to justify a company's actions, practices, structures and results. Environmental public interest groups, small investors and the general public concerned with environmental performance evaluate organisational legitimacy from a moral perspective. These groups remain important sources of legitimacy because of their potential to unite and challenge organisational legitimacy. They even create a legitimacy crisis although they largely have indirect interaction with an organisations stakeholder.

Moral legitimacy is the "true meaning of the word legitimacy" (Koppell, 2008, p. 182), and is sometimes based on the evaluation of outputs and consequences of organisational action. Automobile emission standards are an environmental performance example of socially constructed means to evaluate consequences (Suchman, 1995, p. 580). From such a perspective, SER is seen as one of the strategies used by companies to seek approval of their activities from society. Legitimacy theory suggests that SER provides an important way of communicating with stakeholders, to convince them that the company is fulfilling their expectations (even when actual behaviour varies with some of these expectations) (Branco & Rodrigues, 2008).

Suchman distinguishes different strategies and related tactics for securing legitimacy status by recognising three broad legitimacy objectives: gaining, maintaining, and repairing legitimacy. Lindblom (1994) identified four courses of action an organisation can take to obtain, or maintain, legitimacy. The four strategies of legitimation are; (1) to educate and inform its stakeholders about actual changes in organisational activities and performance; (2) seek to change the stakeholders perceptions without changing its actual behaviour; (3) seek to influence perception by distracting attention away from the issue of concern to other associated issues; or (4) seek to modify external expectations about performance. In explaining dissimilarity of CSR reporting practices across the world these strategies are potentially important. Ashforth and Gibbs (1990), Hearit, (1995) and Tilling and Tilt (2010) provided an organisational legitimacy model consisting of four phases – establishing, maintaining, extending and defending.

Establishing legitimacy

Suchman (1995) referred this phase as gaining legitimacy. This first phase represents the early stages of a firm's development and tends to revolve around issues of competence but the organisation must be aware of "socially constructed standards of quality and desirability as well as perform in accordance with accepted standards of professionalism" (Hearit, 1995, p. 2). The main test here is to gain acceptance from the 'relevant publics' in the early years of organisational life. This could be achieved by making sure that its products and services are in congruence with the expectations of stakeholders. Mobus (2005) suggested that an organisation may have to define the concept, negotiate the parameters of legitimacy and update stakeholders to view it and its activities

as substantially worthy of legitimacy status. Incongruence might lead to a loss of legitimacy with traditional stakeholders such as suppliers, customers, creditors, etc.

Maintaining Legitimacy

Maintaining legitimacy is a continuous process, requiring relatively low-effort. In this phase "once conferred by the stakeholders, legitimacy tends to be taken largely for granted" as constituents' scrutiny is relaxed; and they are satisfied "with evidence of ongoing performance and with periodic assurances of 'business-as-usual" (Ashforth & Gibbs, 1990, p. 183). However the maintenance of legitimacy is not as easy as it may appear. Legitimacy is a dynamic construct. Community expectations are not static; they change over time. Organisations have to be responsive to the environment in which they operate to continue to be legitimate. An organisation could lose its legitimacy even if it has not changed its activities from activities which were previously deemed acceptable (Deegan et al., 2002, p. 319 - 20). Legitimacy requires maintenance response not because of the crisis conditions but more from inconsistencies or modifications in cultural definitions (Mobus, 2005).

Extending legitimacy

The need of extending legitimacy arises when an organisation enters new markets or changes the way of interaction with its current market. Organisations have to extend it when they enter into new activities or practices due to changing social expectations. For example, a firm which previously maintained legitimacy by CSR disclosures within annual reports may move into a comprehensive stand-alone reporting regime in an attempt to extend its legitimacy. Legitimation activities in this phase are often "intense and proactive as management attempts to win the confidence and support of wary potential constituents" (Ashford and Gibbs, 1990, p. 180).

Defending legitimacy

Legitimacy may be threatened by an internal or external incident and require defence. Defending occurs when organisational legitimacy is threatened leading to legitimacy gap or crisis. This last phase of legitimacy attracted most of the attention of social and environmental accounting researchers. Previous scholars (Cho, 2009; Deegan et al. 2000) have shown that in the event of crisis organisations would increase CSR disclosures to minimise or repair the damage to its

reputation or image. Dowling and Pfeffer (1975) provided that organisations under a defence phase may adopt three legitimation techniques: adapt outputs, communicate to change social expectations, and communicate to identify with symbols or institutions of legitimacy (e.g. GRI Guidelines). Lindblom (1994), a key paper cited by many Social and Environmental Accounting researchers is also relevant to this phase. She suggested four legitimation strategies: (i) educate the public of organisational change, (ii) change social expectations without changing firm behaviour, (iii) manipulate perceptions by distracting to unrelated issues and (iv) change external expectations of its performance that a company can use to defend its legitimacy.

Institutional Theory

Although Institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) concentrates on the relationship between organisations and their environment, particularly the stability and continued existence of organisations, the theory is similar to legitimacy theory. Institutional theory robustly stresses that to achieve stability and improve endurance prediction, organisations can integrate institutionalized standards and policies. Chen and Roberts (2010) stressed that compliance to these recognized institutional outlines is the passageway to legitimacy and support. Institutional theory has been utilised by Kuasirikun (2005) and Islam and Dellaportas (2011) to examine attitudes to social and environmental accounting. Milne and Patten (2002) emphasize that legitimation is not merely tactical, but institutional as well as character based. Proponents of institutionalism depict legitimacy as a result of congruency between the organisation and its cultural environment, with a greater focus on the cognitive rather than the evaluative side (Amran & Devi, 2008). This point demonstrates that institutional and legitimacy theories are intimately interconnected.

Although this thesis has not used Stakeholder theory, it is worth noting that stakeholder theory is actually an umbrella term that is used to describe various theories that have the stakeholder as the focus of the analysis but which can range from normative to positive (managerial) perspectives. Stakeholder theory recognizes that legitimacy is subjectively evaluated according to the value standards of stakeholder groups, rather than the value system of the larger society. Stakeholder theory (Clarkson, 1995; Freeman, 1984) is also concerned with the effect of the business environment on organisations. However, stakeholder theory focuses on the relationships between

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organisations and its various stakeholders who constitute the environment as opposed to other theories (such as legitimacy) which treat the "environment" as singular. This holds true because stakeholder theory recognizes that the impact of each stakeholder group on the organisation is different, and the expectations of different stakeholder groups are diverse and sometimes conflicting. Thus, the way of receiving support/approval from different influential stakeholders depends upon the ability of organisations to balance these conflicting expectations. Freeman (1984) emphasizes that the willingness to communicate and compromise is the required solution to stakeholder approval and support.

Legitimacy and institutional theories are closely interconnected and both are applicable as a theoretical framework for social and environmental studies and capable of explaining different societal expectations. As legitimacy theory has an advantage over other theories and has been used by various researchers (Deegan, 2002; Mobus, 2005; Branco & Rodrigues, 2008; Tilling & Tilt, 2010; Mahadeo, et al., 2011, Claasen & Roloff, 2012), this thesis has also adopted it as the theoretical foundation.

Organisational legitimacy is not a universal concept. Whether an organisation and its actions are perceived as legitimate is socially created, therefore subject to change depending on the social environment in which the organisation is based. Organisational legitimacy theory therefore has an advantage over other theories by being able to explain different societal expectations. The first paper of this thesis on attitudes uses legitimacy dynamics and measures related to maintaining pragmatic and/or moral legitimacy to explain differences in Australian and Indian managerial attitudes.

 "Environmental performance is a rising component of organisational legitimacy as societal norms increasingly recognise the negative impacts on the local, national, and global commons that often result from corporate operations" (Mobus, 2005, p. 499). There is continuous pressure on organisations to mitigate externalities. Organisations may face public censure and lose organisational legitimacy by failing to respond to externalities. Organisations have to demonstrate social and environmental responsibility and legitimacy dynamics are instrumental in achieving this (Mobus, 2005). Xie and Hayase (2007) commented that differences in organisational cultural

attitudes and environmental regulations hinder the effective use of a single model across different contexts. As organisational legitimacy theory is capable of explaining different societal expectations, the second paper on performance measurement also uses organisational legitimacy theory to evaluate environmental performance in both Australia and India. The socio-environmental framework in which organisations function, and those associated with economic motivation are two main influences on an organisations' social and environmental reporting (Deegan, 2002; Deephouse & Carter, 2005). Company's activities influence social expectation. Such expectations vary between countries and legitimacy theory is able to explain this difference between organisations. Lindblom's (1994) four strategies of legitimation are potentially important in explaining dissimilarity in SER practices across the world. Therefore, the third thesis paper on reporting uses legitimacy theory. Following Branco and Rodrigues, 2008; Li and Zhang, (2010); Mahadeo et al. (2011) this paper uses legitimacy measures related to maintaining social legitimacy to explain the increase in reporting by Australian organisations over their Indian counterparts.

The results from the first thesis paper on attitudes shows a positive managerial attitude towards various social and environmental issues. There was strong support for incorporating tools into policy-making (e.g. adopting ISO14001 and consulting with stakeholders regarding environmental policy decisions) and/or adopting component measures of performance to deliver favourable outcomes for stakeholders. These indicate that managers wish to maintain a pragmatic and/or moral legitimacy of their organisation. The results of the paper on performance evaluation and reporting also shows that organisations incorporated various indicators and measurement items related to organisational system (environmental auditing, adoption of ISO 1400), Stakeholder relations (environmental disclosure, community contribution), operational countermeasures (countermeasures against global warming, countermeasures against environmental issues in process/product design) in the measures of performance to deliver favourable outcomes for stakeholders. These further indicate that organisations are keen to maintain pragmatic and/or moral legitimacy of their organisations.

Although the thesis used legitimacy theory to explain CSR practice in both Australia and India, it is expected that the theory may be more applicable to Australia due to its developed socio economic systems, advanced technology and heterogeneous culture. Xiao et al. (2005) argued that a

country's stage of social and economic development influences the attitudes towards SEA and extent of SER practices. Progress on economic and social issues within Australia is further advanced to that of India. The differing degrees of economic and social progress might shape stakeholders' requirements in each country indirectly. With most having achieved a level of economic security, people in Australia might argue that social and environmental issues are also very important to the society as economic issues. In contrast, the general public in a developing economy such as India might desire to argue that economic issues matter more than the social and environmental issues given the struggle to fulfil basic human needs. Consequently, this will affect attitudes toward, and the extent of SER.

1.7 Contribution of each self-contained journal article in addressing the overall research problem

The overall theme of the thesis, which constitutes three papers, is "A Comparative Study of Corporate Social Responsibility in an Emerging and Developed Economy". The first paper examines managerial attitudes towards social and environment accountability (SEA) in Australia and India. The paper also examines how managerial attitudes towards social and environment accountability differ between these two countries. The paper seeks to answer the research questions: (1) what are managerial attitudes towards social and environment accountability in Australia and India? and (2) How do managerial attitudes towards social and environment accountability differs between these two countries?

There is no published work which attempts to examine managerial attitudes towards SEA in India. Fukukawa et al., (2007) suggested that future studies should assess support for social and environmental accountability, and the determinants of such support among stakeholders from a diverse group of nations. Cummings (2006) suggested that future research could undertake further empirical work across geographical locations, and explore in greater detail the underlying determinants that shape environmental beliefs and attitudes. This paper contributes to the literature on managerial attitudes towards SEA and does so in an Australian (developed economy) and Indian context. This study is motivated to obtain a better understanding of managerial attitudes toward SEA within developed and developing Asian economies, in particular Australian and Indian

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managerial attitudes. This is the first empirical research on managerial attitudes towards SEA on India. The study will highlight whether there are significant differences in attitude towards key social and environment issues within these two countries.

The second paper measures organisational environmental performance across various indicators developed by Xie and Hayase (2007). It also examines how Environmental Performance Evaluation in Indian organisations differs from their Australian counterparts. The paper seeks to answer the research questions: (1) To what extent do companies in various industries measure Environmental Performance across selected indicators developed by Xie and Hayase (2007)? (2) How does Environmental Performance Evaluation in Indian corporations differ from their Australian counterparts? The objective of this paper is to answer the question regarding what is measured for Environmental Performance Measurement (EPM). I have adapted an operational EPM model from previous studies (Curkovic, 2003; Xie & Hayase, 2007) to answer this question. The model consists of Environmental Management Performance (EMP) and Environmental Operational Performance (EOP). EMP is measured by four Management Performance Indicators (MPIs): (i) organisational system, (ii) stakeholder relations, (iii) operational countermeasures and (iv) environmental tracking, and EOP are measured by two OPIs (inputs and outputs).

The third paper examines the extent of social and environmental reporting and differences in corporate social and environment reporting between Australia and India. It also examines their association with various firm characteristics such as industry and size. The paper investigated the research questions (1) is corporate social and environmental reporting related to certain company characteristics, such as industry and size? and (2) Are there any differences in corporate social and environmental reporting between selected companies in Australia and India? The objective of the third paper is twofold. First, to examine the extent of social and environmental reporting within a developed and an emerging economy, selected GRI (2002) social and environmental reporting guidelines have been used to determine how widely items with social and environmental impact are being reported. Second, to analyse the antecedents of SER in a developed and emerging economy, regression analysis is used to test hypotheses that link the variation in the extent of reporting to factors that are likely to influence SER.

The three individual papers provide different dimensions on SER. The first paper provides attitudes toward SEA, the second paper illustrates ways to measure performance and the final paper provides the extent of reporting using the GRI framework. The three dimensions of attitude (belief), performance measurement (action) and reporting (accountability) ultimately provide critical elements in assessing the overall theme of CSR.

1.8   Conclusion

This chapter sought to provide an overall framework for the thesis. The overall theme of the thesis is Corporate Social Responsibility in an Emerging and Developed Economy. CSR is contemporary and important because it is a vital strategy for companies to survive in a competitive market environment. With a continuous shift in market conditions, customer preferences become more unpredictable and complex. Adopting CSR as a central business strategy could therefore be a powerful tool for survival. It is a concept whereby companies integrate social and environmental concerns within their business operations and in their interaction with stakeholders. The theme is presented in three individual papers on attitudes, performance and reporting. The papers are important as attitudes; performance measurement and reporting each provide important dimensional elements in assessing SER. Each is important in helping to gauge organisational accountability in relation to SER.

The thesis is organised as follows. Chapter 2 presents a paper on managerial attitudes towards social and environment accountability. Chapter 3 presents a paper on environmental performance measurement whilst chapter 4 presents a paper on social and environmental reporting. The overall conclusion of the research is presented in chapter 5. The thesis ends with a comprehensive reference list and appendices.

Chapter 2 – Paper 1

MANAGERIAL ATTITUDES TOWARD SOCIAL AND ENVIRONMENTAL ACCOUNTABILITY – A STUDY ACROSS DEVELOPED AND DEVELOPING COUNTRIES

This first paper examines differences in managerial attitudes toward social and environment accountability between Australia and India.

The paper undertakes a comparative study between a developed economy (Australia) and an emerging economy (India). Researchers have undertaken comparative studies of developed economies such as between US, UK and Australia (Guthrie and Parker, 1990); UK, Germany, Sweden, Switzerland and The Netherlands (Adams et al.,1998); UK and USA (Holland & Foo, 2003); USA and Japan (Ho & Taylor, 2007) but no comparative analysis has been undertaken between a developed industrialised country and an emerging economy.

Most published research investigates environmental issues, whilst this paper examines environmental as well as social issues. Using prior literature the paper develops a suitably structured questionnaire drawing upon various social and environmental issues to examine Australian and Indian managerial attitudes. Using primary data (survey) from the Chemicals, Industrial Engineering and Pharmaceutical and Biotech industries, this is the first attempt to examine the social and environmental attitudes of Indian managers. The industries selected were based on social perceptions that companies operating in certain industries were more likely to be considered environmentally damaging. Principal Component Analysis (PCA) technique is used to explore the underlying factors for social and environmental accountability for both groups.

Managerial Attitudes Toward Social and Environmental Accountability – A Study across Developed and Developing Countries

Abstract

Efforts to promote corporate Social and Environmental Accountability (SEA) require an understanding of stakeholder attitudes toward enhanced accountability. However, little is known about current attitudes on this subject, or the determinants of these attitudes. This study presents a survey of the attitudes of corporate managers across Australia and India, toward 18 social and 16 key contemporary environmental management issues. The study sought to explore whether respondents from these countries, characterised by differing levels of development, differ in their attitudes toward social and environmental management. The findings indicate that Australian respondents are concerned about specific issues within the broad social accountability continuum, whilst Indian respondents are concerned about a range of issues surrounding social accountability. With respect to environmental attitudes, Indian respondents were stronger in their support, and identified a select few issues to be more important over other environmental factors. Although Australian respondents moderately favoured most of the environmental issues, they were not prominent in supporting most environmental issues under question. Results indicated that significant differences did exist between the 320 respondents on 16 of the 34 questions. Exploratory factor analysis of the items revealed four distinct social and environmental factors for Australian respondents with five social and four environmental factors for Indian respondents.

2.1   Introduction

Social and environmental accounting research was widely promoted in the 1970s, then lost its prominence in the 1980s, re-emerging from mid-to-late 1990s (Deegan, 2007) and gained increasing significance, particularly among academic accountants in Western countries (Adams & Kuasirikun, 2000; Gray et al., 1995a, 1995b, 1996; Guthrie & Parker, 1989, 1990). Whilst there has been an increase in social and environment accountability (SEA) research, most studies have focused on Western countries (Adams & Kuasirikun, 2000; Adams et al., 1998; Deegan & Gordon, 1996; Gray et al., 1995b, 1996; Guthrie & Parker, 1990). Relatively few attempts have been made to research SEA in the non-western and especially Asian context (Kuasirikun, 2005; Kuasirikun & Sherer, 2000). Most SEA research (Adams & Zutshi, 2004; Ali et al, 2004; Burritt, 2002; Deegan, 2002; Gray, 2006; Ho & Taylor, 2007; Holland & Foo, 2003; Parker, 2005), examined the extent of social and environmental reporting and their determinants, including those that examined an Indian context (Aurora & Puranik, 2004; Balasubramanian et al., 2005; Priyadarshini & Gupta, 2003; Raman, 2006; Sahay, 2004). These studies are descriptive, measuring the extent of reporting contained within annual reports. Scant published research work (except Belal & Owen, 2007; Cummings, 2006; Fukukawa, et al., 2007; Kuasirikun, 2005 and Shafer, 2006) is available in the area of managerial attitudes in both developed and emerging economies. Few articles (Cummings, 2006; Deegan et al., 1996; Haigh & Guthrie, 2010) have been available in the area of managerial attitudes towards SEA in Australia. Some researchers have undertaken research in the area of SEA in emerging economies but very little published research work (except Belal & Owen, 2007 and Kuasirikun, 2005) is available in the area of managerial attitudes, purely from an Asian emerging economy perspective. There is no published work which attempted to examine managerial attitudes toward SEA in India. Fukukawa et al. (2007) suggested that future studies should assess support for social and environmental accountability, and the determinants of such support among stakeholders from a diverse group of nations. Cummings (2006) suggested that future research could undertake further empirical work across geographical locations, and explore in more detail the underlying determinants that shape environmental beliefs and attitudes.

This study contributes to the under-researched area of managerial attitudes towards SEA and does so in an Australian (developed economy) and Indian (emerging economy) context. There is no published work examining managerial attitudes towards SEA in an Indian context. This study is

motivated by the above challenge to obtain a better understanding of managerial attitudes toward SEA between developed and emerging Asian economies, but particularly Australian and Indian managerial attitudes. The study will also explore whether there are significant differences in attitudes toward key social and environment issues across these two countries.

2.2   Background of the Study

There is a lack of Social and Environmental Accountability (SEA) research within south Asian emerging economies. Some emerging economies are confronted with the widespread problem of poverty, human rights violations, corruption, inequalities and social exploitation (Belal & Momin, 2009). Pachauri (2006) argued that organisations operating within emerging economies have a responsibility to address some of these problems. By holding business organisations to account, Belal and Momin (2009) believed SEA has the potential to promote equality, social justice, transparency and accountability. Studying attitudes will enable a better understanding of the relationship (if any) among social and environmental factors, such as culture, ethics, education, law and its enforcement, and the attitude towards environmental management, and whether those attitudes vary across different industries (Thorne & Saunders, 2002). Considering social issues are deemed as important as environmental issues this study includes both.

This study compares Australian and Indian managerial attitudes. The reason for focusing on India is that, after China, it is one of the most important emerging economies in Asia with respect to economic growth. According to the annual report of the Ministry of Finance (Government of India) the Indian economy has grown (annual growth in GDP) by 9.0% in 2007-08, 6.7% in 2008-09 and 7.2% in 2009-2010 (www.finmin.nic.in). India is an investment destination for many developed countries and is rated as the preferred destination for outsourcing (www.ibef.org).

Despite these figures, Indian environmental practices are far behind those of developed economies (Aurora & Puranik, 2004; Balasubramanian et al., 2005; Priyadarshini & Gupta, 2003; Raman, 2006; Sahay, 2004). Due to 'improved literacy', 'enlightened professionalism,' social awakening and government legislation and regulations, social responsiveness in India is increasing. In turn, these developments have resulted in increasing numbers of educated consumers, various green

and social non-government organisations (NGOs) and a growing middle class with disposable income. The result is that Indian companies are changing their attitudes towards SEA practices, although environmental reporting by Indian companies still lags behind that found in Western developed economies. What is reported is generally unsystematic, piecemeal and inadequate (Sahay, 2004). Using a sample of 318 randomly chosen, publicly listed, environmentally sensitive Chemical, Industrial Engineering and Pharmaceutical and Biotech companies, this study investigates managerial attitudes towards SEA with the purpose of better understanding of Australian and Indian managerial attitudes toward SEA.

2.2.2 Theoretical Background of the Study

Claasen & Roloff (2012) used legitimacy theory to analyse the link between responsibility and legitimacy. This paper adopted legitimacy theory as a basis for explaining managerial attitudes and variations in attitudes for Australian and Indian organisations.

Legitimacy theory states that legitimacy is a status or condition that is achieved when the value system of an organisation is congruent with the value system of the larger society. To synthesise the variant groups of research into one reliant body of legitimacy theory, Suchman (1995) provides the following generic definition of organisational legitimacy: ''a generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions'' (Suchman, 1995, p. 574). The literature on organisational legitimacy tends to identify three alternative forms of obtaining and sustaining legitimacy, but the categorisation differs from author to author (Bitektine 2011). Dowling and Pfeffer (1975) define social legitimacy as the degree to which an organisation conforms to the prevailing social norms and values. They describe three ways of becoming a legitimate organisation:

> First, the organisation can adapt its output, goals, and methods of operation to conform to prevailing definitions of legitimacy. Second, the organisation can attempt, through communication, to alter the definition of social legitimacy so that it conforms to the organisation's present practices, output, and values. Finally, the organisation can attempt,

again through communication, to become identified with symbols, values, or institutions which have a strong base of social legitimacy. (Dowling and Pfeffer 1975, p. 127)

A number of subtypes of organisational legitimacy can be identified depending on the different theoretical arrays. Suchman (1995) differentiates three types of legitimacy, such as pragmatic, moral and cognitive legitimacy. He proposes that these types co-exist and reinforce one another in most settings. Pragmatic and moral legitimacy are briefly discussed below as the paper concentrates on these two types. Pragmatic legitimacy derived from people's perceptions that the organisation is beneficial for themselves. It is thus a form of "exchange legitimacy" (Suchman 1995, p. 578) that serves the needs of self-interested individuals. Favourable influence or exchange relation to stakeholder's self-interest gains pragmatic legitimacy. Pragmatic legitimacy dynamics are often observed with stakeholders that directly interact with an organisation. The connection between organisation and stakeholders may include broad social interactions. Pragmatic legitimacy behaviours may focus on delivering favourable outcomes and stakeholder interests. The dynamics may focus on incorporating tools into policy-making and/or adopting component measures of performance (Suchman, 1995, p. 578). By addressing stakeholder expectations companies can obtain pragmatic legitimacy. Pragmatic legitimacy results from the calculations of self-interested individuals who are part stakeholders of the organisation, e.g., the key stakeholders or the wider public (Suchman, 1995). It is a challenge for the organisation to influence individuals' calculations, persuade key stakeholders and the wider society about the usefulness of its output, procedures, structures and leadership behaviour (Ashforth & Gibbs, 1990). This can be accomplished in various ways, e.g., by direct benefits to constituents, by meticulous stakeholder management, by inviting stakeholders to participate in corporate decision-making, or through influential public relations. Stakeholder management literature has widely acknowledged this fact. Some authors (Mitchell et al. 1997; Savage et al. 1991) suggest to prioritise powerful vocal stakeholders, but others (Carroll and Buchholtz 2006; Freeman et al. 2010) warn managers not to overlook the importance of more vulnerable stakeholder groups for a company's legitimacy in the longer term.

Moral legitimacy depends on the organisational activities relative to the social contract and the positive evaluations of the organisation. Suchman (1995) stated that moral legitimacy "rests not on

judgments about whether a given activity benefits the evaluator, but on judgments about whether the activity is 'the right thing to do". It "reflects beliefs about the activities which effectively promote social welfare" (p. 579). A morally legitimate company will be judged by its accomplishments, its work in accordance with socially accepted procedures, its leadership and its capacity to perform well. Palazzo and Scherer (2006) believe that moral legitimacy results from a conscious moral judgement on ''the organisation's output, procedures, structures and leaders'' (p. 73). They propose that moral legitimacy is socially created and that been considered and used to justify a company's actions, practices, structures and results. Environmental public interest groups, small investors and the general public concerned with environmental performance evaluate organisational legitimacy from a moral perspective. These groups remain important sources of legitimacy because of their potential to unite and challenge organisational legitimacy. They even create a legitimacy crisis although they largely have indirect interaction with organisations stakeholders.

Moral legitimacy is the ''true meaning of the word legitimacy'' (Koppell (2008, p. 182). Moral legitimacy is sometimes based on the evaluation of outputs and consequences of organisational action. Automobile emission standards are an environmental performance example of socially constructed means to evaluate consequences (Suchman, 1995, p. 580). From such a perspective, SER is seen as one of the strategies used by companies to seek approval of their activities from society. Legitimacy theory suggests that SER provides an important way of communicating with stakeholders, to convince them that the company is fulfilling their expectations (even when actual behaviour varies with some of these expectations) (Branco & Rodrigues, 2008). Organisational legitimacy is not a universal concept. Whether an organisation and its actions are perceived as legitimate is socially created, therefore subject to change depending on the social environment in which the organisation is based in. This study used pragmatic and moral legitimacy to explain managerial attitudes as done by Claasen and Roloff (2012).

2.3   Relevant SEA Literature

Recently CSR researchers have moved on to examine managerial and other stakeholders' perceptions of SEA more directly by using methods such as questionnaires or in depth interviews

(Belal & Owen, 2007; Islam & Deegan, 2008; Owen, 2008). Existing SEA research is reviewed under two categories: those based in Western developed economies and SEA studies in emerging economies. This categorisation is in response to differences in the level of socio-economic, (Xiao et al., 2005) and technological development (Williams & Pei, 1999) between these two groups of economies. Because of these differences the reasoning underlying corporate attitudes in emerging economies could be somewhat different to that in the developed economies.

2.3.1   SEA Studies in Western Developed Economies

Attitudes toward social and environmental issues have been solicited mainly in Western developed countries such as Spain (Corraliza & Berenguer, 2000); Australia (Cummings, 2006); USA (Fukukawa, et al., 2007; Shafer, 2006); Ireland (O'Dwyer, 2002) and UK (Petts et al., 1998). Most studies (Cummings, 2006; Petts et al., 1998; Shafer, 2006) have examined attitudes towards environmental issues except that by Fukukawa, et al. (2007) who examined attitudes among experienced MBA students towards environmental as well as social issues. In doing so, they examined the relationship between personal values and support for social and environmental accountability. Two factors: (1) the government should adopt and enforce formal SEA standards; and (2) corporations and executives should be held accountable for the social and environmental impacts of their actions were clearly revealed by the exploratory factor analysis. The results specified that the universalism value type is not associated with support for government enforcement of accountability standards but is positively associated with general support for SEA and support for government enforcement of SEA standards is significantly impacted by gender (female participants supported more). Cummings (2006) and Shafer (2006) found that managers lend their support to the new environmental paradigm (NEP[9]). Cummings (2006) indicated significant differences towards environmental attitudes among Australian, Chinese and Indonesian respondents. Australian respondents were more cautious of supporting a candid view on environmental issues but Chinese respondents favoured a more centralised approach to decision making regarding the environment. It was also found that the age factor was a possible influence on respondent beliefs (25-34 years age group supported strongly). Shafer (2006) argued that commitment to the support for ideologies such as free enterprise, private property rights, economic

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[9] Widely used measure of pro environmental orientation developed by Dunlap and Van Liere (1978).

individualism, and unlimited economic growth, poses a threat to progress in imposing greater standards of corporate environmental accountability in Western societies. The study suggested that attitudes toward these ideologies play a significant role in the formation of attitudes toward environmental accountability.

With an objective to better understand employee attitudes toward the environment, and their influence on business responsiveness, Petts, et al., (1998) explored the links between management and non-management attitudes to the environment and organisational responses within small and medium enterprises (SMEs). The study found strong positive attitudes about the environment and suggested that personal attitudes might be exploited to motivate, activate and help operationalise business responses to the environment.

In summary, few studies have investigated managerial attitudes towards SEA from a developed economy perspective. Most research on developed economies has focused on the USA, Europe and Australia. Most studies reported a positive managerial attitude but this attitude was mainly due to direct or indirect economic benefit not related to accountability.

2.3.2   SEA Research in Emerging Economies

Attitudes have been solicited in Bangladesh (Belal & Owen, 2007), Thailand (Kuasirikun, 2005), China (Liangrong & Song, 2008), Hong Kong (Jaggi & Zhao, 1996) and Ghana (Rahaman, 2000; Rahman et al., 2004). In studies based in emerging economies, management perceptions and interpretations of SEA have been explored by Jaggi and Zhao (1996), Kuasirikun (2005); Belal and Owen, (2007) and Liangrong and Song (2008). Jaggi and Zhao (1996), investigating the perceptions of managers and management accountants on the environmental reporting practices in Hong Kong, found that although managers were concerned about the protection of the environment in Hong Kong, that concern was not reflected in voluntary environmental reporting. They also commented that management accountants did not show much enthusiasm to convert their attitudes into action. A similar attitude was found by Kuasirikun (2005) who evaluated perceptions of current accounting as well as attitudes to social and environmental accounting among Thai managers and management accountants. The author argued that changing perceptions will have to involve a change in the nature of the Thai accounting profession and suggested ways in which the future

development of SEA practice might be given further momentum in the Thai context. Liangrong and Song (2008) investigated how Chinese senior executives and middle level managers perceive and interpret SEA, to what extent firms' characteristics influence managers' attitudes towards SEA and whether their values in favour of SEA are positively correlated to firms' economic performance. They found an overall favourable view, but the true nature of their attitude was linked to entrepreneurs' gaining economic benefits. They also found that managers of firms smaller in size, state-owned, and located in poorer regions are more likely to strongly support SEA. Manager's personal characteristics were not significantly correlated with their firms' economic, environmental and social performance.

Both Belal and Owen (2007) and Islam and Deegan (2008) have explored the attitudes of managers of Bangladeshi companies. Using 23 semi-structured interviews, managerial perceptions of Bangladeshi organisations had been studied by Belal and Owen (2007). The results propose that a desire to manage powerful stakeholder groups was the main drive following Bangladeshi SER. They commented that "outside forces" and pressure from international buyers are the motivating force behind rising SER practices in Bangladesh. Using legitimacy theory as a framework, the drive for Bangladeshi social reporting had been re-examined by Islam and Deegan (2008). Studying annual report content of the Bangladesh Garments Manufacturer and Exports Association (BGMEA), the authors concluded that since the early 1990s BGMEA faced pressure from international buyers regarding their social performance. This helped formulate their social reporting policy. The results are similar to that of Belal and Owen (2007). Belal and Owen (2007) also claim that social policy and reporting in the garment industry is compelled by such pressure. Rahaman (2000) explored senior management attitudes towards SEA in Ghana, and found that most of the Ghanaian organisations made very little or no reporting on environmental issues and the principal determinants of such attitudes were pressures from international lending agencies (such as the World Bank and the IMF), management philosophy, government regulation and the desire to achieve listing on international stock markets. Rahman et al. (2004) explored this issue further in a later study and found that the main driving force behind SEA in the Volta River Authority was external pressure from international lending institutions such as the World Bank.

In summary, few studies have investigated managerial attitudes towards SEA. The minute amount of literature looking at emerging economies suggests that corporate attitudes could be somewhat different from that found in developed economies. Belal and Momin (2009) argued that the difference could be because of the differences in the level of socio-economic (Xiao et al., 2005) and technological development (Williams & Pei, 1999) between these two groups of countries. Various authors (Belal & Owen, 2007; Islam & Deegan, 2008; Rahman et al. 2004) argued that consumer pressure or pressure from non-government organisations or civil society groups are the driving force for SEA in organisations in developed economies. In contrast, the driving force of SEA in organisations in emerging economies which depend on foreign loans and aid, could be external pressure from international lending institutions (Rahman et al. 2004), pressure from particular stakeholders (such as international buyers) to upgrade their social performance, which shaped their social policy (Belal & Owen, 2007), pressure from outside forces via parent company's instructions and pressure from international buyers (Islam & Deegan, 2008). The following table summarises the key variables and related studies on emerging economies.

Table 2.1 Summary of the key variables and related study on emerging economies

Key Variable	Study
Differences in the level of socio-economic	Xiao et al., 2005.
Technological development	Williams & Pei, 1999.
External pressure from international lending institutions	Rahman et al. 2004.
Pressure from particular stakeholders	Belal & Owen, 2007.
pressure from outside forces via parent company's instructions and pressure from international buyers	Islam & Deegan, 2008
Age and level of income	Tian et al. 2011
Effective reputation management strategy	Kim & Park, 2011

Managerial attitudes towards SEA in India have not been researched. Scant research has attempted to describe SEA for certain emerging economies in Asia such as Bangladesh, China and Thailand. Therefore, using data from Australian and Indian companies, this study aims to examine Australian and Indian managerial attitudes towards SEA.

2.4   Environmental Issues

Many Australian companies voluntarily disclose considerable information on environmental performance in their annual reports and other medium. There is evidence that companies have been significantly increasing the amount of information they provide in recent years. However, the

reporting practices many companies adopt have been inadequate (Frost & English, 2002). Reporting of objective and negative information on environmental performance is limited (Deegan & Rankin 1996), and an 'expectations gap' between the kind of information companies provide and what users of company reports desire has emerged (Deegan & Rankin 1999). Consequently, there have been calls for the introduction of mandatory reporting guidelines. In Australia, the Federal Government initially responded by introducing requirements under the Corporations Law (section 299 [1f]) in 1999. The section requires companies to provide details of their performance in relation to environmental regulations if companies prepare a directors' report. Evidence from the analysis of corporate reporting practices indicates that the introduction of s. 299[1f] has significantly increased the number of companies disclosing information on their performance in relation to environmental regulations (Frost & English, 2002). They stated that while mandatory reporting can improve reporting, many companies prefer a voluntary regime**.**

As an economically developed economy, Australian respondents are expected to support responsibilities beyond pure profit maximisation. It is anticipated that Australian respondents are more likely to support the notion that the degree of pressure from stakeholders determines an organisation's environmental reporting; local communities should be consulted on decisions affecting the environment and that organisations should consult with stakeholder groups on environmental policy decisions. It was also anticipated that Australian managers will support statistical data being kept on pollution emissions; separate corporate environmental reports published; environmental performance subject to independent verification by the respective government authority; and the same degree of environmental compliance between countries. There is also the idea of a carbon tax, and the use of trade sanctions as a mechanism to enforce environmental agreements. There has been continued debate within Australia about the merits of a carbon tax as a means to reduce greenhouse gases. A carbon pricing initiative, incorporating a carbon tax, has recently been released as a policy initiative by the Federal Government (www.*ecogeneration.com.au)*. It is also part of an ongoing debate in other jurisdictions which indicates the seriousness of this issue within developed economies. Such a tax has not yet been considered in developing economies such as India.

It cannot be assumed that SEA is consistent across the Asia-Pacific region. There are three main reasons for environmental non-performance in south and south eastern Asian countries, including (i) lack of government pressure; (ii) lack of perceived benefit, either in terms of status with respect to consumers or within the business community and; (iii) a perception that their organisation does not have any environmental impact (Perry & Sheng, 1999). Thompson and Zakaria, (2004) argued that casual attitudes towards social and environmental accountability amongst Asian emerging countries may be a result of the fear that social and environmental reporting initiatives may be seen as a way of exposing, and hence punishing, 'the laggards'. Lack of public pressure, (from NGOs and pressure groups) low levels of public accountability relative to that in the UK, USA and Australia, and a lack of pressure from other stakeholders to be socially and environmentally accountable, may be some of the reasons for low environmental accountability of Indian companies.

Rapid economic and urban growths of many developing countries are typically associated with environmental degradation (Daniere & Takahashi, 1999). The rapid economic growth, industrial development and increasing population are putting pressure on social and environmental issues in India (Sahay, 2004). Various factors (see table 2.2.) are pushing Indian managers to change their attitude towards SEA (Balasubramanian et al., 2005).

Table 2.2 Factors Influencing Management Attitude towards SEA.

Negative factors	Positive factors
industrial pollution, wastewater treatment deficiencies, water shortage and related health problems	Improved literacy, increasing numbers of educated consumers, increased social awareness, increasing green and social NGOs and an increasing middle class with higher disposable incomes.

The Bhopal disaster (December 1984) exposed the environmental fragility of companies as well as indifferent environmental behaviour of multinationals in India (Sahay, 2004). Though environmental laws existed prior to this disaster, the Indian Parliament enacted the comprehensive Environment (Protection) Act (1986) to meet the challenges of environmental governance, generating new rules

and regulations which businesses are obliged to meet. In view of emerging legislation, rules and regulations, companies found it advantageous to obtain ISO 14001 certification, which obliges them to at least meet all legislative requirements and install an environmental management system (Sahay, 2004). However, pollution is increasing with economic growth, reaching what Sahay (2004) describes as "unbearable proportions".

To keep pace with this environmental change, the Indian government enacted and implemented various legislative arrangements regarding the environment. Australia has adopted or ratified 44 international environmentally related agreements, compared with 23 for India (www.cia.gov; Boer, Ramsay & Rothwell, 1998). There are over 40 Australian federal acts (environment.gov.au) covering the environment. India, in turn, has implemented over 27 national environmental laws (envfor.nic.in).

As mentioned earlier, environmental reporting by Indian companies still lags that found in Western developed economies. Lack of public pressure, low levels of public accountability relative to that in the UK, USA, and Australia, and a lack of pressure from other stakeholders to engage in social and environmental activities may be reasons for this lag. Using a sample of 318 publicly listed, environmentally sensitive Australian and Indian Chemical, Industrial Engineering and Pharmaceutical and Biotech companies, this study investigates managerial attitudes towards SEA.

2.5 Research Method to Assess Managerial Attitudes

2.5.1 Survey Instrument Development

Similar to Bebbington et al. (1994), Kuasirikun (2005) and Fukukawa et al. (2007) the survey research method is used in this study. For research questions seeking to explore 'what', 'how' or 'why' (as opposed to enumerating 'how many' or 'how much'), qualitative research is the recommended strategy (Eisenhardt & Graebner, 2007). Since the research question in this paper explores 'What are Indian managerial attitudes towards environmental accountability?' a paper-based questionnaire was used for the survey (see appendix C). As individuals tend to respond to the questions asked in the questionnaire in ways that they feel to be socially desirable, it has been argued by Arnold et al. (1985) that responses from respondents to questionnaires may be viewed as contaminated ('socially desirable responding', Arnold and Feldman, 1981; Arnold et al., 1985).

However, questionnaire results are considered useful here as the obligations on the respondents to respond to the questionnaire in a 'socially desirable' or conditioned manner were minimised as the survey was conducted by a person external to their organisation, following the example of Kuasirikun (2005). Different techniques (Brace, 2008) available to prevent social desirability response bias in the paper-based survey questionnaire were considered during the survey development process. The questionnaires were circulated to selected members of academic staff at Macquarie and Newcastle universities for comment which were incorporated in the final version of the survey instrument.

The questionnaire drew on different issues arising from social and environmental accounting literature to ascertain managerial attitudes towards these issues and how these issues influence attitudes toward the social and environmental accountability of Australian and Indian managers. Accordingly, the questionnaire was structured and divided into three sections: managerial attitudes toward social accountability; managerial attitudes toward environmental accountability; and demographic questions. Interval response scales of 1–5 (Likert Scale e.g., 1 strongly disagree to 5 strongly agree) were used.

The social accountability section was developed using 18 items (See Table 2.4a.). Five items (B1, B2, B6, B7 and B9) measured respondent attitudes towards social rules, three items (B4, B13 and B17) measured respondent attitudes towards employees and their rights; while three items (B8, B10 and B11) measured respondent attitudes towards corporate social accountability and reporting. Another four items (B3, B5, B15 and B18) measured respondent attitudes towards their community and towards corruption prevention. The remainder measured respondent attitudes towards customer health and safety and resource constraints.

The environmental accountability section (See Table 2.4b) consisted of 16 questions. Five items (C9, C10, C11, C12 and C13) measured respondent attitudes towards different aspects of environmental reporting; two (C3 and C16) measured their attitude towards trade sanctions and environmental taxes. Respondent' attitudes toward increased government regulations, independent verification, compliances and enforcement of environmental regulations were measured by four items (C4, C8, C14, and C15), whilst another two items (C1 and C2) measured attitudes toward

local culture and values. The other items measured attitudes toward an environmental management system, recording of greenhouse gas emissions and policy decisions. The demographic section of the questionnaire (See Table 2.3) included questions relating to age, gender, education level and managerial position. The limitations of survey research using a questionnaire and the accompanying quantitative analysis are well-appreciated in the literature (Bebbington et al., 1994). However, the aim was to gain initial insights into current Australian and Indian managerial attitudes towards SEA.

2.5.2 Data Collection and Analysis

The data was collected through a professional data collection agency, Market Xcel Data Matrix Pvt Ltd, which had the necessary expertise, manpower and personal relationships with organisations in India and in Australia to facilitate a higher response rate. A sample size of 200 organisations from three industries (Chemical, Industrial Engineering and Pharmaceutical/Biotech) in India and another 250 organisations in total from the same three industries in Australia were randomly selected. These industries were selected based on the social perceptions that organisations operating in these Chemical, Industrial Engineering and Pharmaceutical/Biotech industries are more likely to be considered environmentally sensitive (Elkington, 1994). Industry classification and companies of both countries were selected randomly from the list of companies provided by the electronic database, DataStream Advance 4. An industry wide list of selected companies along with a questionnaire was supplied to Market Xcel Data Matrix Pvt Ltd, for collecting the information from Australia and India. This data collection company maintained data originality and independence by following the International Code on Market and Social Research (ICC/ESOMAR) guidelines, (www.esomar.org). To maintain data originality and reduce the risk of a low response rate, the author was personally present in India (at the beginning of the collection process) and Australia during their respective data collection period and oversaw (provided occasional instructions) data collection to avoid possible data duplication and fraud, and to make sure that the data collected was original, legitimate and reliable. In both countries, the firm Market Xcel Data Matrix Pvt Ltd randomly selected participants from their database who were middle / top level corporate / branch managers of selected Australian and Indian companies. The firm delivered questionnaires to the selected participants, who had the option to complete it in their own time. The firm personally collected the completed questionnaires after a period of approximately one week

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from the Indian participants and by post/over the phone from Australian participants. Due to the different operational environment in India it was prudent to have a professional firm deliver and collect the questionnaires, as mailed questionnaires would most likely remain unanswered without a personal approach. At the time of delivering the questionnaire the respondents were informed that their participation in the survey would be voluntary and would not lead to any consequences pertaining to non-participation or completion of the questionnaire. A total of 320 questionnaires (150 from Australia and 170 from India) were finally received with responses.

The aim of this study was to explore managerial attitudes toward social and environmental accountability of Australian and Indian respondents. Hence, a two-step data analysis procedure was undertaken in this study. In the first step, responses to scale items by the Australian and Indian respondents were analysed. In the next step, Principal Component Analysis (PCA) (appendix C) in SPSS software was used to explore the underlying dimension or factors for social and environmental accountability of both groups of respondents.

2.6 Findings

The preliminary analysis of demographic questions (in Table 2.3) revealed that factors such as age, gender and country of residence across both country based respondents, were not significantly different. Unlike the Indian data, where 100% of the respondents identified themselves as Indians with Indian cultural background, 22.7% of the Australian respondents had a different country of birth and came with different cultural backgrounds (68.7%). A comparison of the data across three factors: (i) respondents' level of education, (ii) their occupation and, (iii) membership as a consolidated group, revealed that a higher number of Indian respondents had a master's degree (45.3%) than their Australian counterparts (20%) whilst 16.7% of Australian respondents had only a high school education. Again, 35.3% of the Australian respondents held a director's position compared to India with 11.2%. Both countries had an almost equal percentage of managers as respondents (58%). Finally 58.8% of Indian companies were part of a consolidated group. However, 79.3% of Australian organisations were not members of a consolidated group. The differences in the percentage of responses across Australian and Indian data are striking, as they are very useful to cross validate if educational background, managerial position and their

membership in a consolidated group are associated with their attitude towards social and environmental accountability.

Table 2.3 Descriptive Statistics of both Groups of Respondents

		Australia		India	
Characteristic	Attributes	N=150	%	N= 170	%
Gender	Male	123	82	153	90
	Female	27	18	17	10
Age	Under 25	2	1.3	5	2.9
	25-34 years	33	22	46	27.1
	35-44 years	55	36.7	64	37.6
	45-54 years	33	22	37	21.8
	55+ years	27	18	18	10.6
Country of birth	Australia	111	74	Nil	
	India	5	3.3	170	100
	Others	34	22.66	Nil	
Resided in the country of residence	> 10 years	18	12	4	2.4
	10 to 20 years	6	4	20	11.8
	20 years +	126	84	146	85.9
Cultural background	Anglo Celtic	23	15.3	Nil	
	Indian	5	3.3	170	100
	Cont. European	17	11.3	Nil	
	Chinese	2	1.3	Nil	
	Others	103	68.66	Nil	
Education	Non-university Post secondary	25	16.7	14	8.2
	Bachelors	64	42.7	77	45.3
	Masters	30	20	77	45.3
	others	31	20.6	2	1.2
Occupation	Director	53	35.3	19	11.2
	Manager	87	58	100	58.8
	C EO	2	1.3	4	2.4
	Chief Accountant	4	2.7	2	1.2
	Others	2	1.33	45	26.5
Organisation part of consolidated group	Yes	31	20.7	100	58.8
	No	119	79.3	70	41.2

The preliminary analysis indicated that overall, the Indian and Australian data had moderate levels of skewness, (Australian data between -0.972 and -0.052 and Indian data between -1.395 and -0.254) indicating normal distribution. The findings enabled the researcher to explore the responses to each question in the survey and understand the symmetry of the data.

2.6.1 Social Accountability

Table 2.4a and 2.4b present the mean scores of the social and environmental items. It is indicated in Table 2.4a that the mean responses to most of the social accountability items ranged from 2.92 to 3.82 for Australian respondents, and 3.59 to 4.30 for Indian respondents. This suggests that both groups of respondents in the study had moderate (mean score 3.5 -3.8) to high (mean score of 3.8 and above) support for most of the social accountability related items of the questionnaire.

Table 2.4a Mean Scores of Social Accountability Items of Both Groups of Respondents

	Social Accountability	Australia	India		
	Scale item description	Mean (SD)	Mean (SD)	t	Sig
B1	The social rules of a country influence individual attitudes towards accountability.	3.54 (1.04)	3.98 (0.71)	-4.30	.000
B2	The cultural values of a country directly influence the development of an organisation's social reporting system.	3.46 (1.24)	4.04 (0.75)	-4.97	.000
B3	The needs of society overall are just as important, if not more important in managerial decision making, as the specific needs of the shareholder.	3.27 (1.15)	3.83 (0.843)	-4.87	.000
B4	Managers in this country are more likely to practice higher ethical standards than managers overseas.	3.31 (1.20)	3.69 (0.90)	-3.16	.002
B5	The primary area of social concern for organisations is community involvement.	3.05 (1.19)	3.79 (0.93)	-6.11	.000
B6	Educating employees about social rules is the organisation's responsibility.	2.95 (1.27)	4.01 (0.90)	-8.48	.000
B7	Multinational organisations apply a higher standard of social accountability in their home (domiciled) country.	3.21 (1.13)	3.82 (0.86)	-5.40	.000
B8	Social codes of conduct encourage an organisation to be more accountable.	3.39 (1.14)	4.03 (0.75)	-5.86	.000
B9	Organisations must discharge their social obligations to survive.	3.27 (1.21)	3.88 (0.85)	-5.12	.000
B10	A sustainability report will improve the image of an organisation.	3.41 (1.08)	4.16 (0.64)	-7.39	.000
B11	A sustainability report will improve the competitiveness of an organisation.	3.25 (1.13)	3.98 (0.79)	-6.54	.000
B12	Resource constraints are the main obstacle for organisations wishing to discharge their social accountability.	2.92 (1.22)	3.59 (0.96)	-5.42	.000
B13	Informing employees about their rights is the responsibility of top management.	3.60 (1.30)	4.09 (0.83)	-3.99	.000
B14	Corporate social responsibility (CSR) reporting should be mandatory.	3.44 (1.27)	4.11 (0.78)	-5.59	.000
B15	The full range of organisational employee benefits should be made available to all employees.	3.69 (1.17)	4.15 (0.75)	-4.05	.000
B16	An organisation should make its policies on customer health and safety publicly available.	3.82 (1.16)	4.21 (0.74)	-3.52	.000
B17	An organisation should make its policies on corruption prevention publicly available.	3.68 (1.32)	4.30 (0.72)	-5.11	.000
B18	An organisation should make its policies on the extent of local area employment publicly available.	3.53 (1.19)	3.92 (0.79)	-3.45	.001

The standard deviation of Indian respondents was relatively lower than Australian respondents which reflect a greater consensus of attitudes amongst Indian respondents (Shafer 2006).

The Australian participants felt most strongly about a few issues surrounding social accountability such as customer health and safety policy (B16), organisational employee benefits (B15), and polices on corruption prevention (B17). However, Indian respondents strongly supported a range of issues on social accountability, ranging from corruption prevention policies (B17), customer health and safety (B16), corporate social responsibility (B14), sustainability reporting (B10), and social codes (B8), to educating employees about social rules (B6), informing employees about their rights (B13), employee benefits (B15) and cultural values influencing social reporting (B2). This finding indicates that Australian respondents are concerned about specific issues within the broad social accountability continuum, whilst the Indian respondents are concerned about a range of issues

surrounding social accountability. Alternatively it can be suggested that three issues of health and safety (mean score 4.33), corruption prevention (mean score 4.33), and employee benefits (mean score 4.26) have been the key social issues perceived by Indian business managers. On the down side, Australian and Indian respondents more or less provided the least support to the organisations' community involvement (B5), educating employees about social rules (B6), the practice of higher ethical standards by Indian managers (B4) and the resource constraints which influence the discharge of social accountability (B12).

2.6.2 Environmental Accountability

The mean response to the environmental accountability items ranged from 3.08 to 3.85 for Australian respondents and 3.59 to 4.20 for Indian respondents, suggesting that both groups of respondents were supportive of environmental accountability related questions. The standard deviation of Indian respondents was relatively lower than Australian respondents, which reflected greater consensus in attitude. There was a high response to each of the environmental accountability questionnaire items by the Australian respondents. However, Indian respondents' mostly favoured specific issues concerning environmental accountability, such as the acquisition of ISO14001 on environmental management system (C3), keeping records of greenhouse gas emission amounts (C4), consultation with various stakeholder groups when making environmental policy decisions (C5), standalone environmental reports (C7), and that weak enforcement causes poor compliance with environmental regulations (C16). At the same time they moderately favoured the rest of the items on environmental accountability. These findings also indicate that Indian respondents are concerned about environmental accountability, however they categorised few issues to be more important than other environmental factors.

Independent-Samples T Test was performed to statistically test the differences between the two countries results. The result indicated that Indian managers (M=3.98, SD=.19, n=18) supported significantly more social issues on average than Australian managers (M=3.38, SD=.25 n=18), t (34) =8.15, p=0.00. Indian managers (M=3.93, SD=.18, n=16) also supported significantly more environmental issues on average than Australian managers (M=3.34, SD=.21, n=16), t (30) =8.58, p=0.00.

Table 2.4b Mean Scores of Environmental Accountability Items

	Environmental Accountability	Australia	India		
	Scale item description	Mean (SD)	Mean (SD)	t	Sig.
C1	The degree of pressure from stakeholders determines the level of environmental reporting by an organisation.	3.08 (1.26)	3.65 (0.83)	-4.66	.000
C2	Trade sanctions should be imposed on countries not complying with international environmental agreements.	3.35 (1.38)	3.97 (0.82)	-4.76	.000
C3	Corporations in the manufacturing industry should acquire ISO14001 – the international standard for environmental management systems.	3.26 (1.27)	4.15 (0.76)	-7.41	.000
C4	A register to record the amount of greenhouse gas emissions should be maintained by corporations in the manufacturing industry.	3.46 (1.28)	4.20 (0.61)	-6.43	.000
C5	Managers should consult with various stakeholder groups when making environmental policy decisions.	3.51 (1.12)	4.06 (0.79)	-5.01	.000
C6	Local organisations should be subject to the same degree of environmental scrutiny as organisations from foreign countries (i.e. multinationals).	3.85 (1.15)	3.99 (0.81)	-1.20	.232
C7	A stand alone environmental report (separate from an annual report) should be published by organisations operating in the manufacturing industry.	3.15 (1.19)	4.01 (0.76)	-7.54	.000
C8	An organisation's environmental performance should be subject to independent verification by a government authority.	3.24 (1.29)	3.91 (0.92)	-5.30	.000
C9	Individual environmental behaviour is influenced by local culture.	3.62 (1.07)	4.09 (0.68)	-4.64	.000
C10	Most organisations do not report environmental information because they believe their operations do not have significant environmental impact.	3.11 (1.30)	3.77 (0.84)	-5.34	.000
C11	Most organisations do not report environmental information because they do not have the resources to do so.	3.46 (1.26)	3.59 (0.94)	-1.04	.298
C12	Reporting on its environmental activities can add value to an organisation and help it reduce costs in the short term (< 3 yrs.).	3.33 (1.23)	3.72 (0.84)	-3.27	.001
C13	Reporting on its environmental activities can add value to an organisation and help it reduce costs in the long term (> 3 yrs.).	3.45 (1.20)	3.94 (0.71)	-4.29	.000
C14	Environmental taxes can be an important way of achieving reductions in greenhouse gases.	3.15 (1.19)	3.79 (0.96)	-5.20	.000
C15	An increase in government regulations/oversight will encourage a more balanced approach to environmental reporting.	3.23 (1.20)	3.96 (0.74)	-6.49	.000
C16	Weak enforcement by authorities causes poor organisational compliance with environmental regulations.	3.19 (1.14)	4.08 (0.65)	-8.45	.000

Factor Analysis

To identify the factors behind managerial attitudes the data was factor analysed based on the mean score responses to individual items. Factor analysis with principal component extraction with varimax was undertaken to identify the number of factors that underlie the variables of social and environmental accountability (Gnanadesikan, 1997). This provided a better understanding of which factors constitute both social and environmental accountability for Australian and Indian respondents. A Cronbach's Alpha test was undertaken to test the internal consistency or reliability of the items, in order to achieve an adequate measure of each variable (Nunnally & Bernstein, 1994).

2.6.3 Factor Analysis of Social Accountability

The factor analysis on social accountability of Australian respondents resulted in five factors that collectively explained 54.98% of the total variance. Table 2.5 provides a summary of the results. Factor one consisted of seven items (B10, B11, B6, B8, B17, B9, B5) that loaded in the range of 0.34 to 0.76. This factor is labelled as 'organisational accountability', based on the commonality of the items representing this factor (Gerbing & Anderson, 1984). Two items of this factor measure sustainability, and five items measure organisational responsibility. Factor two has three items, (B1, B2, B4), loaded in the range of 0.53 to 0.74, and this factor is labelled as 'country based accountability', considering its item commonality that represents the country based influence on social accountability. The third factor consists of three items (B15, B18, B13) in the range of 0.44 to 0.68. This factor is labelled as 'accountability towards employee', as all three of the items in this factor represent employee related aspects such as employee benefits, employee rights and employment. All three factors discussed above measure one uni-dimensional construct of social accountability.

The items in organisational, country and employee based accountability loaded highly on their respective factors, indicating good discriminant validity (Diamantopoulos, 2005). The reliability scores for all of the four factors were in the range of 0.75 to 0.70, indicating acceptable reliability (Nunnally & Bernstein, 1994). The remaining items of social accountability cross loaded on other factors and hence these items were deleted from the measures. This action meant that the fourth and fifth factors no longer existed. To assess the dimensionality of social accountability within the group of Indian respondents, a principal component analysis was also undertaken. The analysis revealed five interpretable factors that explain 58.6% of the total variance. Table 2.6 presents the results.

In addition to the failure to load factors on social accountability similar to the Australian respondents, there appear to be two primary differences between the Australian and Indian respondents. Firstly, Australian respondents considered the role of both internal and external factors such as the organisation, country, employee and stakeholders to measure social accountability. However, the Indian respondents considered factors internal to the organisation

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such as social rules and responsibilities (factor 1), availability of information (factor 2), needs and responsibilities of organisation (factor 3), influences on social accountability (factor 4), and sources within organisations (factor 5) to measure social accountability.

Table 2.5 Factor Loadings of Social Accountability of Australian Respondents

Social accountability	Factor 1	Factor 2	Factor 3
Organisational accountability			
B10: A sustainability report will improve the image of an organisation.	.76		
B11: A sustainability report will improve the competitiveness of an organisation.	.64		
B6: Educating employees about social rules is the organisation's responsibility.	.57		
B8: Social codes of conduct encourage an organisation to be more accountable.	.48		
B17: An organisation should make its policies on corruption prevention publicly available.	.44		
B9: Organisations must discharge their social obligations to survive.	.42		
B5: The primary area of social concern for organisations is community involvement.	.34		
Country based accountability			
B1: The social rules of a country influence individual attitudes towards accountability.		.74	
B2: The cultural values of a country directly influence the development of an organisation's social reporting system.		.69	
B4: Managers in this country are more likely to practice higher ethical standards than managers overseas.		.53	
Accountability towards Employee			
B15: The full range of organisational employee benefits should be made available to all employees.			.68
B18: An organisation should make its policies on the extent of local area employment publicly available.			.57
B13: Informing employees about their rights is the responsibility of top management.			.44

The second difference was the item loading on different factors that formed the underlying dimension. For example; factor one, which is referred to herein as 'social rules and responsibilities' (based on its items commonality) represent the social obligation, social codes and responsibility of the organisation. This factor consists of three items, B14, B9 and B8 that load in the range of 0.61 to 0.65. However, for the Australian data two items B8, (social codes of conduct encourage an organisation to be more accountable) and B9 (organisations must discharge their social obligations to survive), loaded on factor 1 to represent the dimension of organisation accountability. Similarly, factor two has three items B16, B15 and B18, that loaded in the range of 0.52 to 0.82.

Table 2.6 Factor Analysis of Social Accountability of Indian Respondents

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Social rules and responsibilities					
B14: Corporate social responsibility reporting should be mandatory.	.65				
B9: Organisations must discharge their social obligations to survive.	.63				
B8: Social codes of conduct encourage an organisation to be more accountable.	.61				
Public availability of organisational policies					
B16: An organisation should make its policies on customer health and safety publicly available.		.82			
B15: The full range of organisational employee benefits should be made available to all employees.		.75			
B18: An organisation should make its policies on the extent of local area employment publicly available.		.52			
Responsibilities of organisation					
B3: The needs of society overall are just as important, if not more important in managerial decision making, as the specific needs of the shareholder.			.64		
B6: Educating employees about social rules is the organisation's responsibility.			.56		
B13: Informing employees about their rights is the responsibility of top management.			.52		
Influences on social accountability					
B1: The social rules of a country influence individual attitudes toward accountability.				.85	
B2: The cultural values of a country directly influence the development of an organisation's social reporting system.				.75	
Organisational sources to improve social accountability					
B12: Resource constraints are the main obstacle for organisations wishing to discharge their social accountability.					.74
B10: A sustainability report will improve the image of an organisation.					.71

In the Australian data, items B15 and B18 represented the dimension of employee based accountability. However, the Indian respondents considered these two items, along with item B16, to be important items that represent the organisations' role in making policies related to employment, employee benefit, and customer health and safety available to people. This is evident by the mean score of the three items ranging from 3.92 to 4.21 and high loading of the three items together on one factor proving its discriminant validity (Nunnally & Bernstein, 1994). Hence, factor two is labelled as 'public availability of organisational policies'. The third factor consisted of three items, B3, B6, and B13. However, for the Australian respondents, item B6 loaded on a different dimension that represents organisational based accountability (factor 1).

The analysis of Indian data revealed items B6, (educating employees about social rules) B13, (informing employees about their rights) and B3, (societal needs are important) loaded on one factor in the range of 0.52 to 0.64. Hence, these three items were named as 'needs and responsibilities of the organisation', based on their item commonalities that represented the factor. Factor four consisted of two items B1, (social rules of a country influence individual attitudes toward accountability) and B2, (cultural values of a country directly influence the development of an organisation's social reporting system), that loaded in the range of 0.75 to 0.85. These two items were also loaded together along with another item, (B4) in the Australian data under the dimension of country based accountability. However, it was decided to name these two items as 'influence on social accountability'. This decision was taken to remain consistent with other dimensions of social accountability to represent the factors internal to the organisation, as mentioned above. The five factors of social accountability displayed good reliability scores in the range of 0.8 to 6.5 (Nunnally & Bernstein, 1994). Based on the factor loadings, few factors such as factor 4 'Influences on social accountability' (average load .80), factor 5 'Organisational sources to improve social accountability' (average load .73) and factor 2 'Public availability of organisational policies' (average load .70) were more important than other factors in the case of Indian data. It also indicates that the most important variables according to factor loadings are B1 (.85), B16 (.82), B2 and B15 (.75), B12 (.74) and B10 (.71). However, the Australian data showed that the most important variables are B10 (.76), B1 (.74), B2 (.69) and B15 (.68).

2.6.4   Factor Analysis of Environmental Accountability

The factor analysis on the environmental accountability of Australian data revealed a four-factor structure that explained 54.03% of the total variance. Table 2.7 provides the results for environmental accountability. The first factor consisted of four items (C12, C5, C14 and C15) that loaded in the range of 0.47 to 0.73. This factor is labelled as 'Value addition' based on the substantive commonalities between the items. Two items are loaded on the second factor (items C6 and C3) in the range of 0.60 to 0.69. The items in the second factor refer to international standards for environmental management and environmental scrutiny. Hence, the second factor is labelled as 'International Standards for Environmental Accountability'. The third factor is labelled as 'Management of Environmental Accountability' based on their substantive item commonality, which is verification of environmental performance, reporting environmental information and regulation of

environmental reporting. The three items in this factor (items C10, C8 and C15) loaded in the range of 0.49 to 0.78. The fourth factor consists of two items (C1 and C11) that represent environmental reporting of environmental information. Both these items loaded in the range of 0.63 to 0.64, and hence the fourth factor is labelled as 'Reporting of Environmental Information'.

Table 2.7 Factor Loadings of Environmental Accountability of Australian Respondents

Environmental accountability	Factor 1	Factor 2	Factor 3	Factor 4
Value addition				
C12: Reporting on its environmental activities can add value to an organisation and help it reduce costs in the short term (<3 yrs).	.73			
C5: Managers should consult with various stakeholder groups when making environmental policy decisions.	.62			
C14: Environmental taxes can be an important way of achieving reductions in greenhouse gases.	.59			
C13: Reporting on its environmental activities can add value to an organisation and help it reduce costs in the long term (> 3 yrs).	.47			
International standards for Environmental Accountability				
C6: Local organisations should be subject to the same degree of environmental scrutiny as organisations from foreign countries (i.e. multinationals).		.69		
C3: Corporations in the manufacturing industry should acquire ISO14001 – the international standard for environmental management systems.		.60		
Management of Environmental Accountability				
C10: Most organisations do not report environmental information because they believe their operations do not have significant environmental impact.			.78	
C8: An organisation's environmental performance should be subject to independent verification by a government authority.			.70	
C15: An increase in government regulations/oversights will encourage a more balanced approach to environmental reporting.			.44	
Reporting of Environmental Information				
C1: The degree of pressure from stakeholders determines the level of environmental reporting by an organisation.				.64
C11: Most organisations do not report environmental information because they do not have the resources to do so.				.63

The items under factors value addition, reporting of environmental information, international standards and management of environmental accountability load highly on their respective factors indicating good discriminant validity (Diamantopoulos, 2005). The reliability scores for all the four factors was in the range of 0.70 to 0.60, indicating acceptable reliability (Nunnally & Bernstein, 1994).

The analysis of Indian data in Table 2.8 also revealed a four factor structure that explains 54.89% of the total variance. These four factors are herein labelled as: (i) Recording and Reporting of Environmental Matters, (ii) Environmental Governance, (iii) Environmental Process and (iv)Environmental Report. From the analysis and description of the items under each factor it appears that these four factors do not contradict the findings under Australian data, and contribute to the understanding of the concept of environmental accountability. Factor one 'Recording and Reporting of Environmental Matters' consists of four items that loaded in the range of 0.64 to 0.71; item C15 (balanced approach to environmental reporting), C12 (reporting on its environmental activities can add short term value to organisation), C4 (a register to record the amount of greenhouse gas emissions should be maintained by corporations), and C13 (reporting on its environmental activities can add long term value to an organisation). In the Australian data two of the items on this factor item C13 and C15 represented different dimensions (factor 1 and factor 3). However, in the context of the Indian data these two items showed a high loading on one factor, proving its discriminant validity. At the same time all the four items on this factor contribute to the understanding and importance of recording and reporting of environmental matters for environmental accountability.

The second factor consisted of three items, C14, C2, and C16, that loaded in the range of 0.56 to 0.67. These three items represent the ways in which environmental accountability can be governed by imposing environmental taxes to reduce greenhouse gas emissions (item C14), imposing sanctions on countries not complying with environmental regulations (item C2), and enforcing organisational compliance with environmental regulations (C16). Hence, this factor was labelled as 'Environmental Governance'. One item on this factor (C14) represented other dimensions (factor 1) in the Australian data, however, due to the significant loading of item C14 (0. 67) on factor two for Indian data, this item was considered to represent the underlying dimension of environmental governance. The third factor consists of four items, (C8, C5, C1 and C6) that loaded in the range of 0.44 to 0.78. All of the items in this factor represented different dimensions in the Australian data, (factors 1, 2, 3 and 4). However, collectively when these four items were loaded on a single factor they represented a single underlying dimension of 'environmental processes'. Wherein, the verification (item C8) consultation (item C5), reporting (item C1) and scrutiny (item C6) of

environmental policy or performance represent the process through which organisations or government authority could achieve environmental accountability.

Table 2.8 Factor Loadings of Environmental Accountability of Indian Respondents

Environmental accountability	Factor 1	Factor 2	Factor 3	Factor 4
Recording and reporting of environmental matters				
C15: An increase in government regulations/oversight will encourage a more balanced approach to environmental reporting.	.71			
C12: Reporting on its environmental activities can add value to an organisation and help it reduce costs in the short term (<3 yrs).	.67			
C4: A register to record the amount of greenhouse gas emissions should be maintained by corporations in the manufacturing industry.	.67			
C13: Reporting on its environmental activities can add value to an organisation and help it reduce costs in the long term (> 3 yrs).	.64			
Environmental governance				
C14: Environmental taxes can be an important way of achieving reductions in greenhouse gases.		.67		
C2: Trade sanctions should be imposed on countries not complying with international environmental agreements.		.63		
C16: Weak enforcement by authorities causes poor organisational compliance with environmental regulations.		.56		
Environmental process				
C8: An organisation's environmental performance should be subject to independent verification by a government authority.			.78	
C5: Managers should consult with various stakeholder groups when making environmental policy decisions.			.70	
C1: The degree of pressure from stakeholders determines the level of environmental reporting by an organisation.			.64	
C6: Local organisations should be subject to the same degree of environmental scrutiny as organisations from foreign countries (i.e. multinationals).			.44	
Environmental report				
C7: A stand alone environmental report (separate from an annual report) should be published by organisations operating in the manufacturing industry.				.74
C11: Most organisations do not report environmental information because they do not have the resources do so.				.73
C10: Most organisations do not report environmental information because they believe their operations do not have significant environmental impact.				.67

Finally, the fourth factor, labelled as 'environmental report' consists of three items C7, C11, and C10 that loaded in the range of 0.67 to 0.74. For the Australian data two of the items on this factor, item C11, (organisations do not report environmental information because they do not have the resources to do so) and C10, (organisations do not report environmental information because they believe their operations do not have significant environmental impact) loaded under different dimensions, (factor 3 and 4). However, the Indian data considered these two items, along with item

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C7, to significantly load on one factor, proving its discriminate validity from other factors. Hence, this factor was labelled as environmental report, based on its item commonalities. According to factor loading, all the variables (except C6 and C16) are important for Indian data (factor loadings .64 and above). Although four factors contribute to the understanding of the concept of environmental accountability factor 4 'Environmental report' (average loading .71) and factor 1 'Recording and reporting environmental matters' (average loading .67) were more than other factors based on average factor loading. The result indicated that the most important variable is 'An organisation's environmental performance should be subject to independent verification by a government authority' with .78 factor loading. This indicates the Indian managers' attitudes towards government controlled environmental accountability. Australian managers also strongly supported (with a loading of .70) government controlled environmental accountability. However, the most important variable (highest factor loading of .78) for Australian managers was C10. The other important variables are C1, C6 and C12 (factor loadings .64 and above). Based on average factor loading, factor 2 'International standards for Environmental Accountability' (loading .65) was most important. Factor 3 'Management of Environmental Accountability' and factor 4 'Reporting of Environmental Information' was equally important (loading .64).

2.7   Discussion and Conclusion

This study attempts to obtain a better understanding of managerial attitudes toward SEA between developed and developing Asian economies, using Australian and Indian managerial attitudes. Responses to most of the social accountability items suggest that respondents to the study had moderate to strong support for most of the social accountability related items of the questionnaire. Relatively lower standard deviation of Indian respondents than the Australian respondents, reflected greater consensus of attitude amongst Indian respondents. The result indicates that Indian managers are concerned about a range of social issues and is evidenced by their strong support for a customer health and safety policy, organisational employee benefits, polices on corruption prevention, corporate social responsibility, sustainability reporting, educating employees about social rules, informing employees about their rights, employee benefits and organisation's social reporting. The result indicates that Indian respondents are concerned about a greater range of social issues than Australian respondents. Australian participants strongly supported a few

issues surrounding social accountability whereas Indian respondents strongly supported these issues as well as other issues on social accountability. The result indicates that social responsiveness in India has increased as Raman (2006) found that Indian organisations place emphasis only on service improvement and development of human resources. This result confirms the findings of the Indian Institute of Management, Bangalore study that social responsiveness in India has increased in the last five years (cited in Balasubramanian et al., 2005). The reason for this increased responsiveness is attributed to 'improved literacy', 'enlightened professionalism', and 'social awakening' (Balasubramanian et al., 2005).

Australian respondents also exhibited strong environmental support, favouring specific issues concerning environmental accountability such as international standards for an environmental management system, keeping records of greenhouse gas emissions, consultation with stakeholder groups when making environmental policy decisions and publication of stand-alone environmental reports. However, Indian respondents were stronger than Australian respondents in their support of the abovementioned environmental issues. The mean responses to the SEA scale items (Table 2.4a, 2.4b) suggest a high level of support for social and environmental accountability by Indian and moderate to high level of support by Australian managers. These findings confirm the findings of Cummings (2006) where Chinese and Indonesian respondents were stronger than Australian respondents in their support of environmental issues. The mean response for the eight (B6, B8, B9 B13, C2, C4, C5 & C8) items comprising the accountability factor was approximately 4.1 for Indian and 3.3 for Australian managers on the five-point scale, indicating strong support for the general proposition that corporations and executives should be held accountable for the social and environmental impacts of their actions.

The mean scores of SEA items reveal an overall positive attitude towards SEA amongst these groups of managers in Australia and India. The finding is in line with the findings of Kuasirikun (2005) which revealed an overall positive attitude towards social and environmental accounting amongst the managers and accounting-related professionals in another emerging economy (Thailand) and Liangrong and Song (2008) which depicted a positive attitude towards SEA amongst Chinese managers. However, the findings contrast with the findings of the Deegan et al., (1996) study, which indicated that Australian accounting managers did not see environmental

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reporting as part of their job and Gray et al. (1996) which suggested a lack of awareness of environmental issues and their financial implications amongst accountants in Britain. The findings also indicated that respondents were concerned about environmental accountability, categorising few issues to be more important than environmental factors. This result is also similar to the findings of another two studies of emerging economies (Kuasirikun, 2005 and Liangrong & Song, 2008), which found that managers were concerned about protection of the environment.

The key driver of corporate accountability comes from progressive entrepreneurship applied by managers and entrepreneurs. Evidence suggests that in emerging economies, senior managers believe in their role as being responsible moral actors directing the social responsibility choices within their organisations. Moreover, managers in developing countries pursue CSR as a legitimacy-seeking strategy (Chen et al. 2010). To appear accountable most respondents in the sample do favour adopting responsible practices, such as adopting ISO 14001 only on environmental management systems, keeping records of greenhouse gas emissions, and consultation with stakeholder groups when making environmental policy decisions.

Of the 18 social and 16 environmental issues presented, Indian respondents were more prominent on eight social and six environmental issues than the Australian respondents, (mean score more than 4.01). This finding is also similar to that of Cummings (2006) where Chinese and Indonesian respondents were more prominent than Australian respondents on seven out of 18 environmental questions presented. Significant (at 0.00 levels) differences did exist between the two groups of managers on attitudes toward various social and environmental issues.

Factor analyses on social accountability revealed three factors for Australian and five factors for Indian respondents. The items loaded in the different factors were different for the Australian and Indian respondents. Australian respondents observed the role of different parties but the Indian respondents considered factors internal to the organisation to measure social accountability. Factor 4 (average load .80) and variable B1 ('social rules of a country influences individual attitudes towards accountability', loading .85), was most important for Indian respondents. However, the most important variable for Australian respondents was 'a sustainability report will improve the image of an organisation' (B10, loading .76).

Environmental accountability revealed four factors for both Australian and Indian data but item loading on different factors that formed the underlying dimension was different for both groups. According to factor loading, factor 4 (average loading .71) and the variable 'Independent verification of environmental performance by a government authority' (C8 with .78 factor loading) are most important. This indicates the Indian managers strongly support government controlled environmental accountability. Australian managers also strongly supported (with a loading of .70) government controlled environmental accountability. However, the most important variable for Australian data is 'Most organisations believe their operations do not have significant environmental impact' (C10). The result indicates that Australian and Indian managerial attitudes towards SEA have significantly changed from what was traditionally perceived as foundation creation, public relation activity and philanthropic work. The change in Indian managerial attitudes could be due to intense concern for economic growth, export–orientation, tradition of government influence over business, strong family/community business structure and increased government legislations and regulations (Balasubramanian et al., 2005). The result helps to better understand the increased social responsiveness and changing attitudes towards the SEA of Indian managers. There is a strong belief that CSR is an essential element in 'social uplift' and development, something very relevant to a developing economy (India), but less emphasised in UK, US or Western developed nations (Australia).

The result of this paper illustrates a positive managerial attitude towards various social and environmental issues. Respondents strongly supported incorporating tools into policy-making (for example acquiring ISO14001) and/or adopting component measures of performance to deliver favourable outcomes and stakeholder interests. These indicate that managers wish to maintain a pragmatic and/or moral legitimacy for their organisations. From a legitimacy theory perspective, an organisation would provide information if management perceived that the particular information is demanded by the societies within which it operates. The results offered some support for the argument that managerial attitude towards SEA had changed and were responding to the perceived importance of stakeholders. The social and economic development could influence stakeholders' needs in each country; whereas people in Australia treat social, environmental and economic issues as equally important. But in India, an emerging economy, people may prefer to

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place greater emphasis on economic issues more than environmental and social matters. These result confirmed this by showing different notions of social and environmental accountability by Australian and Indian managers.

Voluntary reporting of environmental information is often dismissed by critics as biased attempts to manipulate public perceptions. Real progress on SEA may ultimately depend on the ability of governments to impose and enforce reporting mandates (Fukukawa, et al., 2007). The Canadian Democracy and Corporate Accountability Commission (CDCAC, 2002) also documented a high level of support amongst Canadian investors for the establishment of formal social and environmental accounting standards. Frost and English (2002) stated that mandatory reporting can improve reporting; there is greater scope for reporting of social and environmental issues and their interaction with the broader community by companies. The current study documents strong support for the proposition that companies and executives/managers, should be held accountable for the environmental impacts of their actions. There is also strong support for mandatory CSR reporting by Indian respondents (mean 4.11 and factor loading .65) but not so Australian respondents (mean 3.44). Indian managerial attitudes have been supported by Kuasirikun (2005, p. 1054) who commented,

> "The autonomy of social and environmental accountants, which will always be finely balanced between social-environmental exigencies and company financial interest, can only in the final analysis be made viable by the establishment of a set regulatory accounting standards on social and environmental reporting that are implemented and enforced by governmental and statutory legislation" .

The limitation of the study is that the questions used in the survey of this study do not represent the entire framework on which attitudes toward SEA of Australian and Indian managers are formed. Moreover, culture was not explicitly explored as a possible factor in the study. Little research has been undertaken so far on the association between social and environmental attitudes and culture. Future research could include social aspects and undertake further empirical research among various developed and emerging economies, and explore the principal cultural contexts that shape social and environmental values and attitudes in more detail.

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Chapter 3 – Paper 2

EVALUATING CORPORATE ENVIRONMENTAL PERFORMANCE ACROSS DEVELOPED AND DEVELOPING ECONOMIES: EVIDENCE FROM AUSTRALIAN AND INDIAN COMPANIES

The second paper examines the extent to which companies in various industries measure Environmental Performance using indicators developed by Xie and Hayase (2007). It also examines how Environmental Performance Evaluation in Indian corporations differs from their Australian counterparts. Attitudes towards social and environmental accountability have an influence on the extent of social and environmental performance measurement. Positive managerial attitude towards social and environmental accountability will be reflected in their action towards business policy formation and on social and environmental performance measurement. Recent research showed that there is relationship between social and environmental reporting and performance. The direction of this relationship is not clear, some authors (Clarkson et al., 2008; Al-Tuwaijri et al., 2004) reported positive and some study (Cho and Patten, 2007; Patten 2002; Hughes et al. 2001) found negative relationship. Chapple et al. (2011) reported that high-polluting industries with poorer performance disclose more.

This paper uses a hierarchical framework identifying the key factors of (i) Environmental Management Performance and (ii) Environmental Operational Performance, which characterise Corporate Environmental Performance (CEP) measurements. Management Performance Indicators are subdivided into four groups, being (1) organisational system, (2) stakeholder relations, (3) operational counter measures (4) environmental tracking, whilst Operational Performance Indicators (OPIs) contain two groups of inputs and outputs.

The paper develops a structured questionnaire and uses environmental performance rating system developed by Xie and Hayase (2007). Various authors (Tyteca, 1996; Ditz and Ranganathan, 1997; Ilinitch *et al*., 1998; Jung *et al*., 2001; Olsthoorn *et al*., 2001) stressed that it is an urgent requirement to develop theoretically based, standardized and aggregated measures and to perform regular evaluations to provide the stakeholders with meaningful guidelines and a uniform basis for

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comparison. The Xie & Hayase's (2007) measurement was used because the study developed an operational environmental performance measurement (EPM) model to answer the question of what should be measured for third-party EPE. The study proposed to use a new concept – the environmental intensity change index (EICI) to answer the question of how to enable third-party EPE comparable across companies from different (sub-)sectors. The study also empirically tested the construct reliability of the EPM model and the comparability of the EICI. This theoretically based, empirically tested EMP model was readily available to use in different geographical area.

Primary data was collected from the Chemicals, Industrial Engineering and Pharmaceutical & Biotech industries. Using a sample size of 320 (170 Indian and 150 Australian), a factor analysis with varimax rotation on the six measures of Environmental Management Performance and Environmental Operational Performance was undertaken. A correlation table is further presented to analyse the covariance between factors including regression analysis on the relationships between the CEP measures as modelled. Finally, the paper introduces a computation method to overcome the difficulty of non-availability of certain OPI (input and output) data. Future researchers who face similar difficulties regarding OPI data will be able to use this computation.

Evaluating Corporate Environmental Performance across Developed and Emerging Economies: Evidence from Australian and Indian Companies

Abstract

As environmental protection becomes a critical factor in achieving sustainable development, firm stakeholders are becoming increasingly interested in corporate environmental performance. Many organisations evaluate their Corporate Environmental Performance (CEP) but few academic studies have sought to evaluate CEP. This study undertakes a CEP evaluation using an environmental performance measurement (EPM) model consisting of four Managerial Performance Indicators (MPIs: organisational system, stakeholder relations, operational countermeasures and environmental tracking), and two Operational Performance Indicators (OPIs: inputs and outputs). Principal Component Analysis (PCA) and Confirmatory Factor Analysis (CFA) are used to test reliability and validate the model construct. The relationship between MPIs and OPIs has also been analysed using correlation coefficients among the six indicators.

3.1 Introduction

As environmental protection becomes a central factor in achieving sustainable development, various corporate stakeholders including consumers, shareholders, regulators, creditors, fund managers, environmental groups and the general public are becoming interested in corporate environmental performance (Xie & Hayase, 2007). To meet this demand and moderate stakeholder pressures, many companies have reported environmental information via various reporting media (Ilinitch et al., 1998, Xie & Hayase, 2007), such as the annual report, company website and sustainability report. However, Kokubu et al., (2002) indicated that the information disclosed by various companies is different in terms of content, boundary, style and complexity. Therefore, it is

difficult for stakeholders to judge a companies' environmental performance and understand which companies are comparatively better or worse in protecting the environment based on information disclosed. Moreover, collecting, sorting and comparing environmental information from various channels are all tedious and time-consuming processes. This leads to an increasing demand for third-party organisations to independently and impartially evaluate corporate environmental performance (Xie & Hayase, 2007). That third party involvement may lead to increased accountability.

Environmental performance can be defined as 'the results of an organisation's management of its environmental aspects' (ISO, 1999) or, more precisely, "environmental performance is the totality of a firm's behaviour toward the natural environment (i.e., its level of total resource consumption and emissions)" (Wagner, Van, & Wehrmeyer, 2002). Companies implementing International Environmental Management Standard ISO 14001 certifications can expect to improve their environmental performance as an Environmental Management System is a structured approach to addressing the environmental bottom line. Schaltegger and Synnestvedt (2002) argued that economic outcome is influenced by not merely the level of environmental performance, but mostly the kind of environmental management with which a certain level is achieved. ISO 14001 is the world's most recognised Environmental Management System. Lower adoption of ISO 14001 in India could be attributable to various factors. It may be that Indian companies do not have the financial or operating resources to monitor environmental performance. Perhaps there is a lack of significant legislation requiring the measurement of environmental performance. Law enforcement mechanisms and penalties may not therefore be the same as in other developed economies.

Understanding environmental performance will therefore contribute to developing a more thorough Environmental Management System. It will enable organisations to develop strategies to reduce environmental impacts if they have proper systems to measure performance. It will allow organisations to identify problem areas that result in high costs to the organisation. Therefore it will assist organisations in reducing both cost and risk. Having an environmental performance measurement system will increase the long term value of the firm, thereby increasing competitiveness, profitability and share price. Understanding environmental performance will also help law makers implement effective legislation and enforcement mechanisms.

Most research work to date in the area of Corporate Environmental Performance measurement (Curkovic, 2003; Ilinitch et al., 1998; Metcalf, et al., 1995; Nakao, et al., 2007; Xie & Hayase, 2007) has been undertaken in the USA, Europe and Japan. Few academic studies have been undertaken in this area in Australia and Emerging Asian economies, leading to the conclusion that the process of measuring Corporate Environmental Performance (CEP) is still in the developmental stage (Curkovic, 2003). This is, at least partly, due to the lack of academic research in this field (Kolk & Mauser, 2002) and the logistical difficulties in undertaking research in developing economies. Many organisations have adopted a range of measures to evaluate CEP. But existing measures and ratings have an inherent risk of a vicious circle as pointed out by Ilinitch et al., (1998) that as "…rankings are based partly upon reputation and reputation is based partly upon rankings", this may inhibit a stakeholder's ability to interpret such data and make purposeful comparisons across companies and even confuse the public and reduce the credibility of these measures and ratings (Ilinitch et al., 1998, p. 385; Xie & Hayase, 2007). Scant research has been undertaken in the area of Corporate Environmental Performance evaluation in India. The study 'Directions, Innovations and Strategies for Harnessing Action' on India found that environmental performance amongst Indian corporations is typically ad hoc and restricted to compliance aspects, and even these are not fully addressed (Priyadarshini & Gupta, 2003).

The reason for focusing on India is that it is one of the most important emerging economies in Asia after China in terms of economic growth. According to the annual report of the ministry of finance (Government of India), the Indian economy has grown (growth in GDP) by 9.0% in 2007-08, 6.7% in 2008-09 and 7.2% in 2009-2010 (www.finmin.nic.in). According to the Indian Central Statistical Organisation, industrial output as measured by the Index of Industrial Production (IIP) recorded an annual growth rate of 6.8% in July 2009. (www.ibef.org). Because of its historical and social construct, India may not be as strict in implementing International Environmental Management Standard ISO 14000, and evaluating and reporting environmental performance, compared to counterparts in developed economies. Perry and Sheng (1999) found the three main reasons for environmental non-performance in Asian countries were (i) lack of government pressure, (ii) a lack of perceived benefit, either in terms of status with respect to consumers or within the business community and (iii) a perception that their organisation does not have any environmental impact. Lack of public pressure (such as NGOs and pressure groups), relatively low levels of public

accountability compared to the UK, USA and Australia, and the lack of pressure from other stakeholders to engage in environmental performance, may be factors why few Asian companies take environmental performance seriously (Thompson & Zakaria, 2004). This may be due to the distinct cultural, economic and social characteristic of the region, as discussed above.

The objective of this paper is to answer the question regarding the extent to which companies in various industries measure environmental performance across various indicators developed for third party performance evaluation. An operational EPM model from previous studies (Curkovic, 2003; Xie & Hayase, 2007) was adopted to answer this question. The model consists of Environmental Management Performance (EMP) and Environmental Operational Performance (EOP). EMP is measured by four Management Performance Indicators (MPIs); (i) organisational system, (ii) stakeholder relations, (iii) operational countermeasures and (iv) environmental tracking; whilst EOP is measured by two OPIs (inputs and outputs). Xie and Hayase, (2007) noted that the purpose of the model was a preliminary exploration into operationalising the constructs of the CEP measurement framework and the need to improve future studies. They commented that the robustness of the constructs should be tested by using a larger sample size and more industry involved empirical analysis. Using data from 320 (150 Australian and 170 Indian) companies within the Chemical, Industrial Engineering and Pharmaceutical & Biotech industries, the construct reliability of the EPM model was empirically tested.

This paper is organised as follows. Firstly, there is a review of the previous literature addressing the construct of EPM models. Then, the EPM model is established and operationalised. The data collection process is outlined, and the results of empirical tests presented. The paper is then concluded and discussed.

3.1.a Theoretical Foundation

The theoretical structures of numerous accounting studies rely on the legitimacy theory framework provided by Lindblom (1993) to explain why managers willingly release social and environmental information. For many organisations environmental performance is a component of overall organisational legitimacy. This paper examines the Australian and Indian Chemical, Industrial

Engineering and Pharmaceutical & Biotech industries, for which environmental performance is a prominent component of organisational legitimacy. Legitimacy is a condition or a status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part (Lindblom, 1993, p. 2). Legitimacy is a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995, p. 574). Organisational legitimacy cannot be continued without an account of constant compliance with norms, values, etc. but may be upheld in spite of isolated violations with normative expectations (Mobus, 2005). Stakeholders evaluate organisations based on their perceptions and/or assumptions regarding congruence between organisational values and their values. This implies that an organisation may maintain legitimacy diverging from expectations if the divergence is unknown to the relevant stakeholders (Mobus 2005).

Suchman articulated three types of legitimacy such as pragmatic, moral, and cognitive. He commented that they co-exist and strengthen one another in most situations. Pragmatic and moral legitimacy are discussed as they are most relevant to this study. Pragmatic legitimacy dynamics are often observed with stakeholders that directly interact with an organisation. The connection between the organisation and its stakeholders may include broad social interactions. Pragmatic legitimacy behaviours may focus on delivering favourable outcomes and stakeholder interests. The dynamics may focus on incorporating tools into policy-making and/or adopting component measures of performance (Suchman, 1995, p. 578). By addressing stakeholder expectations companies can obtain pragmatic legitimacy. Pragmatic legitimacy results from the calculations of self-interested individuals who are part of the organisation's stakeholder, e.g., the key stakeholders or the wider public (Suchman, 1995). It is a challenge for the organisation to influence individuals' calculations, persuade key stakeholders and the wider society about the usefulness of its output, procedures, structures and leadership behaviour (Ashforth & Gibbs, 1990). This can be accomplished in various ways, e.g., by direct benefits to constituents, by meticulous stakeholder management, by inviting stakeholders to participate in corporate decision-making, or through influential public relations. Stakeholder management literature has widely acknowledged this fact. Some authors (Mitchell et al. 1997; Savage et al. 1991) suggest to prioritise powerful vocal

stakeholders but others (Carroll and Buchholtz 2006; Freeman et al. 2010) warn managers not to overlook the importance of more vulnerable stakeholder groups for a company's legitimacy in the longer term.

Moral legitimacy depends on the organisational activities relative to the social contract and the positive evaluations of the organisation. Suchman (1995) stated that moral legitimacy "rests not on judgments about whether a given activity benefits the evaluator, but on judgments about whether the activity is 'the right thing to do". It "reflects beliefs about the activities which effectively promote social welfare" (p. 579). A morally legitimate company will be judged by its accomplishments, its work in accordance with socially accepted procedures, its leadership and its capacity to perform well. Palazzo and Scherer (2006) believe that moral legitimacy results from a conscious moral judgement on ''the organisation's output, procedures, structures and leaders'' (p. 73). They propose that moral legitimacy is socially created and considered and used to justify a company's actions, practices, structures and results. Environmental public interest groups, small investors and the general public concerned with environmental performance evaluate organisational legitimacy from a moral perspective. These groups remain important sources of legitimacy because of their potential to unite and challenge organisational legitimacy. They even create a legitimacy crisis although they largely have indirect interaction with organisational stakeholders.

Moral legitimacy is sometimes based on the evaluation of outputs and consequences of organisational action. Automobile emission standards are an environmental performance example of socially constructed means to evaluate consequences (Suchman, 1995, p. 580). From such a perspective, SER is seen as one of the strategies used by companies to seek approval of their activities from society. Legitimacy theory suggests that SER provides an important way of communicating with stakeholders, to convince them that the company is fulfilling their expectations (even when actual behaviour varies with some of these expectations) (Branco & Rodrigues, 2008).

Suchman distinguishes different strategies and related tactics for securing legitimacy status by recognising three broad (gaining, maintaining, and repairing) legitimacy objectives. Following Mobus (2005) this paper uses legitimacy dynamics and measures related to maintaining pragmatic and/or moral legitimacy. Maintaining legitimacy is a continuous process, it requires relatively low-

effort in comparison with gaining legitimacy. In this phase "once conferred by the stakeholders, legitimacy tends to be taken largely for granted" as constituents' scrutiny is relaxed; and they are satisfied "with evidence of ongoing performance and with periodic assurances of 'business-as-usual" (Ashforth & Gibbs, 1990, p. 183). However the maintenance of legitimacy is not as easy as it may appear. Legitimacy is a dynamic construct. Community expectations are not static they change over time. Organisations have to be responsive to the environment in which they operate to continue to be legitimate. An organisation could lose its legitimacy even if it has not changed its activities from activities which were previously deemed acceptable (Deegan et al., 2002, p. 319 - 20). One strategy for maintaining the gained level of legitimacy is to protect past accomplishments. "Environmental performance is a rising component of organisational legitimacy as societal norms increasingly recognize the negative impacts on the local, national, and global commons that often result from corporate operations (Mobus, 2005, p. 499).

3.2   Literature Review

Various authors (Curkovic, 2003; Ilinitch et al., 1998; Jung et al., 2001; Xie & Hayase, 2007; Young & Welford, 1998) have addressed the measurement and evaluation of CEP. The studies can be divided into two categories. The first focuses on developing EPM models for effective internal management decision making, and constructing appropriate Environmental Performance Indicators (EPIs) accordingly. The second attempts to develop an EPM suitable for third-party evaluation, seeking to make the model comparable across companies from different sectors or industries. The various EPM models established by researchers are outlined in Table 3.1.

Most EPM models focus on helping companies develop EPIs for internal management and external reporting. Whilst these EPM models and EPIs are useful and valuable for business managers to identify areas of success and failure, and to make corresponding decisions (Azzone et al., 1996), they are not appropriate for drawing comparisons across companies (Young & Welford, 1998) because there is a lack of agreement on what and how to measure. Five studies, Wells et al. (1992); Wolfe and Howes (1993); Eckel and Fisher (1992); Young and Welford (1998) and Thoresen (1999) have made their contributions to internal management.

Table 3.1 Summary of major Previous Studies on the Development of an Environmental Performance Measurement Model

Authors (year)	Purpose	Dimensions of EPM model
Wells et al. (1992)	Internal management	(1) Process improvement; (2) environmental results; (3) customer satisfaction.
Wolfe and Howes (1993)	Internal management	Ditto.
Eckel and Fisher (1992)	Internal management	(1) Policy and objectives; (2) performance measures; (3) systems to collect and report information; (4) on-going monitoring.
Metcalf et al. (1995)	Effective management	(1) Environmental management system; (2) EPM system.
Azzone et al. (1996)	External-oriented reporting	(1) State of the environment; (2) corporate environmental policy; (3) environmental management system; (4) environmental impact of products and processes.
Azzone and Noci (1996)	Internal decision making	(1) External environmental effectiveness; (2) company's environmental efficiency; (3) company's 'green' image; (4) firm's environmental flexibility.
Young and Welford (1998)	Internal management	(1) Environmental policy; (2) environmental management system; (3) environmental impacts of processes, products/services.
Thoresen (1999)	Internal management	(1) Product lifecycle performance; (2) management system performance; (3) manufacturing operations performance.
European Green Table (1993; in Welford, 1996)	Third-party evaluation	(1) Environmental management EPIs; (2) facility and operation EPIs.
Ilinitch et al. (1998)	Third-party evaluation	(1) Organisational system; (2) stakeholder relations; (3) regulatory compliance; (4) environmental impact.
Jung et al. (2001)	Third-party evaluation	(1) General environmental management; (2) input; (3) process; (4) output; (5) outcome.
Curkovic (2003)	Third-party evaluation	(1) Strategic system; (2) operational system; (3) Information system; (4) results.
Xie & Hayase (2007)	Third-party evaluation	(1) Organisational system, (2) Stakeholder relations, (3) Operational countermeasures; (4) Environmental tracking; (5) Input; (6) Output.
Sharma (2009)	Third-party evaluation	(1) Organization Design, (2) Information and Benchmarking (3) Environmental Impact Reduction.
Wagner (2009)	Third-party evaluation	(1) Stakeholder pressure, (2) Process innovation, (3) Product innovation and (4) Input
Hall and Wagner (2012)	Third-party evaluation	(1)Organisational system, (2) Regulator, (3) Public, (4) Markets (5) Input; (6) Output, (7) Risks, (8) Image.

Although the necessity and significance of constructing an EPM model suitable for comparison was advocated by various authors, previous studies have seldom been conducted in this field (Azzone et al., 1996; Curkovic, 2003; Metcalf et al., 1995). Kolk and Mauser (2002) commented that few studies have focused on EPM in a broad sense but there was no consensus on what, how and

where to measure. Ilinitch et al. (1998) noted that no single approach addresses common dimensions of CEP in a formal theoretical or systematic empirical way.

Eight studies have sought to establish comparable EPM models. The earliest effort was made by the European Green Table (EGT). The EGT model in Welford (1996) comprises two areas: environmental management EPIs, and facilities and operations EPIs. This EPM model, based on self-assessment, can both enhance internal decision making and provide the elements for consistent communication with external stakeholders (Welford, 1996). Based on previous studies (Lober, 1996; Wood, 1991), Ilinitch et al. (1998) developed an integrated matrix consisting of process/outcome and internal/external axes which encompass four dimensions: organisational system, stakeholder relations, regulatory compliance and environmental impact. Subsequently, after each empirical test, Ilinitch et al. (1998) found that there are five CEP dimensions since stakeholder relations are two dimensional. However, they did not analyse the relationships among the five dimensions.

The model by Jung et al. (2001) consists of five categories: general environmental management, input, process, output and outcome. However Jung et al. did not apply this model to measure actual CEP; instead, they used it to evaluate the disclosure level of the environmental information of 39 firms. Analysis of efficiency in major firms has shown that the number of employees has a critical influence on determining overall firm efficiency. Based on the Malcolm Baldrige National Quality Award criteria, Curkovic (2003) established a measurement system consisting of four factors, (i.e., strategic system, operational system, information system and results) by which to measure Environmentally Responsible Manufacturing (ERM). After empirically testing the constructs and measures by employing Confirmatory Factor Analysis (CFA), he found that the dropout rate of the measurement items he generated to operationalise the four factors was high and he concluded that this research stream was in its early stages. Curkovic's (2003) study was the first attempt at creating a consensus regarding how ERM is measured. Curkovic's (2003) study has developed and validated a preliminary measurement instrument for ERM. Therefore, he suggested that alternative EPM models should be developed, validated and compared with existing models to clarify the foundations of EPM. To answer the question of what should be measured for third-party EPE, Xie and Hayase (2007) developed an Environmental Performance Measurement

(EPM) model consisting of Environmental Management Performance (EMP) and Environmental Operational Performance (EOP), and hypothesised that EMP be measured by four management performance indicators (MPIs: organisational system, stakeholder relations, operational countermeasures and environmental tracking) and EOP be measured by two Operational Performance Indicators (OPIs: inputs and outputs). Further, to answer the question of how to enable third-party EPE to be comparable across companies from different (sub-) sectors, Xie and Hayase (2007) proposed the use of the Environmental Intensity Change Index (EICI) as a measure of OPIs.

Few authors (e.g., Tyteca, 1997; Zaim, 2004) have attempted to use a standardised technique to compare EPIs. An account for the presence of pollutants in the form of undesirable outputs, (productive efficiency theory) is the base of this method. Using self-defined, weighted coefficients, all the related aspects (input, output, pollutants etc.) taken into account are combined to produce a quantity ranging from zero to one. Zero indicated inefficiency and one indicated efficiency (Olsthoorn, Tyteca, Wehrmeyer & Wagner, 2001; Tyteca, 1996). A non-linear programming technique was the basis for the process. Results derived from this method are very responsive to the number of issues and sample units measured. Nevertheless this technique has numerous advantages such as lucid and evident standardisation, elasticity, and no previous weight determination requirement (Callens & Tyteca, 1999; Olsthoorn et al., 2001). This technique is restricted to contrasting comparable components too, such as plants or firms inside a business sub-sector (Callens & Tyteca, 1999). Contrasting the actual quantifiable CEP with encoded objectives or criteria is suggested by Dias-Sardinha and Reijnders (2001), Habler and Reinhard (2000) and Young and Welford (1998). Nevertheless, as a number of organisations do not set targets against which to measure their performance, this approach may not be possible.

Xie and Hayase (2007) propose to use the Environmental Intensity Change Index (EICI) as a measure of OPIs to enable third-party EPE comparable across companies from different (sub-) sectors. Although empirical tests confirmed that the EICI and the evaluations based on it are comparable across companies from different sub-sectors, it is not feasible for implementation in the emerging, as well as developed economies, because the required data is not completely available.

Sharma (2009) investigated the impact of organization design variables on environmental performance. The author found that organization design variables, information and benchmarking directly influence proactive environmental practices. Hall and Wagner (2012) examined the role of innovation for the link between the integration of strategic issues and the environmental performance of firms. Using structural equation modeling the authors reported that there is a positive association between the integration of strategic issues and the environmental performance of firms. They concluded that differences in the link between integration and environmental performance depend on the type of business model or innovation pursued. Wagner (2009) also investigated the nature of the association between corporate sustainability and competitive advantages and whether this association can be influenced positively by integrating environmental performance with the general strategy of the firm. Using cluster analysis the author found a significant link between environmental performance with innovation and competitive advantages for four different dimensions of competitive advantage.

3.3   The EPM Model

Following Xie and Hayase (2007), this study uses a hierarchical framework identifying the key factors that characterise CEP measurements (Figure 3.1). In this study CEP consists of Environmental Management Performance (EMP) and Environmental Operational Performance (EOP). Further, it has been hypothesised that EMP be measured by four Management Performance Indicators (MPIs); (i) organisational system, (ii) stakeholder relations, (iii) operational countermeasures and (iv) environmental tracking) and EOP be measured by two OPIs (inputs and outputs). These indicators and their measurement items could cover the entire range of activities critical to CEP.

In a broad sense, CEP is a component of social performance and thus a theory of social performance can be applied (Xie & Hayase, 2007). Wood (1991) defined Corporate Social Performance (CSP) as "a business organisation's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's social relationships". She suggested assessing CSP from three aspects: principles, processes and outcomes.
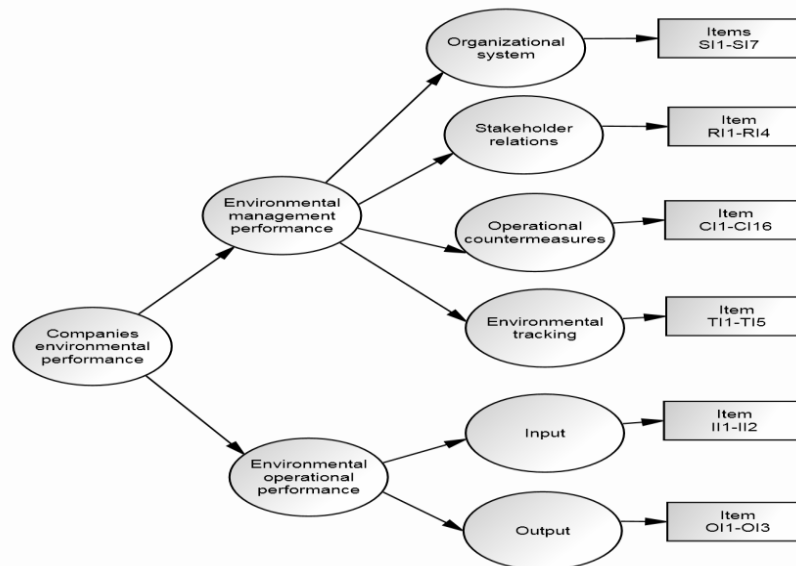
Figure 3-1 Conceptual Environmental Performance Measurement Model
Note: The items are those shown in Table 3.2.

Following Ilinitch et al. (1998) and Xie and Hayase (2007), the EPM model includes two dimensions: EMP measuring Environmental Management Processes, and EOP measuring environmental results. Apart from Ilinitch et al. (1998), almost all previous EPM models include these two dimensions.

MPIs and OPIs are meaningful and feasible for evaluating individual CEP. EMP and EOP are two interdependent aspects of CEP. MPIs are leading indicators of EOP because the company can tell whether appropriate management systems are in place before it sees whether these systems are having desired effects (Wells et al., 1992; Wolfe & Howes, 1993). Azzone et al. (1996); Ilinitch et al. (1998); Jung et al. (2001) and Tyteca et al. (2002) have outlined the importance of MPIs. Ilinitch et al. (1998) especially emphasised the significance of MPIs to outside stakeholders such as consumers and shareholders. Authors like Olsthoorn et al. (2001) argue that OPIs are not sufficient on their own to measure CEP and thus should be combined with MPIs and ECIs.

3.4   Operationalisation of the EPM Model

Following Xie and Hayase (2007) the study's EMP model is operationalised as follows.

3.4.1. Organisational Change that is designed to deal with environmental issues is considered as organisational system. The issues include environmental policy, targets, management

system, employee training, organisation, environmental accounting and auditing. Organisations set up environmental objectives and policies to address fundamental issues, such as the extent of responsibility the company will undertake or level of responsiveness it will adopt. Metcalf et al., (1995) suggest that the environmental unit within the company should be led by an accommodating individual and be staffed with competent people as it is an important constituent of the organisational system. As employees are essentially accountable for recognising and responding to perilous circumstances, employee training is critical. Well trained employees will competently identify and abate environmental problems (Metcalf et al., 1995). The foundation and support for forming environmental policy and targets within the company is provided by environmental accounting and auditing.

3.4.2. The interaction between the organisation and its various stakeholders is referred to as the stakeholder relationship (Ilinitch et al., 1998). Ilinitch et al. (1998) noted that relationships with stakeholders can have either positive or negative effects on CEP. The study limits its concentration to what an organisation should carry out to deal with stakeholder relationships as a proactive player in environmental management, as accomplished by Xie and Hayase (2007). Specifically, the study focuses on environment-related contributions to local communities and environmental reporting. A greater keenness to communicate environmental actions with stakeholders may be indicated by more reporting (Ilinitch et al., 1998). Moreover, an organisation's reputation will be affected by the disclosed environmental information and consequently might encourage the organisation to advance its performance. Reputation, reducing pressures, social responsibility, even financial benefits may be the purpose of environment-related contributions to local communities by an organisation. Although the motive can be varied, contributions should be regarded as a positive approach to stakeholder relations as they improve local people's environmental consciousness and in turn the local environment (Xie & Hayase, 2007).

3.4.3. The actions and measures adopted by a company in its ordinary operations to reduce its environmental load are referred to as operational countermeasures. Previous EPM models have rarely drawn on this indicator. Curkovic (2003) considered environmentally concerned

process/product design and checks on supplier's CEP in his model. Xie and Hayase (2007) used three categories countermeasures against global warming, countermeasures against environmental issues in process/product design and countermeasures against environmental risk. This paper includes all available actions and measures and classified them into three categories, being countermeasures against (1) environmental issues in process/product design; (2) environmental risk, and (3) global warming, as used in Xie and Hayase (2007).

3.4.4. The action taken by an organisation to track its environmental consequences is referred to as environmental tracking. An organisation will not be able to offer environmental information to its stakeholders without tracking, measuring and evaluating its environmental consequences. This process is the basis for informed decision making of an organisation (James, 1994). Tyteca et al. (2002) suggested that companies should be motivated to track and gather such information to achieve high quality and comparable EPIs.

The four MPIs depicted above are all qualitative measures. To assign numerical values to them, following Xie and Hayase (2007) we relied upon semantic differences based on corporate judgement. Quantitative metrics are used to measure OPIs. To draw meaningful comparisons across organisations and even industries, Ditz and Ranganathan (1997) suggested four key categories of OPIs from the fundamental resource inputs and outputs of a company. These categories such as material use, energy consumption, non-product output and pollutant releases might capture the common characteristics of organisations from different segments. Further, we followed Xie and Hayase's (2007) hypothesis that EOP be measured by two OPIs: inputs and outputs.

3.4.5. Inputs refer to the resources (e.g., water, and paper) and energy (e.g., oil, electricity, gas) used or consumed by a company. It is assumed that the more resources/energy the company uses the more wastes/pollutants it may produce. India lacks natural resources/energy. Therefore reducing the use of resources/energy is particularly essential. Furthermore, taking account of the efficiency of using resources/energy in EPE can inspire the organisation to progress its overall production competence (Xie & Hayase, 2007).

3.4.6. Outputs refer to the wastes and pollutants generated by business activities, including industrial wastes disposed, water discharged, pollutants released to the air (CO_2, SO_x and NO_x) and water pollution (COD or BOD).

3.5   Methodology

3.5.1   Survey Design

The survey questionnaire was structured and divided into two parts. Part I, the introductory section compiles the respondents' personal and organisational details. Part II consists of Management Performance Indicators and Operational Performance Indicators. Similar to Xie and Hayase (2007) Management Performance Indicators (MPIs) was further subdivided into four groups: (1) organisational system (OS) (Question no 2, 3, 4, 5 & 6); (2) stakeholder relations (SR) (Question no 7, 8, 9, 10 & 11); (3) operational counter measurement (OCM) (Question no 12); and (4) environmental tracking (ET) (Question no 13). Each group consists of various measurement items. Operational Performance Indicators (OPIs) were subdivided into two groups of inputs (Question no 14) and outputs (Question no 15, 16 & 17) and each group also consisted of various measurement items. The questions are drawn and adapted from Xie and Hayase (2007). The measurement items for each indicator drawn from previous studies (Curkovic, 2003; Ilinitch et al., 1998; Nakao, et al., 2006; Xie & Hayase, 2007) are listed in Table 3.2. Altogether, there are 36 measurement items for the MPIs and 11 for the OPIs.

Respondents were requested to write down the actual amount of input used and output released by their companies during the accounting years 2005 and 2006 for the 11 OPI items. Some environmental attributes, such as 'organiser's position in a company' or 'environmental commitment', are inherently qualitative and cannot be precisely quantified (Fiksel, 1996). Thus self-reported perceptual measures have been used extensively in the literature, with success (Curkovic, 2003). Therefore, following Xie and Hayase (2007) we designed multiple-choice questions for the 36 MPI items (see Table 3.2). The survey did not use perceptual questions for the MPI items.

Table 3.2 The MPIs, OPIs and Corresponding Measurement items Included in the Questionnaire

Indicators and measurement items	Content outline of the question
Organisational system (Q. no. 1 to 6) SI1 Target SI2 Adoption scope of ISO 14001 SI3 Adoption time of ISO 14001 SI4 Environmental organisation SI5 Environmental head's position in the company SI6 Environmental accounting SI7 Environmental auditing SI8 Environmental education	Types of target Company's scope involved in ISO 14001 Time for the first adoption of ISO 14001 Current Situation Level of the environmental head's position in the company Company's scope involved in environmental accounting Company's scope involved in environmental auditing Scope and frequency of environmental education
Stakeholder relations (Q. no. 7 to 11) RI1 Environmental disclosure scope RI2 Environmental disclosure content RI3 Environmental disclosure method RI4 Contributions to local communities	Company's scope involved in environmental disclosure Types of environmental information disclosed Media used to disclose environmental information Types of contribution activity
Operational countermeasures (Q. no. 12) *Countermeasures against global warming* CI1 Using renewable energy CI3 Installing energy-saving equipment CI4 Using environmentally friendly cars *Countermeasures against environmental issues in process/product design* CI5 Reducing, reusing and recycling wastes CI6 Reducing the use of package materials CI7 Implementing environment concerned design CI8 Implementing environment marketing CI9 Managing and recycling used products CI10 Expanding product lifetime CI11 Checking suppliers' EMSs *Countermeasures against environmental risk* CI12 Establishing risk management system CI13 Reducing the use of chemicals CI14 Measuring discharge of toxic chemicals CI15 Training to deal with emergency regularly CI16 Inspecting toxic-related tanks/pipes regularly CI17 Specifying explicit responsibilities CI18 Making out risk management manual	How proactively is your company implementing this measure?
Environmental tracking (Q. no. 13) TI1 Tracking scope of energy use TI2 Tracking scope of resource use TI3 Tracking scope of general wastes TI4 Tracking scope of industrial wastes TI5 Tracking scope air and water pollution TI6 Tracking scope of greenhouse gases	Company's scope tracking energy use Company's scope tracking resource use Company's scope tracking general wastes Company's scope tracking industrial wastes Company's scope tracing water pollution Company's scope tracking greenhouse gases
Inputs (Q. no. 13 to 14) II1. Oil use (kl) II2. Gas use (m3) II3. Electricity use (kW h) II4. Water use (m3) II5. Paper use (t)	Amount consumed in 2005, 2006

Outputs (Q. no. 15 to 17)
 	
OI1. Industrial waste disposal (t)
OI2. CO2 emission (t)
OI3. SOx emission (kg)
OI4. NOx emission (kg)
OI5. BOD (kg)
OI6. COD (kg)
	Amount disposed in 2005, 2006
	Amount emitted in 2005, 2006
	    Same
	    Same
	    Amount in 2005, 2006
	    Same

Source: Adapted from Xie and Hayase (2007)

In order to increase the degree of objectivity of the respondents' answers to the questions, the survey enquired about the concrete and objective situations of relevant environmental management processes (see details in Inputs & Outputs in Table 3.2). The survey used questions for operational countermeasures and asked respondents to assess how proactive their companies were in implementing the countermeasures on a five-point Likert scale.

3.5.2 Data Collection

The questionnaire survey was conducted in Australia and India during 2008-2009, through a professional data collection agency, Market Xcel Data Matrix Pvt Ltd, which had the necessary expertise, manpower and personal relationships with organisations in India and in Australia to facilitate a higher response rate. A final sample size of 320 (170 Indian and 150 Australian from Chemical, Industrial Engineering and Pharmaceutical & Biotech) was ultimately received and used in the study. These industries were selected based on the social perceptions that organisations operating in these Chemical, Industrial Engineering and Pharmaceutical and Biotech industries are more likely to be considered environmentally sensitive (Elkington, 1994). Industry classification and companies of both countries were selected randomly from the list of companies provided by the electronic database, DataStream Advance 4. The list of Australian and Indian companies was classified according to their industry membership. An industry wide list of selected companies along with a questionnaire was supplied to Market Xcel Data Matrix Pvt Ltd, for collating the information from Australia and India. This data collection company maintained data originality and independence by following the 'International Code on Market and Social Research' (ICC/ESOMAR) guidelines, (www.esomar.org) and maintained international delivery standards. To maintain data originality and reduce the large risk of a low response rate, the author was personally present in India (at the start to provide instructions) and Australia during the data collection period and oversaw (providing occasional instructions) the data collection process to avoid possible data duplication and fraud, and to ensure that the data collected was original, legitimate and reliable.

In both countries, the firm Market Xcel Data Matrix Pvt Ltd randomly selected participants from their database who were middle / senior level corporate / branch managers of selected Australian and Indian companies within the Chemical, Industrial Engineering and Pharmaceutical & Biotech industries. The firm delivered questionnaires to the selected participants, who had the option to

complete it in their own time. The firm personally collected the completed questionnaires after a period of approximately one week from the Indian participants and by post/over the phone from Australian participants. The summary of the participant's demographics are presented in Table 3.3.

Table 3.3 Summary of the Participants' Demographics

		Australia		India	
Characteristic	Attribute	N=150	Percent	N=170	Percent
Gender	Male	123	82.0	153	90.0
	Female	27	18.0	17	10.0
Age	Under 25	2	1.3	5	2.9
	25-34 years	33	22.0	46	27.1
	35-44 years	55	36.7	64	37.6
	45-54 years	33	22.0	37	21.8
	55+ years	27	18.0	18	10.6
Country of birth	Australia	111	74.0	0	0
	India	5	3.3	170	100
	Others	34	22.7	0	0
Period of residence	Less than 10yrs	18	12.0	0	0
	10-20 Years	6	4.0	0	0
	Over 20 Years	126	84.0	170	100
Education	Diploma	25	16.7	14	8.2
	Bachelor	65	43.3	77	45.3
	Masters	33	22.0	77	45.3
	Other	27	18.0	2	1.2
Occupation	Director	53	35.3	19	11.2
	Manager	87	58.0	123	72.4
	CEO	2	1.3	4	2.4
	Chief Accountant	4	2.7	4	2.4
	Other	4	2.7	45	26.6

Due to the focus on personal relationships and difficult logistical environment in India, it was prudent to have a professional firm deliver and collect the questionnaires, as mailed questionnaires would most likely not solicit a response. At the time of delivering the questionnaire, respondents were informed that their participation in the survey would be voluntary and would not lead to any consequences pertaining to non-participation or completion of the questionnaire.

3.5.3 Point Assignment to the Selected MPI Items

In order to perform statistical analysis, numerical values were assigned to the selected MPI items. As described previously, the items for operational countermeasures can be assigned values on a five point Likert scale. For the other MPI items, a rating system was developed (attached in appendix C) similar to that of Metcalf et al. (1995) and Xie and Hayase (2007). After this operation,

a data set was complete for the MPI items. The descriptive statistics of these items are reported in Table 3.4.

3.5.4   Data analysis procedure

The data analysis for this study was undertaken using a three step procedure. Step 1 related to the descriptive statistics within SPSS software, and involved checking participants' mean responses and standard deviation for all survey questions. The findings enabled the exploration of responses to each survey question and skewness (symmetry) and kurtosis (peaked or flat) of the data. Distribution was identified as normal if the skewness and kurtosis values did not exceed 1.96 (Hair, Anderson et al., 1998).

Step 2 involved factor analyses with varimax rotation on the four measures of Environmental Management Performance (EMP) and two measures of Environmental Operational Performance (EOP). Factor analysis enables the researcher to explore the underlying dimension within each variable mentioned above and understand the percentage of variance or information explained under each dimension (Gnanadesikan 1997). Following factor analysis in step 3, a correlation table is presented to analyses the covariance between the factors including regression analysis on the relationships between Corporate Environmental Performance (CEP) measures as modeled in Figure 3.1. Regression analysis enabled the researcher to understand the individual contribution of EMP and EOP measures to CEP. Two models were tested using Australian and Indian data using AMOS Version 18 software (see appendix C). It enables researchers to specify and measure latent or unobserved constructs through their measured indicators (Byrne 2009). The visual approach to AMOS provides an interactive and convenient way of undertaking any analysis with latent or unmeasured constructs. This study used AMOS since it involves the latent variable CEP that is measured through indicators of EMP and EOP.

3.6   Responses to Scale Items

As mentioned earlier, following Xie and Hayase (2007), responses to statements under organisational system (SI1-SI7 – questions 1 to 7), stakeholder relations (RI1-RI4 – questions 8 & 11) and environmental tracking (TI1-TI5 – questions 13) using concrete and objective situations

were scaled. Responses under operational countermeasures (CI1-CI16 – questions 12) were graded using a five-point Likert scale. Considering the objectivity of the statements a percentage of frequency distribution on each scale item was undertaken, including mean score responses and Standard Deviation (SD) to explore the data.

Table 3.4 Percentage responses by Indian and Australian managers on a five point descriptive scale (%)

	INDIA						AUSTRALIA					
Indicators	1	2	3	4	5	Mean (SD)	1	2	3	4	5	Mean (SD)
SI_1	0	0	14.4	24.6	61.1	0.53 (.73)	0	0	37.3	30.0	32.7	2.05 (.84)
SI_2	0	0	21.6	40.7	37.7	0.84 (.76)	0	0	55.3	24.7	20.0	2.05 (.67)
*SI_3	0	16.2	18	65.9	0	1.50 (.76)	0	0	24.0	8.0	68.0	1.56 (.86)
SI_5	0	0	18.0	30.5	51.5	0.66 (.77)	0	0	18.7	20.7	60.7	1.58 (.79)
SI_6	0	0	16.8	29.9	53.3	0.63 (.76)	0	0	14.7	12.7	72.0	1.45 (.82)
SI_7	0	0	21.0	39.5	39.5	0.81 (.76)	0	0	30.7	11.3	58.0	1.73 (.90)
*RI_1	0	0	13.8	35.3	50.3	0.63 (.72)	0	0	13.3	21.3	65.3	1.48 (.72)
RI_4	36.6	24.6	20.1	13.4	5.20	2.26 (1.23)	2.7	13.2	18.7	34.0	31.3	2.22 (1.11)
CI_1	49.1	10.2	11.4	25.1	4.2	2.25(1.39)	60.7	6.7	17.3	7.3	8.0	1.95 (1.34)
CI_2	53.3	4.2	13.8	21.0	7.8	2.26 (1.47)	65.3	7.3	13.3	4.7	9.3	1.85 (1.34)
CI_3	9.7	11.5	9.1	32.1	37.6	3.76 (1.33)	47.3	13.3	13.3	10.0	16.0	2.34 (1.53)
CI_4	1.8	6.6	6.0	16.2	69.5	4.45 (.99)	20.0	6.7	2.0	22.0	49.3	3.74 (1.59)
CI_5	18.2	12.1	6.1	44.8	18.8	3.34 (1.40)	55.3	11.3	6.7	9.3	17.3	2.22 (1.59)
CI_6	3.6	5.4	20.4	34.7	35.9	3.94 (1.05)	22.0	10.0	16.7	22.0	29.3	3.27 (1.52)
CI_7	9.0	9.6	10.2	44.3	26.9	3.71 (1.22)	44.0	10.7	15.3	14.0	16.0	2.47 (1.54)
CI_8	10.8	11.1	9.6	30.7	37.3	3.72 (1.36)	24.0	14.0	14.0	10.0	38.0	3.24 (1.64)
CI_9	3.0	9.0	7.8	43.1	37.1	4.02 (1.04)	22.7	9.3	18.7	19.3	30.0	3.25 (1.53)
CI_{10}	5.4	9.0	16.3	43.4	25.9	3.75 (1.10)	16.7	7.3	16.7	23.3	36.0	3.55 (1.46)
CI_{11}	5.4	6.6	12.0	32.3	43.7	4.02 (1.15)	36.7	17.3	8.7	13.3	24.0	2.71 (1.63)
CI_{12}	28.7	11.4	11.4	25.1	23.4	3.03 (1.57)	25.3	12.0	16.0	23.3	23.3	3.07 (1.52)
CI_{13}	5.4	8.4	18.7	33.1	34.3	3.83 (1.16)	24.7	13.3	19.3	13.3	29.3	3.09 (1.56)
CI_{14}	1.8	4.8	3.0	41.2	49.1	4.31 (.89)	10.0	6.0	9.3	15.3	59.3	4.08 (1.35)
CI_{15}	7.8	18.0	6.0	38.9	29.3	3.64 (1.29)	22.7	8.7	12.7	18.7	37.3	3.39 (1.59)
CI_{16}	0.6	4.8	6.0	23.4	65.3	4.48 (.86)	19.3	12.0	16.0	16.7	36.0	3.38 (1.54)
TI_1	0	0	21.0	11.4	67.7	1.53 (.82)	0	0	12.0	67.3	20.7	1.91 (.57)
TI_2	0	0	16.8	17.4	65.9	1.51 (.77)	0	0	12.7	68.0	19.3	1.93 (.56)
TI_3	0	0	56.3	28.7	15.0	1.59 (.74)	0	0	10.7	73.3	16.0	1.95 (.52)
TI_4	0	0	57.5	30.5	12.0	1.54 (.70)	0	0	13.3	72.7	14.0	1.99 (.53)
TI_5	0	0	56.9	29.3	13.8	1.57 (.72)	0	0	10.0	74.0	16.0	1.94 (.51)

*Note: Responses to SI_4, RI_2 and RI_3 are categorical and hence will be discussed in the paper.

Overall, Indian managers showed a wide spread in their mean score responses, ranging from 0.53 to 4.48, indicating either a very low or high support regarding most statements in the study (see Table 3.4). Further analysis revealed that managers' responses to organisational system and stakeholder relations showed low responses to statement items, as indicated by their mean range of 0.53 to 1.50 for organisational system and 0.63 to 2.26 for stakeholder relations. However, managerial responses to operational countermeasures indicated a low to moderate support of 2.25

to 4.48 and their responses to environmental tracking were in close mean range of 1.51 to 1.59. The distribution of responses to individual scale items revealed a form of pattern where most respondents were not in support of or willing to relate with environmental related activity mentioned in the statements. Although the information illustrates that most managers were not in support of their responses to statements under operational countermeasures (CI_1 to CI_{16}), results reveal that in practice most managers or companies took precautions to reduce environmental hazards caused by their organisational activity.

Overall, Australian respondents displayed a wide spread in their mean score responses, ranging from 1.45 to 4.08, suggesting lower to moderate support of most of the survey questions (see Table 3.4). However, the standard deviation of Indian respondents was relatively lower than Australian respondents reflecting greater consensus in attitudes (Shafer 2006). The mean scores for organisational system variables (SI_1 to SI_7) ranged from 1.73 to 2.05 and stakeholder relations (RI_1 to RI_4) from 1.48 to 2.22 indicating a moderate support to survey items. However, managerial responses to survey items under the operational countermeasure (CI_1 to CI_{16}) ranged from 1.85 to 4.08, indicating respondents either supported or completely did not support items under operational measures. Finally, the variable environmental tracking received a close mean score response of 1.91 to 1.99 indicating respondent consensus.

The mean scores for variables organisational system (SI_1 to SI_7) ranged from 1.73 to 2.05 and stakeholder relations (RI_1 to RI_4) ranged from 1.48 to 2.22 indicating a moderate support to survey items under these two variables. However, manager responses to survey items under operational countermeasure (CI_1 to CI_{16}) ranged from 1.85 to 4.08. This finding indicates that respondents either supported or completely did not support items under operational measures. Finally, the variable environmental tracking received a close mean score response of 1.91 to 1.99 indicating consensus amongst respondents.

3.7   Developing Estimates of Input Output Data

Input-output data as indicators of OPIs use different quantitative metrics/units to measure the resources used (input - oil, gas, electricity, water and paper use) and waste discharged (output - Industrial waste disposal, CO_2, SO_X and NOx emission) by companies across four categories:

material use, energy consumption, non-product output and pollutant releases (Ditz and Ranganathan 1997). Following Xie and Hayase (2007) we used the environmental intensity change index in our survey to measure OPIs. However, due to the inability to collect relevant data (respondents did not provide any information about these questions) on these indicators, an estimated value on the Input and Output data was introduced in the study. Considering the significance of these indicators in measuring OPIs (operational performance indicators) and in applying the EPM model as the final objective of this study, a decision was taken to predict the values of input-output data based on the responses received from other items in the survey. This involved computing new variables in SPSS, the details of which are discussed in the following section.

Responses to survey items under operational countermeasures and environmental tracking were used to estimate the input and output of sample companies. It is proposed that the summation of both these variables can help predict resources used and waste discharged by companies in their regular course of operation. However, estimated values are useful to run the CEP model and predict its validity. Rubin (1976); Chin, Marcolin and Newsted (1996) and Royston (2005) all use imputation methods to predict the values of missing data/responses within a variable. This paper likewise also uses the imputation method. We were unable to judge whether missing data was random or followed a standard pattern when interpreting the validity of estimated data. Hence, equations and imputation are a more appropriate approach in predicting the validity of data and testing the CEP model. This step will enable future researchers to use this computation method to develop estimated data sets for OPIs in the absence of actual input-output data.

3.7.1   Computation of Input Output Data:

3.7.1.1 To estimate the values for resources actually used (input) and waste discharged (output) by the sample companies, responses to survey items under operational countermeasures (CI_1 to CI_{16}) and environmental tracking (TI_1 to TI_5) were used. The items listed under operational counter measures refer to the actions adopted by companies to reduce their environmental loads, whereas environmental tracking refers to the action taken by companies to track their environmental results. It is proposed that the summation of both of

these variables can help predict resource usage and waste dischargement by companies during their regular course of operations. Hence the following model:

(i) Input = f (CI_i, TI_j) ; i = 1,2,3,4,5,6

$$j = 1,2$$

CI = Operational countermeasures and TI = Environmental tracking

i = Operational countermeasures items 1 to 6

j = Environmental tracking items 1 to 2

(ii) Output = f (CI_m, TI_n); m = 7, 8, 9, 10, 11,12,13,15, 16

$$n = 3, 4, 5$$

CI = Operational countermeasures and TI = Environmental tracking

m = Operational countermeasures items 7 to 16

n = Environmental tracking items 3 to 5

3.7.1.2 Survey items were then grouped in both these variables into five categories: 1) estimated energy use (EEU) 2) estimated resource use (ERU) 3) estimated industrial output (EIO); 4) estimated gases output (EGO) and; 5) estimated pollutant releases (EPR). These five categories correspond to survey items used by Ditz and Ranganathan (1997) and Xie and Hayase (2007) to measure resource input and waste output in their study.

3.7.1.3 To compute the variables EEU, ERU, EIO, EGO and EPR following equations were used:

(iii) $EEU = \dfrac{CI_1 + CI_2 + CI_3 + TI_1}{4}$

(iv) $ERU = \dfrac{CI_4 + CI_5 + CI_6 + TI_2}{4}$

(v) $EIO = \dfrac{CI_7 + CI_8 + CI_9 + TI_3}{4}$

vi) $EGO = \dfrac{CI_{10} + CI_{11} + CI_{12} + TI_4}{4}$

vii) $EPR = \dfrac{CI_{13} + CI_{15} + CI_{16} + TI_5}{4}$

Where   EEU= Estimated Energy Use

ERU = Estimated Resource Use

EIO = Estimated Industrial Output (EIO)

EGO = Estimated Gases Output (EGO)

EPR = Estimated pollutant Releases (EPR).

$CI_{1\ to\ 16}$ and $TI_{1\ to\ 5}$ (see table 3)

Item CI_{14} (*prepare and use of risk management and occupational health and safety (OHS) manuals for emergency situations*) was not used in the computation analysis because the item description did not convey any commonness with the description of the estimated four variables in the study. Therefore variables EEU, ERU were used as proxy indicators for input and variables EIO, EGO, EPR were used as proxy indicators for output. The use of these five variables resulted in few changes in the survey data. First the analysis through year wise input/output data (2005/2006) and the use of metrics or quantities for resources used or discharged in Xie and Hayase's surveys were revised to absolute values on a five point Likert scale. However, the estimated values were useful to run the CEP model and predict its validity against Indian and Australian managers.

3.8 Factor Analysis and Construct Reliability of the Factor Measures

Factor analysis with varimax rotation was undertaken on the variables OS, OCM and ET using Indian and Australian data separately. The input-output data was not factor analyse since these items were estimates based on other variables in the study. Also the factor analysis for stakeholder relations (RI_1 to RI_4) was not undertaken in the study, given the low response rate for items RI_2 and RI_3 in the study. Hence, only RI_1 and RI_4 were objectively measured using a Likert scale. Items were renamed RI_1 -'environmental information' and RI_4 - 'volunteer work' based on their item description as representing the two factors under stakeholder relations.

For the Indian data, factor analysis on OS resulted in two factors collectively explained 64% of the variance (see Table 3.5). The first 'environmental inspection' factor consisted of three items (SI_6, SI_5, SI_2) within the range of .84 to .88. Items were grouped based on commonality of items (Gerbing & Anderson, 1984). Factor two consisted of three items (SI_1, SI_7 and SI_3) within the range .62 to .86 and was grouped as 'environmental control'. Both 'environmental inspection' and

environmental control collectively explain the variable 'organisational system'. The variable 'environmental tracking' did not produce any rotational results since all its 5 items (TI_1 to TI_5) constituted one uni-dimensional factor. We re-named these indicators as energy use (item TI_1), resource use (TI_2), industrial waste (TI_3) and water drainage (TI_4), based on their item description.

Table 3.5 Factor analysis of Indian data

Organisational system N= 170	Factor 1	Factor 2
Environmental Inspection		
SI_6 : Environmental auditing	.84	
SI_5: Environmental accounting system	.83	
SI_2: Adoption scope of ISO 14001	.88	
Reliability	.72	
Environmental control		
SI_1: Environmental target		.86
SI_7: Environmental education		.70
SI_3: Environmental committee		.62
Reliability		.90
Operational counter measures		
Operational safeguard		
CI_{13} Estimate output of harmful chemical discharge	.73	
$C1_{15}$: Use training programs for Env. Disaster Mgmt.	.72	
CI_{12}: Recycling of products at the end of their life	.66	
CI_6: Change production process to reduce harmful effects	.65	
CI_7: Market the environment benefits of products	.61	
Reliability	.70	
Operational resources		
CI_1: Use of solar power renewable energy		.91
CI_2: Use of wind power renewable energy		.88
CI_5: Use environmental friendly motor vehicles		.83
CI_9: Lengthen the PLC in order to reduce overall energy consumption		.70
CI_{10}: Reduce the use of packing or wrapping materials		.68
CI_3: Use co-generation initiatives		.66
CI_4: Use energy saving device(s) at the workplace		.65
CI_{11}: Checking suppliers environmental management system		.64
Reliability		.90

The variable 'operational counter measures' consisted of two factors that collectively explained 73% of the total variance. Factor one (operational safeguards) consisted of five items (CI_{13}, CI_{15}, CI_{12}, CI_6, and CI7) within the range .61 to .73, and represented the precautionary actions taken by companies to reduce environmental load. Factor two (operational resources), consisted of eight items (CI_1, CI_2, CI_5, CI_9, CI_{10}, CI_3, CI_4, CI_{11}) that ranged from .64 to .91. The remaining three items (CI_8, CI_{14} and CI_{16}) were less than 0.3 (Hair et al., 1998) and hence were deleted from the analysis.

The factor analysis of Australian data revealed that 'organisational system' consisted of two factors which collectively explained 65% of the total variance (see Table 3.6). Factor one consisted of

three items (SI$_5$, SI$_1$, SI$_6$) with the range .61 to .78. This factor was named as 'environmental system' because items represented the system of environmental accounting practice (SI$_5$), organisational target (SI$_1$) and auditing (SI$_6$). The second factor 'environmental awareness' consisted of three items (SI$_3$, SI$_2$, SI$_7$) with the range .78 to .88. Unlike Indian data, items under operational counter measures for Australian managers consisted of four factors that explained a variance of 72.14%.

Table 3.6 Factor analysis of Australian data

Organisational system N= 150	Factor 1	Factor 2	Factor 3
Environmental system			
SI$_5$: Environmental accounting system	.78		
SI$_1$: Environmental target	.61		
SI$_6$: Environmental auditing	.61		
Reliability	.82		
Environmental Awareness			
SI$_3$: Environmental committee		.88	
SI$_2$: Adoption scope of ISO 14001		.86	
SI$_7$: Environmental education		.78	
Reliability		.90	
Operational counter measures			
Operational usage			
CI$_{14}$: Use risk management & OHS manuals	.74		
CI$_8$: Use of recycling during production process	.65		
CI$_4$: Use energy saving device at work	.62		
CI$_2$: Use wind power renewable energy	.68		
CI$_5$: Use environmental friendly motor vehicles	.67		
Reliability	.89		
Product			
CI$_{12}$: Recycling of products at the end of their life		.77	
CI$_9$: Lengthen PLC for overall energy consumption		.69	
CI$_7$: Market the environment benefits of products		.64	
CI$_{11}$: Checking suppliers' EMS before purchases		.62	
Reliability		.71	
Hazard Management			
CI$_{16}$: Check hazard Mgmt systems			.76
CI$_6$: Reduce harmful effects on the environment			.67
CI$_{15}$: Use training programs for Env. Disaster Mgmt.			.61
Environmental tracking			
Water pollution			
TI$_4$: Tracking scope of water drainage	.83		
TI$_5$: Tracking scope air and water pollution	.74		
Reliability	.60		
Other resources			
TI$_1$: Tracking scope of energy use		.72	
TI$_2$: Tracking scope of resource use		.67	
TI$_3$: Tracking scope of industrial wastes		.55	
Reliability		.68	

Factor one (operational usage), consisted of five items (CI$_{14}$, CI$_8$, CI$_4$, CI$_2$, CI$_5$) with high loading (.67 to .74). The second factor (products) with items CI$_{12}$, CI$_9$, CI$_7$ and CI$_{11}$ also ranged from .62 to .77. This is because all items in this factor represented an aspect related to a product such as

product recycling (CI_{12}), product life cycle (CI_9), market environmental benefits of product (CI_7) and checking suppliers EMS systems for making products (CI_{11}). Factor three, 'hazard management' consisted of three items (CI_{16}, C_{I6} and CI_{15}) with a range from .61 to .76. The remaining items either cross loaded or showed values <0.3, indicating the fourth factor was irrelevant. The final variable, environmental tracking, constituted of two factors that explained 56.94% of the variance. Factor one consisted of two items TI_4 (*Tracking scope of water drainage*) and TI_5 (*Tracking scope air and water pollution*) and hence were named 'water pollution' based on item commonality. Factor two consisted of three items: TI_1 (*Tracking scope of energy use*), TI_2 (*Tracking scope of resource use*) and TI_3 (*Tracking scope of industrial wastes*). Hence, this factor was named 'other resources' since there was not strong consensus between the items on the type of resources used or waste discharged.

Based on these factor results composite scales were created for both Indian and Australian data in order to test the full CEP model (see next section).

3.9   The Relationships between the CEP Measures

The final stage of the analysis assessed the correlation between all factors relating to EPM and OPM. We conclude this section by modelling the relationship between each of the factors of EPM and OPM to CEP by drawing latent construct[10] using AMOS software. In this study, the latent construct CEP is measured by responses to two factors: EPM and OPM (see Figure 3.2). Variables EPM and OPM are second order latent constructs measured by their first order latent factors. In this way EPM is measured by its first order latent factors of OS, SR, OCM and ET. OPM is measured by input and output data. The first order factors are measured by observed variables or reflective indicators represented by rectangles in Figure 3.3. In this sense, the latent constructs are independent variables and the reflective indicators are dependent variables. Latent variables will be discussed further when testing the full CEP model later in the analysis. The following discussion is on the correlation between the factors identified in both the Indian and Australian data. The correlation coefficients for 16 factors identified with Indian managers are shown in Table 3.7.

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[10] A latent construct is the Operationalisation of a construct that is not directly observed but inferred on the basis of the measured indicators or surveyed items underlying that latent construct (Byrne 2009).

Table 3.7 Correlations amongst EMP and OPI factors of Indian Managers

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.	Env_Inspection	1														
2.	Env_control	.36**														
*3.	Env_Information	.16*	.09													
*4.	Volunteer_Work	.20*	.08	.02												
5.	Op_safeguard	.04	.18*	.05	.13											
6.	Op_Resources	.20	.01	.23**	.11	.37**										
**7	Energy_use	.11	.16*	.20**	-.24**	-.22**	.07									
**8	Resource_use	.13	.26**	-.15	-.08	-.27**	-.19	.75**								
**9	Industrial_waste	.09	.17*	-.09	-.17*	-.27**	.02	.60**	.67**							
**10	Water drainage	.15	.24**	-.13	-.03	-.19*	-.10	.36**	.37**	.46**						
**11	Pollution	.13	.18*	-.10	-.13	-.29**	-.07	.50**	.57**	.58**	.45**					
12.	EEU	.08	.05	.23**	-.20*	.12	.79**	.37**	.20**	.28**	.08	.13				
13.	ERU	.03	-.02	-.02	.08	.44**	.47**	.16	.13	.08	-.04	.08	.09			
14.	EIO	-.06	-.07	-.02	.01	.61**	.37**	-.04	-.04	.08	-.02	-.04	.07	.47**		
15.	EGO	.07	-.07	-.02	.11	.60**	.41**	.08	-.10	-.04	.17	-.07	.18	.36**	.44**	
16.	EPR	.04	-.13	-.14	.23*	.70**	.19*	-.08	-.05	-.20	.04	.08	.02	.38**	.39**	.35**

*Represents items RI_1 and RI_4 under stakeholder relationship
 ** Factors energy use, resource use, Industrial waste, water drainage and pollution represent items TI_1 to TI_5 from environmental tracking. Two tail significance is represented by (**) and one tail significance by (*)

All correlations among organisational system factors (environmental inspection and organisational control), stakeholder relations (environmental information and volunteer work) and operational counter measures (operational safeguard and operational resources) were large, positive and statistically significant (either one-tail or two-tail). This finding is in line with the findings of Xie and Hayase (2007). However, the five factors for environmental tracking (energy use, resource use, industrial waste, water drainage, and air and water pollution) and factors for input (EEU and ERU) and output data (EIO and EGO) showed insignificant correlations with the items OS and OCM. This finding contradicts the theoretical unpinning that a company's efforts in environmental management will affect its operational performance; instead suggesting that organisational changes that deal with environmental issues (organisational system) and operational actions adopted by companies, cannot track companies' environmental performance and predict the resources used and waste generated during the production process. The result also contradicts the findings of Xie and Hayase (2007) that the correlation between inputs and outputs was positive and statistically significant (at the 5% level). Although, the inter-correlation between these factors did not reveal significant performance we shall include these factors to understand their contribution to the CEP model[1].

Based on these findings we tested the CEP latent model discussed above on Indian managers in AMOS. Figure 3.2 shows the 3 factor model with 16 measured indicators that contribute to their

respective first order factors. These first order factors contribute to two second order factors: environmental operational management (EOM) and environmental operational performance (EOP). Both these second order factors collectively explain corporate environmental performance (CEP). Figure 3.2, indicates that independent variable EMP explains 86% of variance in organisational system (ß = 0.86, with critical ratio =6.39, at $\rho \leq 0.001$), followed by stakeholder relations (ß = 0.71, critical ratio 10.87, at $\rho \leq 0.001$) and operational countermeasures (ß = 0.52, critical ratio 8.01, at $\rho \leq 0.001$).

Although, operational countermeasures has a regression value <.70, Churchill (1979) suggests that items in the range of 0.5 to 0.7 are acceptable. However, the variable environmental tracking explained only 17% variance in EMP as indicated by its low but significant regression value (ß = 0.17 with critical ratio =3.14, at $\rho \leq 0.001$). Thus, it can be concluded that EMP is more dependent on its organisational system and stakeholder relations than operational countermeasures and environmental tracking.

3rd Order Factor ←——— 2nd Order Factor ←———1st Order Factor ←———Measured indicators
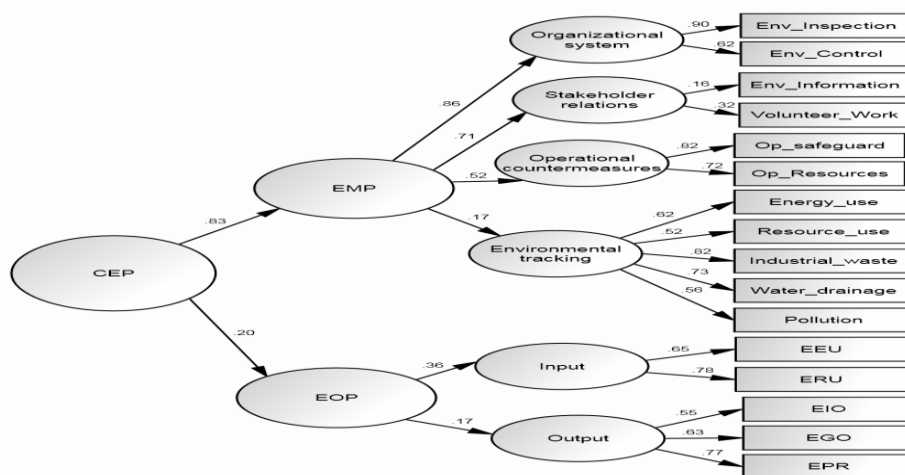
Figure 3-2   Testing the EPM Model with Indian Respondents

The EOP explains the 36% variance in input data (ß = 0.36, with critical ratio =1.39, at $\rho \leq 0.001$) and 17% variance in output data (ß = 0.17, with critical ratio =1.03, at $\rho \leq 0.001$). This finding is important for the study as it indicates that for Indian managers their environmental operational performance is more dependent on the input of energy and resources than the discharge of

industrial gases and pollutants through its operations. Finally, in regressing the dependent variables EMP and EOP on CEP, it appears that corporate environmental performance is more dependent on environmental management performance as indicated by the higher variance percentage (ß = 0.83, with critical ratio =2.05, at $\rho \leq 0.001$), compared to environmental operational performance (ß = 0.20, with critical ratio =0.35, at $\rho \leq 0.001$). Overall, the model did not reveal any cross loadings. All values were <2.50 with reasonable standard errors. The R^2 for all the factors were in the range of .82 to .69 indicating a goodness of fit for the CEP model.

The correlation coefficient amongst the thirteen factors of Australian data is shown in Table 3.8. This table indicates that organisational system (represented through factors environmental system, environmental awareness), stakeholder relationship (environmental information, volunteer work), operational countermeasures (operational usage, product, hazard management) and environmental tracking (water pollution and other resources) all show positive and significant correlations with each other. The result is in line with the findings of Xie and Hayase (2007). However, the input and output variables (EEU, ERU, EIO, EGO and EPR) showed negative and insignificant correlation with the two factors of environmental tracking. The result contradicts the findings of Xie and Hayase (2007) that the correlation between inputs and outputs was positive and statistically significant (at the 5% level).

Table 3.8 Correlations amongst EMP and OPI factors of Australian Managers

		1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Env_System	1												
2.	Env_Awareness	.25**												
*3.	Env_Information	.25**	.17*											
*4.	Volunteer_Work	.74	.37	.17										
5.	Operational_Usage	.14	.09	.24	.44**									
6.	Product	.22**	.08	.63*	.36**	.48**								
7.	Hazard_Mgmt	.04	.09	.16	.35**	.42**	.48**							
8.	Water_Pollution	.22**	.28**	.53	.09	.31	.65*	.20*						
9.	Other_Resources	.12	.26**	.18	.58	.22**	.19*	.32**	.26**					
10.	EEU	.15	.21*	.22**	.25*	.38**	.35**	.14	-.12	.14				
11.	ERU	.17*	.52	.02	.55**	.78**	.47**	.64**	-.16*	-.18*	.31**			
12.	EIO	.87	.53	.63	.47**	.56**	.76**	.43**	-.43	-.11	.32**	.47**		
13.	EGO	.85**	.12	.28	.42**	.45**	.81**	.37**	.59	-.12	.26**	.46**	.58**	
14.	EPR	.25*	.19	.23	.65**	.48**	.48**	.56**	.04	-.69*	.58**	.76**	.35**	.39**

*Represents items RI$_1$ and RI$_4$ under stakeholder relationship
Correlation is significant at the 0.01 level (2-tailed) is indicated by (**),
Correlation significant at the 0.05 level (2-tailed) is indicated by (*)

This finding indicates that environmental tracking used by companies cannot predict the level of resources input and waste discharged through the production process. Despite the negative

correlation between these factors we shall retain all thirteen factors of the Australian data to predict the contribution of each of the factors to the final CEP model.

The final CEP model was tested using the same procedure and evaluative criteria as the Indian data mentioned above. Figure 3.3, shows the findings of this procedure. Results of the Australian data were different to the Indian data. The variable EMP had a higher percentage of variance explained in operational counter measures (ß = 0.99, with critical ratio =21.24, at ρ ≤ 0.001) followed by environmental tracking (ß = 0.58, with critical ratio =12.36, at ρ ≤ 0.001) and stakeholder relations (ß = 0.57, with critical ratio =5.90, at ρ ≤ 0.001). The factor 'organisational system' explained the least percent of variance (10%) in EMP (ß = 0.10, with critical ratio equalling 12.41 (ρ ≤ 0.001). This finding suggests that for Australian managers, actions and measures adopted by their company (operational counter measures), and actions taken to track environmental results (environmental tracking), and the interaction between the company and its various stakeholders, were more significant in determining environmental management performance than changes made in organisational design (organisational system).

3rd order factor ⟵ 2nd order factor ⟵ 1st order factor ⟵ Measured indicators
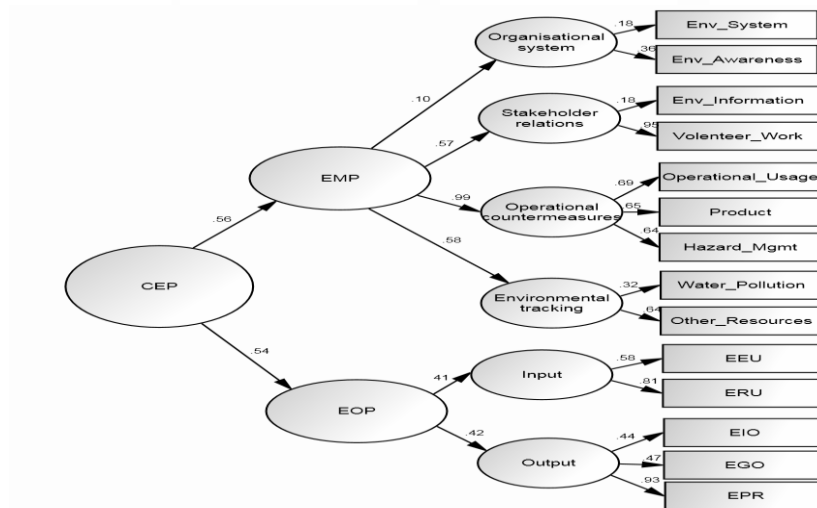
Figure 3-3   Testing the EPM Model with Australian Respondents

Also, unlike Indian data where the EOP had a higher percentage of variance in input data, the EOP for Australian managers had an equal percentage of variance in both resource input (ß = 0.41, with

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critical ratio =11.23, at ρ ≤ 0.001) and waste output (ß = 0.42, with critical ratio =9.65, at ρ ≤ 0.001).

The corporate environmental performance variables showed equal interest in both EMP and EOP with variances of .56% and .54% evident from ß = 0.56 with critical ratio =11.23 and ß = 0.54 with critical ratio =11.75 at ρ ≤ 0.001. Thus, Australian managers considered both environmental management performance and environmental operational performance to be equally important in determining corporate environmental performance. This finding reveals the effect of country in determining corporate environmental performance. Overall, the CEP model revealed good R^2 in the range of .81 to .72 and low standard errors indicating a good model fit to the data.

3.10   Discussion and Conclusions

After running a PCA on other EMP indicators we found that the items are loaded on various factors instead of ideal one factor under the rotated component matrix table. For example, PCA on organisational system items indicated that factors are all straight and load on four factors instead of one under the rotated component matrix table. This result indicated that there were multiple dimensions to measure under an organisational system as opposed to ideally a single factor. This result also implied that there is no single model which can be effectively used in different geographical locations due to differences between companies from various economies or industry sectors. Deference in organisational operational style, cultural attitudes, social expectations and environmental regulations also hinder the effective use of one model. Xie and Hayase (2007) also commented that given the differences in organisational culture and regulatory environment between companies from different countries or regions, alternative measurement frameworks should be applied.

Finally the paper has developed an operational EPM model and proposed to use the estimated value on the Input and Output data as a measure of OPIs. We empirically tested the construct reliability of the EPM model using the survey data collected from 320 companies in Australia and India operating in the Chemical, Industrial, Pharmaceutical and Biotech industries. The PCA with the MPIs and OPIs provided evidence that CEP consists of two dimensions, which can be interpreted as EMP and EOP respectively. These two dimensions (EMP and EOP) are interdependent because input and output (which describe EOP) are derived from operational

countermeasures and environmental tracking. This result implies that corporate efforts in environmental management will lead to good operational performance.

Factor analysis of Indian data indicated four distinct factors with good reliability ranging from .70 to .90 and Australian data indicated six distinct factors with reliability ranging from .60 to .90. The same data set was used to assess the relationship between all EPM and OPM factors using a correlation matrix. We modelled the relationship between each of the factors of EPM and OPM to CEP by drawing a latent construct in the AMOS software. Results indicated that EMP is more dependent on its organisational system and stakeholder relations than operational countermeasures and environmental tracking. Indian managers consider that corporate environmental performance is more dependent on environmental management performance than environmental operational performance, whereas Australian managers consider both environmental management performance and environmental operational performance to be equally important in determining corporate environmental performance. Two possible explanations can be made for this finding. First, it is possible that companies that are proactive in environmental management may aim to improve their reputation and moderate the pressures from various stakeholders rather than to actually reduce their environmental loads (Jung et al., 2001). This is consistent with legitimacy theory predictions that maintaining legitimacy requires policing and minimizing organizational miscues that result in a negative communication to relevant audiences (Mobus, 2005). They shed additional light on our understanding of legitimacy dynamics in the environmental performance domain.

Powerful stakeholders such as institutional investors will be those to whom managers will direct pragmatic legitimation efforts. Managers will direct moral legitimation efforts toward environmental public interest groups, small investors and the environmentally conscious general public, as these stakeholders are concerned with "doing the right thing" and fulfilment of the social contract. Legitimacy theory predicts tactics like communicating environmental responsibility is a legitimacy tactic to avoid the emergence of crisis in legitimacy.

Small investors, environmental public interest groups, and the environmentally conscious general public grant an organisation a level of performance legitimacy. However, it is reasonable that some

stakeholders relax their scrutiny and are satisfied with ongoing symbolic representations of environmental responsibility as a basis for continuing legitimacy (Mobus, 2005). O'Donovan, (2002) concludes that conforming to societal expectations, presenting the organisation in a positive light, and attempting to alter the values of relevant publics are very likely managerial responses to legitimacy maintenance threats. Second, it may take more time for companies to actually reduce their environmental loads. In other words, at present, most companies devote themselves to environmental management; in future, as the environmental management system is utilised effectively and efficiently, improvement in operational performance may occur (Xie & Hayase, 2007, p. 166).

Due to the non-availability of relevant data on input and output indicators, an estimated value on the Input and Output Indicators was introduced in the study. It is proposed that the summation of both these variables can help predict the resources used and waste discharged by companies in their regular course of operation. Estimated values are useful in operationalising the CEP model and predicting its validity. Future researchers who face similar difficulties regarding OPI data; will be able to use the model in this study to develop estimated data sets for OPIs. Xie and Hayase (2007) commented that their study was still a preliminary exploration into operationalising the constructs of the CEP measurement framework and needs to be improved in future studies. This study tested the robustness of these constructs using a larger-sample-size (320 companies) compared to 58 used by Xie and Hayase (2007), and respectively drawn from three industries as opposed to one.

The results show that organisations incorporated various indicators and measurement items related to the organisational system (environmental auditing, adoption of ISO 1400), Stakeholder relations (environmental disclosure, community contribution), operational countermeasures (countermeasures against global warming, countermeasures against environmental issues in process/product design) are included in the measures of performance which deliver favourable outcomes to stakeholder interests. These further indicate that organisations are keen to maintain a pragmatic and/or moral legitimacy for their organisation. From this theoretical perspective differences in organisational cultural attitudes and environmental regulations hamper the effective use of one single model in different contexts. Given the differences in organisational culture and

regulatory environment among organisations from different countries, alternative measurement frameworks should be applied. A broadened view of legitimacy theory provided by Suchman's (1995) framework suggests that CSR may be an example of corporate actors both engaging the process of influencing the cultural/institutional definition of environmental performance, and a proactive tactic to gain and maintain legitimacy by concurrently demonstrating conformity within that definition (Mobus,2005, p 510).

Xie and Hayase (2007) developed an operational EPM model and proposed to use the Environmental Intensity Change Index (EICI) as a measure of OPIs. The results have confirmed that the EICI and the evaluation based on it are comparable across sub-sectors, even though these sub-sectors are different in resources/energy consumption. Although this is an improvement upon the measures used by previous studies, it was not feasible to use EICI as a measure of OPIs across geographical locations because of the non-availability of specific data. The EICI measure has also been criticised as being partial to those companies who have greatly improved their performance before the base year, because even if those companies make the same or even more efforts during the evaluated period, they have difficulty in demonstrating a significant improvement in their performance; whilst the previous under performers can show significant improvement by making the same or even less effort during the same period (Xie & Hayase, 2007).

The study is limited by the use of imputation in analysis and the use of estimated values on the Input and Output Indicators of OPIs. Hence, the findings need to be interpreted with caution. As values have been estimated based on the responses of existing respondents, the theoretical underpinning of this study is not violated. However, this study is a constructive approach in overcoming this practical difficulty. As there is no single suitable model, and given the difficulties in selecting the right measure of evaluation and collecting the required data, it would be prudent to use different measures and methods for environmental performance evaluation in emerging economies like India. Given the contemporary nature of environmental performance research, future studies may further explore alternate measures and methods.

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Chapter 4 – Paper 3

THE ASSOCIATION BETWEEN FIRM CHARACTERISTICS AND LEVELS OF CORPORATE SOCIAL AND ENVIRONMENT REPORTING IN AUSTRALIAN AND INDIAN ORGANISATIONS

The third paper examines and compares the extent of social and environmental reporting between Australia and India. It further analyses the association between firm characteristics and levels of SER. There is also a close relation between social and environmental performance and SER. Clarkson, Overell and Chapple (2011) documented a positive relationship between environmental performance and environmental reporting. The authors concluded that consistent with socio-political theories, firms with higher level of emissions (a higher pollution propensity) make more environmental disclosures in total.

Authors (for example, Burritt, 2002; Rezaee et al., 1995; Schaltegger & Burritt, 2000) have articulated the need for standardisation of environmental reporting practice and use of the GRI framework (Burritt, 2002; Ho & Taylor, 2007; Holland & Foo, 2003; Raman, 2006). No research has been undertaken that examines the extent of social and environmental disclosure based on GRI (2002) social and environmental performance indicators in India. This is the first empirical study of this nature.

Selected GRI (2002) social and environmental reporting indicators have been used in this paper to determine the extent of social and environmental disclosures. Regression analysis is used to test hypotheses that link the variation in the extent of reporting to factors that are likely to influence SER. Social, environmental and a combined social and environmental disclosure index was constructed which serves as the dependent variable.

Most studies have focused on environmental issues whilst social issues are not given due importance (Parker, 2005). To this end, this paper includes both social (17 indicators) and environmental (18 indicators) issues. The paper uses a quantitative approach (via category) to measure the extent of disclosure to capture the quality and depth of SER.

The Association Between Firm Characteristics and Levels of Corporate Social and Environment Reporting in Australian and Indian Organisations

Abstract

The guidelines within the Global Reporting Initiative (GRI) framework have increasingly become the international benchmark for organisational transparency and accountability across the world. This paper investigates corporate social and environmental reporting (SER) practices within an Australian and Indian context. SER disclosure has the potential to increase organisational competitiveness and profitability and thereby share price. The study investigates the SER practices of 93 small and large Australian and Indian organisations across five industries. Using 35 GRI based social and environmental indicators; the study evaluates disclosure information presented in annual reports and indicates that the extent of SER by Indian organisations is lower than Australian organisations. Regression analysis is used to empirically examine the determinants of SER practices in both countries. Australian results indicate that the extent of total disclosure is significantly higher for large organisations in the Forestry and Paper, Industrial Engineering, Industrial Transport and Mining industries. Indian results indicate that total disclosure is significantly higher only for large organisations, particularly within the mining industry. Australian organisations with negative returns on total assets reported significantly higher social information than Indian organisations. The study found the extent of total disclosure is unrelated to organisational age, external auditor size, and extent of multinational influence for both countries.

4.1 Introduction

Social and environmental accounting research was widely promoted in the 1970s, lost its prominence in the 1980s, and re-emerged from the mid-to late 1990s (Deegan, 2007) gaining attention particularly among researchers in Western countries (Adams & Kuasirikun, 2004). Although research in the area of social and environment reporting (SER) may be increasing, most studies have focused on Western countries (Adams & Zutshi, 2004; Brammer & Pavelin, 2008; Branco & Rodrigues, 2006, 2008; Clarkson, Overell & Chapple, 2011; de Villiers & van Staden, 2011; Orij, 2010). Relatively few attempts have been made to research in the field of SER in non-western and especially an emerging economy context (Kuasirikun, 2005; Kuasirikun & Sherer, 2004).

Non-financial reporting that provides relevant and reliable information relating to the social and environmental aspects of the organisation is vital for the growth and development of capital markets within emerging nations. According to Kisenyi and Gray (1998), there is a lack of understanding of SEA within emerging economies. Pachauri (2006) argues that organisations operating in emerging economies have a responsibility to address some of the problems of poverty, human rights violations, corruption, inequalities and social exploitation that confront many emerging economies. By holding business organisations to account, Belal and Momin (2009) believe SEA has the potential to promote equality, social justice, transparency and accountability.

It cannot be assumed that SER is consistent across the Asia-Pacific region. There are three main reasons for environmental non-performance in South Asian countries in general and India in particular: (i) lack of government pressure; (ii) lack of perceived benefit, either in terms of status with respect to consumers or within the business community; and (iii) a perception that their organisation does not have any environmental impact (Perry & Sheng, 1999). Thompson and Zakaria (2004) mentioned that irrespective of nationality, the lack of a recognised reporting framework, the cost of reporting, and fear of how readers will react to this information, could be general reasons for non-disclosure. Of the three reasons, the paucity of SER is largely due to the lack of governmental pressure to report (Thompson & Zakaria, 2004). Further, the lack of public pressure (from non-government organisations and pressure groups), low levels of public

accountability relative to that in the UK, USA and Australia, and a lack of pressure from other stakeholders to engage in environmental reporting may be reasons why few companies take environmental reporting seriously. Thus the reason for inadequate environmental reporting in India is due to a lack of pressure by stakeholders, environmental groups, the general public and government (Sahay, 2004).

SER increases organisational transparency which improves public image and relations with stakeholders (Robbins et al., 2003). It also increases relationships with customers and employees (Baker, 2001) who increase the value of intangible assets of the company (Ernst & Young, 2002). Increased transparency enables organisations to allocate resources more effectively and efficiently. Increased disclosure reduces regulatory cost and decreases the firm's legal liability (Robbins et al., 2003), thereby improving the competitiveness, profitability and share price of the organisation (CERES, 2002). Through various empirical studies, authors have identified incentives for SER. Gray et al. (1996) provided an extensive list of incentives for SER. The list includes ethics, individual commitment, accountability, legal code of practice, anticipated regulation, marketing, public image, defence to distract attention, influence perceptions, response to pressure, go ahead of /stay with competitors, prior commitment, ethical investors to overcome fears of secrecy, and to maintain a position of power and legitimisation. Various authors (Belal & Owen, 2007; Islam & Deegan, 2008; Rahaman et al., 2004) argued that consumer pressure or pressure from non-government organisations or civil society groups are the driving force behind SER in organisations in developed economies whereas the driving force in emerging economies that depend on foreign loans and aid, would be the external pressure from 'powerful' international lending institutions (Rahaman et al. 2004), pressure from particular stakeholders (such as international buyers) to upgrade their social performance which shaped their social policy (Belal & Owen, 2007) and pressure from 'outside forces' via parent company's instructions and pressure from international buyers (Islam & Deegan, 2008).

Researchers have undertaken comparative studies of developed economies including between the US, UK and Australia (Guthrie & Parker, 1990); UK, Germany, Sweden, Switzerland and the Netherlands (Adams et.al., 1998); UK and USA (Holland & Foo, 2003); Denmark, Norway and Sweden (Nyquist, 2003); Belgium, Germany and the Netherlands (Vanstraelen et. al., 2003) and

the USA and Japan (Ho & Taylor, 2007) but scant attempt has been made to undertake a comparative study between a developed industrialised country and an South Asian emerging economy.

Theoretical foundation

Two major influences on companies' SER are acknowledged in this study: those related to the socio-political context within which companies operate, and those related to economic incentives. The theoretical framework adopted incorporates both influences, by adopting legitimacy theory. The legitimacy theory is one of the dominant theories in social disclosure research (see, for example, Branco & Rodrigues, 2008; Claasen & Roloff, 2012; Deegan, 2002, Mahadeo, et al., 2011; Tilling & Tilt, 2009). This study refers to two interrelated concepts of legitimacy and image.

In this study, it is argued that companies are driven by two incentives to engage in some form of stakeholder management. One drive is in line with legitimacy theory. SER is mainly significant in enhancing the effects of CSR on corporate reputation. As reporting manipulates the external view of standing, it may be considered an indication of enhanced social and environmental behaviour and thus reputation (Branco & Rodrigues, 2008).

The institutional perspective of legitimacy theory focuses on social legitimacy. The acceptance of an organisation by its social environment, and external components is considered as social legitimacy (Branco & Rodrigues, 2008). Legitimacy theory (Lindblom, 1994; Suchman, 1995) focuses on whether the purpose of organisations is to meet social expectations and whether the value system of an organisation is harmonious with the value system of society. The theory affirms that legitimacy is a position or provision. Legitimacy is attained when the value system of an organisation is harmonious with the value system of the bigger society. Organisations seek this position through the process of legitimation. "The importance of social legitimacy comes from the theoretical assumption that companies are embedded in the social environment in which they operate, and that their performance and expectations are affected by the environment. The companies' success, even survival is determined by this interface" (Branco & Rodrigues, 2008, p. 687). From this perception, SER is perceived as one of the approaches used by organisations to ask for approval of their societal actions.

"It is used to establish or maintain the legitimacy of the company because it may influence public opinion and public policy. Legitimacy theory suggests that SER provides an important way of communicating with stakeholders, to convince them that the company is fulfilling their expectations (even when actual corporate behaviour remains at variance with some of these expectations" (Branco & Rodrigues, 2008, p. 686).

Thus following Branco and Rodrigues, 2008; Li and Zhang, (2010); Mahadeo et al. (2011) this paper uses legitimacy dynamics and measures related to maintaining social legitimacy to explain the reporting of Australian and Indian organisations.

The objective of this paper is twofold. First, to examine and compare the extent of social and environmental reporting in a developed (Australia) and an emerging economy (India), selected GRI (2002) social and environmental reporting indicators have been used to determine how widely items with social and environmental impact are being reported. Second, to analyse the association between firm characteristics and levels of SER in a developed and an emerging economy context, regression analysis is used to test hypotheses that link the variations in the extent of reporting to factors that are likely to influence SER. Institutional perspective of legitimacy theory (social legitimacy) is used to explain the key results.

India is chosen for this study because after China, it is one of the most important emerging economies in Asia in terms of economic growth. Its economy has grown by 6.7% in 2008-09. Its industrial output recorded an annual growth rate of 6.8% in July 2009 and the World Bank has projected an 8% growth rate for India in 2010 (www.ibef.org). India is the fourth largest economy in terms of purchasing power parity, tenth most industrialised economy and has the third largest pool of scientific and technical manpower when ranked against the world's economies (www.specials.rediff.com). Most of the present literature is based in Anglo-Saxon countries and evidence should be added about other geographic and cultural contexts. In contrast to the understanding of SER from common law English-speaking countries (Australia, Canada, UK, USA), the determinants of SER in emerging economies are still comparatively unknown (Jamali and Mirshak, (2007).

The remainder of the paper is organised as follows: Section 4.2 and 4.3 will review prior literature and develop testable hypotheses. Section 4.4 discusses research design issues by presenting the methodology, sample and data. Section 4.5 presents descriptive and empirical results, and Section 4.6 discusses the findings and concludes the paper.

4.2   Literature Review

4.2.1   General Review

Although there are number of ways in which corporate social and environmental disclosures may occur (see Gray et al., 1995a, 1995b; Guthrie & Parker, 1990) this study used annual report disclosures as a basis for analysis, because this is the most common mandatory document produced by organisations on a regular basis (Belal, 2000; Tilt, 2001). Hence, comparison can be relatively easy (Tilt, 2001). This approach is most commonly used because, socially responsible activities are disclosed in the corporate annual report under 'Directors Report', 'Managing Director's Report', 'Chairperson's Report', or 'General Manager's Report' (Ali & Ahmed, 2001). The annual report is the major communication medium and data source for researchers investigating the reasons underlying environmental disclosure (Gray et al., 1995a). They suggested that the annual report is the major medium for a company to promote itself, and the inclusion of other information (such as environmental) along with financial data may indicate its relative importance. Rankin (1996) found that 68% of stakeholders sought environmental information from the annual report in the first instance and 43% sought this information from other sources. Members of environmental groups, such as Greenpeace and the Australian Conservation Foundation, considered annual reports to be the main information source about corporate environmental performance (Tilt, 1994). Tilt (2001) found that 80% of companies used annual reports to disclose environmental information and commented that the annual report is still considered an appropriate medium for social and environmental disclosure. Other sources such as newspaper reports were not examined because social and environmental information is not covered on a regular basis in the Indian press, which makes comparative analysis relatively difficult.

4.2.2 SER Studies in Developed Economies

The majority of SER studies focus on Western countries (Adams & Zutshi, 2004). Brief descriptions of studies related to SER within developed economies are provided in Table 1.4. Table 4.2 represents comparative studies of SER. Studies closely related with the extent and determinants of SER are briefly discussed below.

Table 4.1 Summary of major SER studies on Developed Economy

Categories	Brief Description	Studies
Studies related to SER practices	Predominantly quantitative studies which directly or indirectly explore SER by measuring the extent of reporting.	Adams & Zutshi, (2004); Ali, Ahmed, & Henry, (2004); Baker, (2001); Burritt, (2002); Clarkson, Overell & Chapple, (2011); Deegan, (2002); Deegan & Gordon, (1996); Deegan & Rankin, (1996); Gray, (2006); Gray et al., (1996); Orij, (2010); Schaltegger & Burritt, (2000); Solomon & Lewis, (2002); Tinker & Gray (2003);
Studies related to extent and determinants of SER	Quantitative studies examined the extent and determinants of SER	Adams and Zutshi (2004), Brammer & Pavelin, (2008); Branco & Rodrigues, (2008); Clarkson et al. (2011); de Villiers & van Staden, (2011); González-Benito & González-Benito, (2010); Hackston & Milne, (1996); Ho & Taylor, (2007).
Studies related to Literature review	Reviewed previous SER literature in its historical context	Deegan & Soltys, (2007); Gray, Kouhy & Lavers, (1995a); Owen, (2008); Parker, (2005); Schaltegger and Burritt (2010).

Brammer and Pavelin (2008) examined the factors associated with the variation in the extent and quality of voluntary environmental reporting based on 450 listed firms in the UK. They focused on the five facets of environmental disclosure quality such as environmental policy, initiative, improvement, audit and target. The authors reported that the firm's size and the nature of its business activities had a positive relationship with the extent and quality of environmental reporting. They also reported that media exposure has no relationship with voluntary environmental reporting. Examining forty nine annual reports and websites, Branco and Rodrigues (2008) reported that company size and media exposure are both positively related to social responsibility reporting. Clarkson et al. (2011) investigated the extent and the nature of firms' environmental reporting using 51 Australian firms that reported to the National Pollutant Inventory (NPI). The authors documented a positive relationship between environmental performance and environmental reporting. The authors concluded that consistent with socio-political theories, firms having greater levels of emissions (a higher pollution propensity) undertake more environmental reporting. De Villiers and van Staden (2011) investigated environmental reporting undertaken by firms in annual reports and on corporate websites in relation to a long-term (bad) and a short-term (crisis) environmental

performance measure. The authors found that the extent of environmental reporting across the two forms of media outlet is conditional. Firms with an environmental crisis are more likely to report more environmental information on their website and firms with a poor environmental reputation report more environmental information in their annual reports. Hackston and Milne (1996) indicated that the majority of disclosures were declarative and positive in nature. Results also show that both firm size and industry membership were significantly associated with the amount of disclosure, whilst profitability was not. Ho and Taylor (2007) investigated the triple bottom-line (TBL) disclosures of 50 of the largest US and Japanese companies. Results indicated that the extent of reporting is higher for firms with a larger size, lower profitability, lower liquidity, and for firms with membership in the manufacturing industry.

Table 4.2 Developed Economies Comparative SER Research

Categories	Brief Description	Studies
Comparative studies	Predominantly quantitative studies which explore SER practices of various developed economies	Adams et al., (1998); Guthrie & Parker, (1990); Gamble et al., (1996); Holland & Foo, (2003); Jaggi & Low, (2000); Nyquist, (2003); Perry & Sheng, (1999); Vanstraelen, Zarzeski, & Robb, (2003).

Holland and Foo (2003) compared the corporate environmental reporting practices of the United Kingdom and United States. They primarily found that even though environmental legislation in the United States was more prevalent than in the United Kingdom, more firms in the UK sample published stand-alone environmental reports or included a separate environmental section than US firms. They also found that most US firms reported the information in the 'management discussion and analysis' section of the annual report, whereas a separate section for environmental information was the most prevalent way of reporting in the United Kingdom. Comparing Western experience with environmental reporting to that in Singapore, Perry and Sheng (1999) found a low commitment to environmental reporting amongst Singaporean organisations. They commented that the low level of environmental reporting in Singapore is symptomatic of the gap between the conscience of environmental responsibility in developed Western countries and the absence of it in newly industrialised economies.

In summary, most empirical studies on SER have focused on Anglo Celtic based countries such as the USA, UK, Canada, Australia and New Zealand, or countries in continental Europe. Most of the reviewed studies used a content analysis method. These are predominantly quantitative studies

which explore SER by measuring the extent of reporting and SER determinants. These studies measured the extent of reporting contained within annual reports, company websites and sustainability reports. Some studies compared the SER practices of different countries but these comparisons were mainly restricted to developed countries.

4.2.3   SER Studies in Emerging Economies

Belal and Momin (2009) were the first to review SER studies specifically from an emerging economy perspective. There is lack of understanding in the corporate social responsibility literature regarding SER research within emerging economies (Kisenyi & Gray, 1998). SER has the potential to promote equality, social justice, transparency and accountability by holding business organisations to account (Belal & Momin, 2009). For a useful review of prior SER studies, a categorisation or classification framework was developed by Belal and Momin (2009). Their review found that most of the earlier SER studies used content analysis to examine the motivation underlying SER. Belal and Momin (2009) provided brief descriptions of studies related to the extent of SER and their determinants within emerging economies.

Table 4.3 Summary of major SER studies on Emerging Economies

Category	Brief Description	SER Studies
Studies related to extent of SER and their determinants	Predominantly quantitative studies which indirectly explore SER by measuring the extent of reporting. This category also includes studies which examined the determinants of SER.	Batra, (1996); Belal, (2000); Belal & Owen, (2007); Choi, (1998, 1999); Craig & Diga, (1998) Disu & Gray, (1998); Huang & Kung, 2010; Islam and Dellaportas (2011); Islam & Deegan, (2008); Kisenyi & Gray, (1998); Li & Zhang, (2010); Mahadeo, Hanuman & Soobaroyen, (2011); Auora & Puranik, (2004); Jamali & Mirshak, (2006); Kuasirikun & Sherer, (2004); Sahay, (2004); Thompson & Zakaria, (2004); Gao, Heravi, & Xiao, (2005); Haniffa & Cooke, (2005); Xiao, Gao, Heravi, & Cheung, (2005); de Villiers & van Staden, (2006); Maali, Casson, & Napier, (2006); Raman, (2006); Kamla, (2007); Rashid & Lodh, (2008); Williams & Pei, (1999).

They have also used a second categorisation of emerging country SER studies by regions and countries. The categorisation is reported in Table 4.4 below:

SER studies on India (Balasubramanian, et al., 2005; Priyadarshini & Gupta, 2003; Raman, 2006; Sahay, 2004) were mainly descriptive and qualitative. Most studies used content analysis to measure the volume and extent of SER. Singh and Ahuja's study (1983) was perhaps the earliest Indian study in emerging economies (Belal & Momin, 2009). More current studies are required to

illuminate existing SER practices in India. Priyadarshini and Gupta, (2003) sought to identify the causes for low levels of compliance with environmental regulations in India.

Table 4.4 Emerging Economy SER Research by Regions and Countries

Regions	Countries	SER Studies
Africa	Ghana	Rahaman, (2000); Rahaman et al., (2004)
	South Africa	de Villiers, (1999); de Villiers & van Staden, (2006)
Asia	Bangladesh	Belal, (2000, 2001); Belal & Owen, (2007); Imam, (2000); Islam & Deegan, (2008); Rashid & Lodh, (2008), Islam and Dellaportas (2011)
	Hong Kong	Gao et al. (2005); Jaggi & Zhao, (1996)
	India	Aurora & Puranik, (2004); Batra, (1996); Raman, (2006); Sahay, (2004)
	Singapore	Perry and Tsang,(1999);
	Malaysia	Haniffa & Cooke, (2005); Thompson & Zakaria, (2004)
	Korea	Choi, (1998, 1999)
Middle East	Qatar	Al-khater & Naser, (2003); Naser et al., (2006)
Global	Various	Kamla, (2007); Maali et al., (2006); Williams & Pei, (1999); Xiao et al., (2005)

Source: Adapted from Belal and Momin, (2009)

They found that although environmental laws are in place, organisations displayed a very low level of compliance. They reported an absence of economic incentives that discouraged organisations from complying. Raman (2006) conducted an exploratory study into how top management perceived and reported CSR in India. Using content analysis the study looked at the chairman's message in the annual reports of the top 50 (in terms of market capitalisation) organisations in India. His analysis revealed that 80% of the sample made disclosures related to product/service improvement followed by human resource disclosures. No more than 52% of organisations mentioned their involvement in community activities or other activities like education and health services. The study found that the nature and the extent of disclosures varied with a large emphasis on product/service improvement and development of human resources. Sahay (2004) indicated that in India environmental reporting in general is unsystematic, piecemeal, inadequate and non-comparable. Environmental reporting is still in its infancy and was primarily a public relations activity. It did not provide relevant information to stakeholders or to an external database to ensure scrutiny and transparency. The study pointed out that the reason for inadequate environmental disclosure is probably that less pressure is applied on Indian organisations by stakeholders, environmental groups, the general public and, importantly, government. The issue therefore was one of inadequate enforcement rather than inadequate environmental legislation.

In summary, most empirical studies on SER have focused on Anglo Celtic based countries such as the USA, UK, Canada, Australia and New Zealand, or countries in continental Europe. Few studies on SER have been undertaken within a South Asia context. Most of the reviewed studies from the context of emerging economies used a content analysis method. These are descriptive studies and measured the extent of reporting contained within annual reports.

The amount of environmental information has increased over time. Even though disclosures have increased, there is considerable variety in the substance of what is reported (Burritt, 2002). Prior studies (Burritt, 2002; Rezaee et al., 1995; Schaltegger & Burritt, 2000) have articulated the need for standardisation of SER practices and use of the GRI framework (Burritt, 2002; Ho & Taylor, 2007; Holland & Foo, 2003; Raman, 2006; Sahay, 2004; Schaltegger & Burritt, 2000). GRI reporting guidelines have also gained recognition and endorsement from various stakeholders, including inter-governmental agencies and supranational bodies, such as the European Union, United Nations, Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (Ho & Taylor, 2007).

Although literature has highlighted the need for standardisation of SER practice using GRI guidelines, no published work has sought to examine the extent of SER based on these widely accepted GRI (2002) social and environmental reporting guidelines in India. As a result, both domestic and overseas investors are not fully aware of the extent of SER within listed organisations in this country. Using selected GRI (2002) social and environmental performance indicators this study seeks to answer the research question "Is the extent of SER different between Australian and Indian organisations"? This study constructs disclosure indexes to examine the extent of SER, which serve as dependent variables of the regression analysis.

4. 3. Hypothesis Development

Numerous possible determinants of SER have been acknowledged in the literature. The association between reporting and a range of firm characteristics are predicted by the theoretical arguments. In reviewing SER studies, Gray et al. (1995a, pp. 49-50) conclude that CSR is unsystematic; not related to profitability in the same period, but it may be related to lagged profits.

CSR does appear to be related to company size and industry type, but the studies are not clear or consistent enough to determine such effects precisely. They also stated that CSR is related to the company's country of origin, capital intensity, age, senior executive attitudes, and strategic posture. Although most studies have examined large organisations, samples differ from study to study in terms of both size and industry composition. Differences in countries, time periods and explanatory variables make it difficult to generalise (Adams, 2002). The following discussion reviews relevant literature on determinants of corporate disclosures and develops specific hypotheses, which are tested in this study.

4.3.1 Size of the Reporting Entity

Prior empirical studies have demonstrated an association between company size and SER, larger companies disclosing more than smaller ones (see, for example, Adams et. al., 1998; Branco & Rodrigues, 2008; Cormier & Gordon, 2001; Deegan & Gordon 1996; Hackston & Milne, 1996; Ho & Taylor, 2007; Mahadeo et.al., 2011). A significant and positive relationship between firm size and the amount of positive environmental disclosure was found by Deegan and Gordon (1996) and Hackston and Milne (1996). A positive relationship between firm size and disclosure was found by other authors (Adams, et. al., 1998; Branco & Rodrigues, 2008; Ho & Taylor, 2007; Mahadeo et.al., 2011). Legitimacy theory contains arguments for a size-disclosure relationship. Company size is one of the most common indicators of public visibility. The actions of bigger organisations are more likely to investigation, criticism and/or attention by government authorities, media and society. Bigger companies would also view legitimacy as a more important source to manage in their relations with multiple stakeholders. Companies are expected to be involved in a more methodical way in the communication of their social responsibilities. The prophecy in this paper that the extent of SER is positively related to the size of the organisation is also applicable to organisations in emerging economies. Consistent with the findings of previous research (Branco & Rodrigues, 2008; Hackston & Milne, 1996; Ho & Taylor, 2007; Mahadeo et.al., 2011: Reverte, 2009), the study argue that:

H_1: There is a positive association between firm size and the extent of SER.

4.3.2 Profitability

Adams (2002), with regards to the link between social disclosure and the economic performance of organisations states that there is an unclear relationship to profit with SER. From a legitimacy theory perspective, profitability can be considered to be related positively or negatively to SER (Neu et al., 1998). Haniffa and Cooke (2005) commented that a profitable company will be keen to 'manage' its social stakeholders by reassuring them that financial returns were not produced at the expense of social concerns. On the other hand, a loss making company may seek to divert attention away from its financial problems and convince its fiscal stakeholders that its current social activities may generate future economic benefits (Reverte 2009).

Empirical analysis provides mixed results in this issue in developed countries. Haniffa and Cooke (2005), Ho and Taylor (2007), Roberts (1992) and Stanwick and Stanwick (1998) provided results which support a profitability-corporate social disclosure relationship. Roberts (1992) has reported evidence for a positive relationship between lagged profit and SER. Haniffa and Cooke 2005) and Stanwick and Stanwick (1998) found a positive relationship between the firm's social responsiveness and its financial performance, but Ho and Taylor (2007) and Wallace and Naser (1995) reported a negative relationship between profitability and the level of total disclosure. Branco and Rodrigues, (2008), Hackston and Milne (1996), Mahadeo et.al, (2011) and Reverte (2009) and found no association between amount of disclosure and profitability. Given the mixed conclusions from prior empirical studies, we could expect a positive, negative, or even non-existent relationship between corporate profitability and the extent of SER. Therefore, in the alternate form:

H_2: There is a positive association between corporate profitability and the extent of SER.

4.3.3 Industrial Membership

The nature of a company's industry has been identified as a factor potentially affecting SER practices (Hackston & Milne, 1996). "Industries with high public visibility, or a potentially more important environmental impact, or having less favourable public images were fouled to disclose more social responsibility information than their counterparts" (Branco & Rodrigues, 2008, p 688). Proponents of legitimacy theory (e.g. Belal and Owen 2007; Branco and Rodrigues, 2008; Mahadeo et al., 2011; Reverte, 2009) argue that companies operating in activities which are

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supposed to have a more evident and significant impact on society will enhance their actions on SER to 'compensate' for the implications of their activity.

A positive association between industry membership and SER has been found by several empirical studies (Deegan & Gordon, 1996; Gray et al., 1995a, Hackston & Milne, 1996; Roberts, 1992). There is strong evidence that industry membership is related to SER (Adams, 2002; Adams, et. al., 1998; Deegan and Gordon, 1996; Ho & Taylor, 2007; Roberts, 1992) but Branco and Rodrigues, (2008) and Mahadeo et al., (2011) reported a non-significant relationship. The adverse selection argument also suggests that if a firm within an industry does not follow industry-wide disclosure practices, then it may be interpreted by the market that the firm is hiding bad news (Oyelere, Laswad & Fisher, 2003). The argument regarding developed economies may also apply to SER practices within emerging economies. Therefore:

H₃: There is a positive association between industry membership and the extent of SER.

4.3.4   Multinational Companies and their Subsidiaries

There are several multinational corporations operating in South Asia, especially in India. Apart from selling products internationally, these corporations also set up production facilities in host countries to avail themselves of business and investment opportunities offered to them. Subsidiaries of multinational companies may be viewed as significant entities in the economies of developing countries and they may operate under the threat of government control (Ali, et. al., 2004). The actions of significant entities are more likely to attract investigation, criticism and/or attention by government authorities, media and society. These companies will view legitimacy as an important source to maintain their relations with multiple stakeholders. Craig and Diga (1998) suggest that multinationals operating in emerging countries are expected to disclose more information than their local counterparts in order to comply with the more stringent disclosure requirements of their parent companies. Prior studies have found evidence of higher disclosure levels by multinational corporations in emerging countries (Ali, et al., 2004; Craig & Diga, 2000). Following this argument, it is predicted that multinational companies and their subsidiaries within emerging economies will report more social and environmental information. Therefore:

H₄: There is a positive association between multinational companies and their subsidiaries and the extent of SER.

4.3.5 Age of the Reporting Entity

Roberts (1992) found evidence that age of the organisation might influence the level of SER. Gray et al. (1995a) also concluded that the age of the corporation may be related to corporate social reporting. No empirical studies have so far reported a significant relationship between age and level of SER. Roberts (1992) and Gray et al. (1995a) were not conclusive about the association between age and level of SER.

Whether any systematic relationship between SER and the variables discussed above exist is open to question. Like the descriptive analyses, such relationships have been investigated in different time periods employing different sampling and measurement techniques (Hackston & Milne, 1996). Without systematic investigation using multiple measures and standardised techniques (replication studies), drawing firm conclusions about the existence of any such relationships is extremely difficult (Lindsay, 1995 cited in Hackston & Milne, 1996). As prior empirical studies were inconclusive, we could expect a positive, negative, or even no relationship between age of the reporting entity and the extent of SER. Thus, in the alternative form:

H₅: There is a positive association between age of the reporting entity and the extent of SER.

4.3.6 Size of the Reporting Entity's Audit Firm

Although the primary responsibility for preparing the annual report lies with company management, external auditors play a major role in the disclosure policies and practices of their clients. Watts and Zimmerman (1986) (cited in Ali, et al., 2004) argue that large auditors exert a monitoring role in limiting the opportunistic behaviour by management. Fama and Jensen (1983) (cited in Ali, et. al., 2004) suggest that large audit firms have a greater incentive to report. If the client issues inadequate disclosure, this is likely to diminish the reputation of large audit firms more than small audit firms, which causes large audit firms to be more diligent. Legitimacy theory contains

arguments for a size-disclosure relationship. To legitimise their activity, a large audit firm will try to be more transparent thus may influence the client to disclose adequate social and environmental information. Further, large audit firms can exert more influence over the organisation's disclosure policies than that of small audit firms because of their large client base, which lessens the fee dependence on a specific client. Whilst these views were in relation to mandatory reporting by organisations, similar arguments could be put forward for SER, which is largely a voluntary activity. These arguments also lead to the prediction in this paper that the extent of SER is positively associated with size of the company's audit firm. Thus, in the alternative form:

H_6: There is a positive association between size of the audit firm and the extent of SER.

4.4   Research Design

4.4.1   Development and Measuring of Criteria

GRI (2002) social and environmental performance indicators have been used to examine the extent of SER of selected Australian and Indian organisations. The paper used GRI to select the items which constituted the dependent variable within the analysis. Thirty-five (17 social and 18 environmental) disclosure items were selected in order to determine the extent of SER in Australian and Indian organisations. Disclosure items were selected based on a review of prior academic literature and business surveys, including Ho and Taylor (2007); Holland and Foo (2003) and KPMG (2002, 2005). All 35 selected disclosure indicators were included in the GRI (2002) social and environmental reporting guidelines. Seventeen social indicators (see Part A of Appendix I) were divided into four groups: (a) Employee, (b) Diversity, Opportunity and Human Rights, (c) Customer and Communities and (d) Integrity and Ethics.

Eighteen environmental indicators (see Part B of Appendix II) were also grouped into four categories: (a) General, (b) Energy, Water and materials, (c) Pollution and Waste management and (d) Others. All groupings were based on Ho and Taylor (2007). The indicators cover the five common environmental problems identified by the United Nation's International Standards of Accounting and Reporting (ISAR); namely (1) depletion of non-renewable energy resources, (2)

depletion of freshwater resources, (3) global warming, (4) depletion of the ozone layer and (5) waste disposal (Ho & Taylor, 2007).

Following prior research, (Ali et al., 2004; Hackson & Milne, 1996; Ho & Taylor, 2007; Raman, 2006) this study undertakes content analysis to collect and categorise relevant information from the full annual report. Content analysis assumes that the content categories identified in the written messages of annual reports have manifested meanings (e.g., environment) that could, therefore, be categorised (Guthrie & Parker, 1990). Hence, content analysis has been widely employed in SER studies of annual reports (see Belal, 2000; Deegan & Gordon, 1996; Guthrie & Parker, 1990; Raman, 2006; Sahay, 2004). Based on 17 social and 18 environmental indicators, a check list comprising 35 disclosure items was developed. This scoring sheet was applied to each organisation to determine the extent of reporting within each country. The information was coded assigning a quantitative value of zero, one and two to reflect the extent of information. An indicator was assigned a value of (a) two, if it disclosed figures, tables of data (quantitative), or (b) one, if it disclosed by short mention of topic (qualitative) and (c) zero, if it has not disclosed. Based on this scoring system, a tripartite disclosure index (incorporating social, environmental, and a combined social and environmental disclosure index) was constructed for each organisation within both countries. Firstly, information has been scored as zero, one and two (as mentioned above) by research assistants. To ensure consistency and relevance and avoid selection bias, 20% of the data was randomly chosen and coded separately by the author. The process did not indicate any significance difference.

4.4.2   Model Specification

Following previous studies (Ali et al., 2004; Hackston & Milne, 1996; Ho & Taylor, 2007) a Multivariate Ordinary Least Squares (OLS) approach was used, to determine which attributes were associated with SER and their significance level. The dependent variable is the extent of the reporting of the sample organisations measured by the selected social and environmental disclosure indicators; which was calculated in terms of the disclosure index (DI) of reporting. Based on the review of prior disclosure studies the selected explanatory variables are (i) size of the reporting entity (NA), (ii) age of the reporting entity (ARE), (iii) profitability (ROTA), (iv) industry in which the company operates (IOC), (v) multinational company influence (MNC), and (vi) size of the

external auditor's firm (SAF). To address the question regarding determinants of SER, the following multiple regression model was estimated:

$$DI_i = \beta_0 + \beta_{i1} (ARE) + \beta_{i2} (ROTA) + \beta_{i3} (IOC) + \beta_{i4} (NA) + \beta_{i5} (SAF) + \beta_{i6} (MNC)$$

Where:

DI_i = disclosure index on social factors, environmental factors or total (social and environmental combined), measured by score;

ARE_i = age in years of the reporting entity based on the date of incorporation;

$ROTA_i$ = return on total assets, measured by net operating profit to the book value of net assets for company i;

IOC_i = industry in which the company i operates (5 dummy variables for five selected industries);

NA_i = size of the reporting entity, measured by Log of net assets of the reporting entity at year end for company i;

SAF_i = represent the size of reporting entity i's auditor firm. One if audit firm is one of Big Four (Pricewaterhouse Coopers, Deloitte Touche Tohmatsu, Ernst & Young, KPMG), otherwise zero;

MNC_i = 1 if company i is a multinational company or a subsidiary of a multinational company, otherwise zero.

4.4.3 Sample and Data

The final sample for analysis consisted of 93 (47 Australian and 46 Indian) annual reports. Annual reports of large and small publicly listed Australian and Indian organisations were collected for the accounting year 2006-2007. The chosen industries groupings were (i) Chemical, (ii) Forestry and Paper, (iii) Industrial Engineering, (iv) Industrial Transport, and (v) Mining. The industries were selected based on social perceptions that companies operating in these industries were more likely to be considered 'dirty' or environmentally damaging (Elkington, 1994). Australian and Indian organisations were then selected from these industries based on an even spread of size and industry distribution. The time period was chosen in order to allow sufficient time for adoption of the 2002 GRI reporting guidelines by the selected organisations. Size categorisation was determined based on the net asset value of the organisation. The average net asset values of industries were

calculated for each industry segment and then, keeping that average as the base, the top five and bottom five organisations were chosen from each industry group. The organisations and their industry groupings were chosen from Data Stream 4 (Electronic data base). Annual reports and information were collected from organisational and other related websites.

Data Stream, annual reports and organisational and other related websites are the data sources for the explanatory variables examined in the regression model, including (i) size of the reporting entity (net asset), (ii) profitability (return on total asset), (iii) industrial membership (iv) age of the reporting entity (date of incorporation), (v) multinational company and their subsidiaries and (vi) size of the reporting entity's audit firm (Big Four or not). The sample distribution according to industry and size is presented below.

Table 4.5 Distribution of Sample According to Industry and Size

Industry/Country	India				Australia			
	Large	Small	Number	%	Large	Small	Number	%
Chemicals	6	4	10	21.74	5	4	9	19.15
Forestry and Paper	6	4	10	21.74	6	4	10	21.27
Industrial Engineering	6	4	10	21.74	5	4	9	19.15
Industrial Transport	6	4	10	21.74	5	4	9	19.15
Mining	4	2	6	13.04	6	4	10	21.28
Grand Total			46	100.00			47	100.00

4.5   Results

4.5.1   Descriptive Analysis

Ninety three percent of Indian and 97% of Australian organisations undertook some form of social and environmental disclosure. Results of the descriptive analysis of social and environmental reporting are presented in Appendix IIA and IIB and Table 4.6. Appendix IIA reports on the results of social disclosures by assigning a score of zero, one and two. Furthermore, total disclosure scores are categorised into four categories: (a) Employee, (b) Diversity, opportunity and human rights, (c) Customers and communities and (d) Integrity and ethics. Eighty two percentage of Indian organisations and 97% of Australian organisations disclosed some form of social disclosure. Only 6% of both Indian and Australian sampled organisations disclosed information on 'Turnover of workforce'. 28% of Indian organisations and 38% of Australian organisations disclosed information on 'employee training and education'. There is no disclosure by any Indian organisation under the

'diversity, opportunity and human rights' category, whilst 6% to 12% of Australian organisations disclosed information under this category. No Indian organisations disclosed any information under the 'integrity and ethics' category, where on average 13% of Australian organisations did. Consistent with the findings of Hackston and Milne (1996), and Thompson and Zakaria (2004), Indian organisations undertook primarily employee related disclosures, as opposed to those based on customer and community issues.

Appendix IIB reports on the results of environmental disclosure scores classified under four categories: (a) General (b) Energy, water, and materials, (c) Pollution and waste management, and (d) Others. Ninety three percentage of Indian organisations and 95% of Australian organisations made some form of environmental disclosure. The findings are inconsistent with the findings of similar studies, including Thompson and Zakaria (2004) at 16%. Most environmental disclosures by Indian and Australian organisations are on 'energy, water, and materials' followed by the 'general' category which primarily constitutes a company's statement of corporate commitment to environmental protection. Eighty nine percent of Indian and 31% of Australian organisations disclosed information on energy usage and 26% of Indian and 93% of Australian organisation disclosed information on environmental contingent liabilities. Most organisations (84% Indian, 80% Australian) disclosed information about the company's statement of commitment to environmental protection. This indicates that most organisations in both countries are reporting qualitative and declarative information. None of the Indian and 7% of Australian organisations disclosed information about 'contact person for providing additional information' which indicates that organisations are only interested in reporting general information and were not willing to disclose specific information which could be pessimistic.

This finding is consistent with that of Deegan and Gordon (1996). Eighty percentage of Australian organisations disclosed information on indicators 'strategies for the use of recycling products', 68% on 'environmental impacts of principal products and services', 76% on 'environmental accounting policies' and 78% on 'environmental expenditures', but no Indian organisation disclosed any information on these indicators, indicating that they are not taking 'pollution and waste management' seriously. The reason for inadequate environmental reporting is attributable to less pressure being applied to Indian organisations by stakeholders, environmental groups, the general

public and even government. The major difference between the Australian and Indian context may be that environmental awareness in India is still relatively low, despite the country being vulnerable to environmental impacts. Seventy percentage of Australian organisations disclosed information on 'fines/lawsuits/non-compliance incidents' but only two Indian organisations disclosed such incidents. This could be due to the fact fines/punishment alone for non-compliance has not given the desired result. This indicates the need for greater enforcement of laws and market rewards for superior behaviour.

Descriptive statistics of social, environmental and combined (social and environmental) disclosure scores of Indian and Australian organisations are presented below.

Table 4.6 Descriptive Statistics of Social, Environmental and Total

	India			Australia			
	Maxi-mum	Mean	Std. Deviation	Maxi-mum	Mean	Std. Deviation	Max. Score Achievable
Disclosure Score (Social)	11	3.39	2.985	25	9.64	6.742	34
Disclosure Score (Environmental)	11	4.93	2.808	32	9.32	8.797	36
Disclosure Score (Total)	22	8.46	5.488	57	18.96	14.799	70
Valid N	46			47			

Although Figures I and II (Appendix III) indicate that of the 46 Indian organisations, 43 disclosed some environmental disclosure and 38 disclosed some social disclosure, it is evident from Appendix IIB that the information disclosed under the environmental section are primarily general policy statements together with broad declarative statements such as:

The Environmental committee assists the Board in the effective discharge of its responsibilities in relation to environmental matters arising out of activities within the company as they affect employees, contractors, visitors and the communities in which it operates. The committee also reviews the company's compliance with the environment policy and legislation and reviews environmental objectives, targets and due diligence processes adopted by the company. (Orica Limited, Annual Report 2007, p. 18)

Except for information on energy and water usage, almost all other disclosures were qualitative in nature. It is evident from Appendix IIA that with the exception of disclosures under 'employee' category, other information disclosed by Indian organisations are qualitative in nature. The evidence on the extent of SER by Indian organisations reveals that it is low.

Although Figures III and IV (Appendix III) indicate that 95% of Australian organisations disclosed some social and environmental information, it is evident from Appendix IIIB that the information disclosed under the environmental section is mainly within the 'energy, water, and materials' category followed by the 'general' category (and there is no consistency of compliance by the sample organisations). It is evident from Appendix IIIB that very few organisations disclose social information which is qualitative as well as quantitative in nature. Evidence on the extent of social and environmental disclosures by Australian corporations revealed that it is comparatively higher than Indian organisations.

An Independent-Samples T Test was performed to statistically test differences in results between the two countries and the results are reported in the table 4.6a below. Results indicated that Australian organisations reported significantly more total social and environmental information (social and environmental combined) on average than Indian organisations. Further analysis indicated that Australian organisations reported significantly more social information and environmental information[11] on average than Indian organisations.

Table 4.6a Independent-Samples T Test Result

	Social reporting	Environmental reporting	Total reporting (social and environmental combined)
Australia	M=9.6, SD=6.7, n=47	M=9.3, SD=8.9, n=47	M=18.9, SD=14.6, n=47
India	M=3.4, SD=3.0, n=46	M=4.9, SD=2.8, n=46	M=8.3, SD=5.4, n=46
T test	t (91) =5.76, p=0.00.	t (91) =3.16, p=0.00.	t (91)=4.60, p=0.00

Table 4.7 provides descriptive statistics for both dependent and explanatory variables in the regression model examining the determinants of SER. On average, a higher percentage of environmental items were disclosed in annual reports than were social items in both countries. In

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[11] Australian organisations reported significantly more environmental information on average than Indian organisations, with a difference in means = 4.3, or 95% CI [1.6 to 7.0], p=0.00.

summary, Indian organisations achieved 12% of the total available score (8.46/70) and Australian organisations achieved 27% of the total available score (18.96/70), both of which are fairly low. The descriptive for ROA indicates average Australian companies have a negative return on total assets. This odd result was due to the fact that some companies incurred huge losses during that particular year, making the average return negative.

Table 4.7 Descriptive Statistics According to Country and Total Sample

Variables	India(n=46)			Australia (n=47)		
	Range	Mean	Std. Deviation	Range	Mean	Std. Deviation
Total DI (Social+Environ)	21	8.33	5.38	57	18.89	14.64
DI (Social)	11	3.39	2.99	25	9.64	6.74
DI (Environ)	11	4.93	2.81	32	9.26	8.86
ARE	96	38.80	20.54	93	12.83	20.63
ROTA%	48.31	11.62	9.63	3.93	-9.17	5.70
C. IND.	1	.22	.42	1	.19	.40
F&P. IND.	2	.43	.83	2	.38	.80
IE. IND.	3	.65	1.25	3	.57	1.20
IT IND.	4	.87	1.67	4	.77	1.60
M IND.	5	.65	1.7	5	1.06	2.07
Log NA	6.53	8.82	1.28	8.86	2.14	1.60
SAF	1	.07	.25	1	.62	.49
MNC	1	.33	.47	1	.57	.50

DI_i = disclosure index on environmental factors or social factors or total of both factors;

$Log NA_i$ = logarithm of book value of net total assets of the reporting entity at year end;

ARE_i = age in years of the reporting entity based on the date of incorporation;

$ROTA_i$ % = return on total assets, measured by net profit to the of net total assets for company I;

SAF_i = represent the size of reporting entity i's audit firm;

MNC_i = multinational company or a subsidiary of a multinational company;

C. IND.   = industry in which the company operates (Chemical);

F&P. IND. = industry in which the company operates (Forestry and Paper);

IE. IND.   = industry in which the company operates (Industrial Engineering);

IT IND.   = industry in which the company operates (Industrial Transport);

M IND.   = industry in which the company operates (Mining).

4.5.2 Analysis of Empirical Results

Table 4.8 presents results from multiple regressions. The F values for the three models are significant at the 0.01 level. This suggests that the independent variables considered, explain total SER and its categories. However, this does not mean that each of the independent variables contribute to the explanation of the dependent variable. The adjusted R^2's suggest that approximately 38% (in the case of total reporting), 42% (in the case of social reporting), and 27% (in the case of environmental reporting) of the variation in the SER scores between the organisations can be explained by the independent variables included in the regression models.

Column (1) provides the results for total (social and environmental combined) disclosure. The coefficient on NA is positive and significant at the 1% level, indicating that the amount of total disclosure (social and environmental combined) is greater for larger firms after controlling for other factors that are likely to affect the extent of total reporting. The coefficient on NA is positive and significant at the 1% level for social disclosures as well as environmental disclosures, indicating that the amounts of social and environmental reporting are greater for larger firms. IT IND. is significantly associated with total (social and environmental combined) disclosure at the 5% level, negative coefficient suggesting that organisations under this industry disclose less social and environmental information. C IND., F&P IND., and IE IND. are statistically insignificant suggesting that none of these industries reports significantly differently from the mining industry. Only industrial transport industry reports significantly less amount of social and environmental information than the mining industry.

The coefficient on ARE is positive but not statistically significant at the conventional level (i.e., 10% or better). The coefficient on ROTA% is negative and statistically insignificant, suggesting that the extent of total reporting is not related with organisational profitability as measured by return on assets. The coefficient on SAF is positive and MNC is negative. Both are also statistically insignificant (i.e. 10% or better).

Column (1) provides evidence regarding the determinants of disclosure but the results are based on total disclosures by combining social and environmental categories. As these two types of disclosures reflect different aspects of organisation's activities, it is important to see whether the

results vary across social and environmental disclosure categories. Regression results of social and environmental categories are provided in columns (2) and (3) of Table 4.8.

Column (2) reports results for the category of social disclosures. The coefficient on NA is positive and significant at the 1% level, providing evidence that a larger organisation is more likely to disclose social information. IT IND. is significant at the 10% level, indicating that Industrial Transport industry membership is an important factor explaining the variation in the extent of social disclosure. Negative coefficient indicates that less social information being reported by organisations in this industry relative to other organisations in the mining industry. The coefficient on ROTA% is negative and statistically significant at the 10% level, suggesting that organisations with unfavourable profit performance disclose more social information. The coefficients on SAF and MNC are negative and statistically insignificant.

Table 4.8 Results on Multiple Regression Analysis (Australian data) for the Determinant of SER

$DI_i = \beta_0 + \beta_{i1} (ARE) + \beta_{i2} (ROTA + \beta_{i3} (IOC) + \beta_{i4} (NA) + \beta_{i5} (SAF) + \beta_{i6} (MNC)$

Variables	(1) Total disclosure (Social+ Environmental)		(2) Social disclosure		(3) Environmental disclosure	
	Coeff	T- value	Coeff	T- value	Coeff	T- value
(Constant)		1.163		1.314		.876
ARE	.025	.205	.112	.938	-.043	-.322
ROTA %	-.174	-1.183	-.228	-1.608*	-.113	-.707
C. Ind	.152	1.030	.179	1.254	.115	.715
F&P. Ind	-.157	-1.010	-.153	-1.020	-.143	-.842
IE. Ind	-.042	-.278	.043	.297	-.102	-.623
IT. Ind	-.306	-2.086**	-.247	-1.740*	-.318	-1.987**
NA Log	.671	3.649***	.809	4.549***	.493	2.459***
SAF	.147	.847	.024	.142	.225	1.188
MNC	-.069	-.470	-.135	-.951	-.011	-.070
R^2		.508		.539		.415
Adjusted R^2		.388		.427		.272
Model's F-value		4.241***		4.814***		2.913***

Notes
 *** denotes statistical significance at 1% level; * *at 5% level and * at 10% level.

Column (3) presents results for environmental disclosure. IT IND. is significant at the 10% level, suggesting that industry membership is an important factor explaining the variation in the extent of environmental reporting. C. IND., F&P. IND., IE. IND. and M IND. are statistically insignificant

suggesting that none of these industries discloses statistically different environmental information than mining industry. The coefficient on NA is positive and significant at the 5% level, indicating that larger firms disclose more environmental information. ROTA% is negatively associated with the level of environmental disclosure. This result is consistent with that for social disclosure, suggesting that organisations with unfavourable profit performance disclose more social and environmental information. Yet the results are not statistically significant at the conventional level (i.e., 10% or better). Also in line with the results in column (1), the coefficient on SAF is positive and MNC is negative and both are statistically insignificant. Opposite to the results in columns (1) and (2), the coefficient on ARE is negative but not statistically significant at the conventional level (i.e., 10% or better).

Overall evidence suggests that Australian organisations are more driven by social (as opposed to environmental) disclosures. The overall explanatory power of the regression is higher for social disclosure (R^2 =.539) and lower for environmental disclosure (R^2 =.415). This suggests that the factors examined in this study are the best for explaining the variation in social disclosure practice.

Table 4.9 presents the multiple regression results based on Indian data. Column (1) provides the results for total (social and environmental combined) disclosure. The coefficient on NA is positive and significant at the 5% level, indicating that the amount of total disclosure (social and environmental combined) is greater for larger firms after controlling for other factors that are likely to affect the extent of total reporting. F&P IND. and C IND. are significantly associated with total (social and environmental combined) disclosure at the 5% and 10% level but M IND., IE IND. and IT IND. are statistically insignificant, suggesting that there are significant differences in the extent of total reporting among companies in the chosen five industry sectors although all sectors are perceived to be socially and environmentally sensitive. In addition, the negative sign on the coefficient of F&P IND. and C IND. suggests that the extent of total (social and environmental combined) reporting is higher for organisations in the Chemical and Forest & Paper industry sector. The coefficient on ARE is negative but not significant. The coefficient on ROTA% is positive, providing evidence that the extent of total reporting increases with firm profitability as measured by the return on assets. The coefficients on SAF and MCI are also positive but not statistically significant. This could be due to the fact that the Big Four international accounting firms are not

being well represented in India as data shows that most Indian organisations prefer the services of local audit firms. The results on multiple regression analysis (Indian data) for the determinant of SER model are presented in Table 4.9.

Column (1) provides results based on total disclosures by combining social and environmental categories. Regression results of social and environmental categories are provided in columns (2) and (3) of Table 4.9.

Table 4.9 Results on Multiple Regression Analysis (Indian data) for the Determinant of SER Model

$DI_i = \beta_0 + \beta_{i1} (ARE) + \beta_{i2} (ROTA + \beta_{i3} (IOC) + \beta_{i4} (NA) + \beta_{i5} (SAF) + \beta_{i6} (MNC)$

Variables	(1) Total disclosure (Social+ Environmental)		(2) Social disclosure		(3) Environmental disclosure	
	Coeff	T- value	Coeff	T- value	Coeff	T- value
(Constant)		-1.327		-2.326**		-.171
ARE	-.143	-.790	-.129	-.742	-.138	-.743
ROTA%	.121	.727	.156	.983	.065	.384
C. Ind	.437	1.860*	.497	2.212**	.308	1.286
F&P. Ind	.495	2.021**	.469	1.998**	.451	1.801*
IE. Ind	.277	1.228	.287	1.325	.227	.984
IT. Ind	.152	.677	.210	.974	.069	.300
Log NA	.395	2.165**	.495	2.836*	.230	1.236
SAF	.178	1.086	.099	.635	.235	1.406
MNC	.113	.664	.219	1.336	-.015	-.086
R^2		.205		.271		.172
Adjusted R^2		.006		.089		-.035
Model's F-value		1.031		1.491		.831

Notes
 *** denotes statistical significance at 1% level; * *at 5% level and * at 10% level.

Column (2) reports results for the social disclosure category. The coefficient on NA is positive and significant at the 1% level, providing evidence that a larger organisation is more likely to disclose social information. The coefficient on M IND., F&P IND. and C IND. are positive and significant at the 5% level, indicating that there is a significant relationship between industry membership and social disclosure, with more social information being reported by organisations in the Mining, Chemical, and Forest and Paper industries, relative to other organisations in the chosen five industry sectors. However, the results do not support the view of Elkington (1994) that all selected

sectors are perceived to be socially sensitive. The hypotheses about profitability (H_2), multinational company (H_4), age of the reporting entity (H_5) and size of the audit firm (H_6) are not supported.

Column (3) presents results for environmental disclosure. F&P IND. is significant at the 10% level, suggesting that particular industry association is an important factor that may explain the variation in the extent of environmental reporting. The coefficient on NA is positive indicating that larger firms disclose more environmental information but not significant at the conventional level (i.e., 10% or better). This is an unexpected result as social disclosure and total disclosure show a significant size-disclosure relationship. ROTA% is positively associated with the level of environmental disclosure. This result is consistent with that for social disclosure, suggesting that firms with more favourable profit performance disclose more environmental information. But the results are not statistically significant at the conventional level (i.e., 10% or better). Also, in line with the results on columns (1) and (2), the coefficients on SAF and MNC are also positive and the coefficient on ARE is negative but not statistically significant at the conventional level (i.e., 10% or better).

The overall explanatory power of the regression is higher for social disclosure (R^2.271) and lower for environmental disclosure (R^2.172) suggesting that the results for total reporting by Indian organisations are primarily driven by social disclosure. It is expected that organisations within emerging economies will report more on social issues than environmental issues as it is perceived that environmental awareness in emerging economies is still at a low level, despite the countries being vulnerable to environmental impacts.

4.6   Discussion and Conclusion

This study analyses the extent of SER and the factors which influence SER by a sample of Australian and Indian organisations. This study has intrinsic utility, particularly in examining the SER setting in India and also in identifying factors that are important in determining the extent of reporting in emerging countries. One objective of this analysis was the development of a total disclosure index (DI) for each sample organisation, which provides the extent and quality of reporting. There is evidence that suggests that quality and DI scores vary significantly across the 35 indicators examined. Evidence suggests that most of the selected organisations do report some

social and environmental information. However, the extent and quality of such reporting varies substantially. Organisations in both countries place more emphasis on human resource development, product /service improvement and usage of energy and water. These findings are consistent with the findings of Hackston and Milne, (1996) on New Zealand and Raman, (2006) on India indicating that in this regard, emerging countries are not different from developed ones.

The results indicated that the extent of SER by Indian organisations is low. Results (Table 6 and Appendix III A & III B) also indicate that the extent of reporting by the Australian sample is comparatively higher, and information disclosed is better in quality, than Indian organisations. This paper provides evidence that the extent of SER of Indian organisations lags behind that found in many developed countries such as the USA and Japan (Ho & Taylor, 2007); and the UK and Australia (Deegan & Gordon 1996). Sahay (2004) also expressed a similar view that SER by Indian organisations lags significantly behind that found in the developed world, and that reporting by Indian organisations, in general, is unsystematic, piecemeal and inadequate.

Low SER by Indian organisations using GRI guidelines are due to lack of drivers, such as lack of governmental, stakeholder and societal pressure to report on social and environmental issues systematically using GRI indicators instead of indiscriminate disclosure. In a South East Asian context, Thompson and Zakaria (2004) commented that irrespective of nationality, the lack of governmental pressure to report, the cost of reporting, and fear of how readers will react to this information, could be general reasons for social and environmental non-disclosure. Companies appear to respond with a higher extent and a more varied set of reporting when facing multiple expectations. The pragmatic legitimacy (Suchman 1995, p. 578) implies that organisations will respond to the needs of their most demanding stakeholder (i.e. recipients of social support, charitable donations and government) and, consequently, report more social information. This pressing social stakeholder has now been expanded in Australia and the increased extent & variety of social reporting can be seen as a response to broader stakeholder base in Australia. Countries like France, the Netherlands and UK have made requirements and also award incentives to organisations for including non-financial disclosures as a part of regular disclosures (GRI 2002: KPMG 2005). Such pressures and incentives will increase the extent of SER in emerging countries like India.

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"As Clarke and Gibson-Sweet (1999) suggest, some industries have a larger potential impact on the environment but are not as close to the final consumer, and the public is less aware of their behaviour. A company less well known to the public, and involved in activities with a larger potential impact on the environment, would have less reason to justify its existence to society by means of community disclosures than a better known one (Branco & Rodrigues, 2008, p 695)". This appears to be the reason for organisations in the Forestry and Paper, Industrial Engineering, Chemicals, and Mining industries: a larger proportion of them reporting less information related to community involvement.

Environmental reporting by Indian companies is low. This is not surprising in a developing country context as reported by Haniffa and Cooke (2005) and De Villiers and Van Staden (2006). The mere acknowledgement of an environmental impact by a company might invite more (unwanted) attention and thus threaten organisational legitimacy (Mahadeo et al., 2011). In a similar vein, De Villiers and Van Staden (2006, p. 767) contend that companies in South Africa do not focus on environmental disclosures, because they do not have a legitimating 'ability' compared to other social reporting themes. The authors argued that the population's concerns were more focused on social issues rather than environmental. This study also considers that a similar situation may be present in India. Therefore, from a pragmatic legitimacy perspective, the organisations' self-interested calculations about their most immediate audiences are that the environment is a relatively less important aspect for such audiences (Mahadeo et al., 2011). Thus, the lack of environmental reporting may equally explain legitimacy motivations. What was not expected, and seems more difficult to explain, are the results for environmental reporting by Australian organisations in the environmentally sensitive sectors, such as Chemicals, Forestry and Paper, Industrial Engineering and Mining. Organisations in these industries do not disclose more environmental information than social information, as might be expected.

Regression analysis indicates that, for total disclosure (combining social and environmental categories), the extent of Australian and Indian organisational reporting is significantly higher for organisations (i) large in size and (ii) within the Chemical, Industrial Transport and Forestry and Paper industries. The results are consistent with other studies on developed economies (such as

Adams et al., 1998, 2002; Cormier & Gordon, 2001; Deegan & Gordon, 1996; Hackston & Milne, 1996; and Ho & Taylor, 2007). The results support hypothesis H_1 related to size and reporting. It is generally agreed that size proxies for social visibility (Hanniffa and Cooke 2005; Branco and Rodrigues 2008; Reverte 2009) and that larger companies will have a higher extent of SER. The results support the size effect; it appears that larger companies in both countries still give more weight to social reporting as legitimating mechanisms compared to environmental reporting. Higher social visibility attracts more demands for donations and sponsorships and larger companies would face more consequences if they are not seen to empathise with such demands. In this respect, larger organisations are inclined to foster a 'transactional' relationship to maintain this pragmatic form of legitimacy and this is best achieved though the enhanced use of social reporting (Mahadeo et al., 2011, p. 555). The proponents of legitimacy theory emphasise the importance of communication and organisations seem to be interested in the strategic use of unilateral corporate communication such as environmental reporting (Chen & Roberts, 2010, p 660).

With respect to the relationship between industrial membership and disclosure, the results support hypothesis H_3. Industry affiliation was found to be related to SER by prior studies (Branco & Rodrigues, 2008; Ho & Taylor, 2007) using legitimacy theory. Findings partially support previous studies (such as Adams et al., 1998, 2002; Deegan & Gordon, 1996; and Ho & Taylor, 2007) on developed economies. Only the Chemical and Forestry and Paper industries are associated with higher disclosure although all other industries (Mining, Industrial Engineering and Industrial Transport) tested are perceived as socially and environmentally sensitive. It is difficult to explain such results. However, most of the Australian socially and environmentally sensitive companies publish stand alone sustainability reports; which could be the reason for low disclosures of social and environmental information in the annual report. But this was not the case for Indian companies. Companies under Mining, Industrial Engineering and Industrial Transport were not engaged with publishing stand alone sustainability reports, yet their social and environmental information disclosure was low. This suggests that the customer proximity argument (Branco & Rodrigues, 2008) as well as an adherence to a moral form of legitimacy (doing the right thing) could influence the Chemical, Industrial Transport and Forestry and Paper company's extent of reporting, as a means to maintain customer confidence and trust.

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There is no relationship between SER by Indian organisations and their profitability. This finding is consistent with Hackston and Milne (1996) but different from most studies on developed economies in which they found a positive relationship (Roberts, 1992; Stanwick & Stanwick, 1998) or negative (Ho & Taylor, 2007). In this respect Australian results are different. Total disclosure (combining social and environmental categories) for Australian organisations, is significantly higher for those that are (i) larger in size, (ii) with membership in the Industrial Transport industry and (iii) have negative return on total assets. Australian organisations with negative return on total assets reported significantly more on social and environmental categories. These results are consistent with the expectations resulting from the theoretical framework proposed and with previous SER studies. These findings are consistent with the findings of Ho and Taylor (2007) but contradict the findings of Hackston and Milne (1996), which reported a positive relationship with size and industry membership but no relationship with profitability.

Recent empirical studies have also reported non-significant results (e.g. Branco and Rodrigues 2008; Reverte 2009; Mahadeo et al., 2011). Suchman (1995, p. 576) argues (within the legitimacy perspective) that instead of making substantial changes to company operations to gain/ maintain social acceptance, managers will favour flexibility and adopt a ritualistic use of SER. The absence of a relationship can thus be viewed as consistent with legitimacy theory since 'functional' wealth-maximising outcomes cannot be expected from the increased provision of SER (Tolbert and Zucker 1983, p. 26). Once companies have adopted SER patterns influenced by legitimacy motivations, then it appears unlikely that periodic changes in short-term performance will 'disturb' the dynamics of the communication with society (Mahadeo et al., 2011, p. 555).

The result also indicates organisational age (years) is not associated with SER for both countries. This is not consistent with prior findings (Gray et. al., 1995a; Roberts, 1992) that SER is related to age. Higher DI of fewer young organisations than the old organisations suggests that organisational age is not at all associated with the extent of reporting in an Indian context. This could be due to changes in managerial attitude toward SER. All organisations could have realised that to survive they have to discharge their social and environmental accountability irrespective of age. Auditor size and multinational company status are not associated with SER for both countries. Craig and Diga (1998) found evidence of higher disclosure levels by multinational corporations in

emerging countries (Malaysia, Indonesia, the Philippines and Thailand) but this study does not support that finding. Table 4.10 summarises the results from the hypothesis testing.

Indian organisations seem to be quite sensitive to public perceptions, as proxied by their industry membership and size, when determining SER strategies. These findings are well documented in the literature in Western developed countries. Cormier and Magnan (2003, p. 58), in analysing French firms' environmental reporting practices, suggest that "corporate disclosure strategies seem to be determined in a similar way, irrespective of a given country's socio-cultural environment". They consider that this "is an illustration of the strong impact of globalised stock markets on fostering convergence in corporate practices".

Table 4.10 Summary of the results from the hypothesis testing

Variable	Hypothesis	Australia		India	
		Social	Environmental	Social	Environmental
Size of the Entity	Positive asson	Positive	Positive	Positive	Non- signi.
Profitability	Positive asson	Negative	Non- signi.	Non- signi.	Non- signi.
Industrial Membership	Positive asson	Negative: IT. Ind.	Negative: IT. Ind.	Positive: C, F&P. Ind.	Positive: F&P. Ind.
Age of the Entity	Positive asson	Non- signi.	Non- signi.	Non- signi.	Non- signi.
Size of the Entity's Audit Firm	Positive asson	Non- signi.	Non- signi	Non- signi.	Non- signi
Association with MNC	Positive asson	Non- signi.	Non- signi.	Non- signi.	Non- signi.

The Australian result provided full support for the applicability of legitimacy theory as an explanation for the decision to report social and environmental information. But Indian organisations provided limited support for the applicability of legitimacy theory as an explanation. The level of Indian SER does not replicate a serious effort by organisations to appear legitimate in the society via annual report disclosures. On the other hand, the nature of reporting suggests some concern of the organisations to depict a socially and environmentally responsible image.

The study provides contributions to the theory of legitimacy in two ways. First, whilst many prior studies have examined industry effects by comparing disclosures between industries, this study examined for effects within one group of industries considered as socially & environmentally sensitive. The finding of differences in reporting levels between companies with different profile

levels is arguably an important contribution to legitimacy theory. This finding means that there are not only industry effects explained by legitimacy theory, but there can also be large variations even within an industry. In addition, the level of size of a company can also be an important explanatory factor for legitimacy theory.

The apparent lack of significant variation between the factors manipulating SER practices of Indian organisations contrasted to Australian organisations is an interesting result. Results confirm the comments of Branco and Rodrigues (2008, p 699) that "there is no reason to expect that organisations in the less developed capital markets will behave in a significantly different manner than organisations in more developed capital markets".

The paper used GRI to select the specific aspect (dependent variables) of the analysis. The limitation of the paper is the use of selected GRI indicators only for dependent variables in the study. The regression results have propositions for GRI guidelines compliance. The disclosure index created by using GRI indicators and used in this study can be exploited by preparers in measuring the degree of compliance by their organisations. The index can be updated by accumulating new guidelines and would help a researcher undertaking future conformity analysis. Future research could include some other specific antecedents or identify new factors specific to emerging economies.

Unlisted organisations SER practices are more subject to common related issues than those of listed organisations. Use of a sample of unlisted organisations could be an appealing probable extension of this study. To conclude, a larger sample usage could be an essential approach in adding fresh insights to the investigation of SER by emerging economies.

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Appendix I: List of Social and Environmental Indicators used

(A) List of Social disclosure Indicators

Employee

(1)   Company's statement of a corporate commitment to its shareholders and for society as a whole

(2)   Number of employees and their geographic distribution

(3)   Turnover of workforce

(4)   Levels of employee education

(5)   Employee benefits concerning health care, disability, or retirement

(6)   Employee health and safety information such as number of lost workdays, accidents or deaths

(7)   Employee training and education

Diversity, opportunity and human rights

(8)   Any mention of policies or programs addressing workplace harassment and discrimination

(9)   Number or percentage of women and minorities in the organisation

(10)   Policies or procedures dealing with human rights issues

Customers and communities

(11)   Any mention of policies for preserving customer health and safety

(12)   Company's involvement in community activities

(13)   Policies for prioritising local employment

Integrity and ethics

(14)   Policies for compliance mechanisms for bribery and corruption

(15)   Policies for preventing anti-competitive behaviour

(16)   Policies for consumer privacy

(17)   Provision of business code

(B) List of Environmental disclosure Indicators

General

(1)   Company's statement of a corporate commitment to environmental protection

(2)   Environmental audit

(3)   Environmental awards

(4)   Incorporation of environmental concerns into business decisions (e.g., green purchasing)

(5)   Identification of a contact person for providing additional information

Energy, water, and materials

(6)   Energy usage information

(7)   Encouragement of renewable energy consumption

(8)   Water usage information

(9)   Information concerning the materials that are re-cycled or re-used

(10)   Any mention of strategies for the use of recycling product

Pollution and waste management

(11)   Information about the sources, types and remedy procedures of emissions

(12)   Pollution impacts of transportation equipment used for logistical purposes

(13)   Environmental impacts of principal products and services

(14)   Discussion on the amount, types of wastes and methods of waste management

Others

(15)   Any mention of environmental accounting policies

(16)   Environmental expenditures

(17)   Fines/lawsuits/non-compliance incidents

(18)   Environmental contingent liabilities

Source: Adopted from Ho, L. J., & Taylor, M. E (2007), p 149-150

Appendix II: Descriptive for Social and Environmental Disclosure Indicators in Indian and Australian organisations.

IIA: Descriptive for Social Disclosure Indicators in Indian and Australian organisations

| Categories & Disclosure Indicators	INDIA Score	INDIA Frequency	INDIA %	AUSTRALIA Score	AUSTRALIA Frequency	AUSTRALIA %
Employee						
1) Company's statement of a corporate commitment to its shareholders and for society as a whole	0 1 2	20 26 0	43.5 56.50 0	0 1 2	6 10 31	12.8 21.3 66.0
2) Number of employees and their geographic distribution	0 1 2	39 2 5	84.8 4.3 10.9	0 1 2	25 1 21	53.2 2.1 44.7
3) Turnover of workforce	0 1 2	43 1 2	93.5 2.2 4.3	0 1 2	44 1 2	93.6 2.1 4.3
4) Levels of employee education	0 1 2	36 0 10	78.3 0 21.7	0 1 2	33 2 12	70.2 4.3 25.5
5) Employee benefits concerning health care, disability, or retirement	0 1 2	26 1 19	56.5 2.2 41.3	0 1 2	16 7 24	34.0 14.9 51.1
6) Employee health and safety information such as number of lost workdays, accidents or deaths	0 1 2	37 4 5	80.4 8.7 10.9	0 1 2	18 15 14	38.3 31.9 29.8
7) Employee training and education	0 1 2	33 3 10	71.7 6.5 21.7	0 1 2	29 4 14	61.7 8.5 29.8
Diversity, opportunity and human rights						
8) Any mention of policies or programs addressing workplace harassment and discrimination	0 1 2	46 0 0	100.0 0 0	0 1 2	41 1 5	87.2 2.1 10.6
9) Number or percentage of women and minorities in the organisation	0 1 2	46 0 0	100.0 0 0	0 1 2	41 2 4	87.2 4.3 8.5
10) Policies or procedures dealing with human rights issues	0 1 2	46 0 0	100.0 0 0	0 1 2	44 1 2	93.6 2.1 4.3
Customers and communities						
11) Any mention of policies for preserving customer health and safety	0 1 2	38 5 3	82.6 10.9 6.5	0 1 2	39 4 4	83.0 8.5 8.5
12) Company's involvement in community activities	0 1 2	45 1 0	97.8 2.2 0	0 1 2	29 3 15	61.7 6.4 31.9
13) Policies for prioritising local employment	0 1 2	46 0 0	100.0 0 0	0 1 2	37 4 6	78.7 8.5 12.8
Integrity and ethics						
14) Policies for compliance mechanisms for bribery and corruption	0 1 2	46 0 0	100.0 0 0	0 1 2	37 3 7	78.7 6.4 14.9
15) Policies for preventing anti-competitive behaviour	0 1 2	46 0 0	100.0 0 0	0 1 2	41 2 4	87.2 4.3 8.5
16) Policies for consumer privacy	0 1 2	46 0 0	100.0 0 0	0 1 2	44 1 2	93.6 2.1 4.3
17) Provision of business code	0 1 2	39 2 5	84.8 4.3 10.9	0 1 2	11 14 22	23.4 29.8 46.8

Note: 0 = no disclosure, 1= qualitative disclosure, 2 = quantitative disclosure

IIB: Descriptive for Environmental Disclosure Indicators in Indian and Australian organisations

Disclosure Indicators	INDIA			AUSTRALIA		
	Score	Frequency	%	Score	Frequency	%
General						
1. Company's statement of a corporate commitment to environmental protection	0	7	15.2	0	9	19.1
	1	39	84.8	1	11	23.4
	2	0	0	2	27	57.4
2. Environmental audit	0	45	97.8	0	30	63.8
	1	1	2.2	1	9	19.1
	2	0	0	2	8	17.0
3. Environmental awards	0	43	93.5	0	41	87.2
	1	2	4.3	1	0	0
	2	1	2.2	2	6	12.8
4. Incorporation of environmental concerns into business decisions (e.g., green purchasing)	0	45	97.8	0	31	66.0
	1	0	0	1	1	2.1
	2	1	2.2	2	15	31.9
5. Identification of a contact person for providing additional information	0	46	100.0	0	44	93.6
	1	0	0	1	1	2.1
	2	0	0	2	2	4.3
Energy, water, and materials						
6. Energy usage information	0	5	10.9	0	32	68.1
	1	10	21.7	1	6	12.8
	2	31	67.4	2	9	19.1
7. Encouragement of renewable energy consumption	0	43	93.5	0	37	78.7
	1	1	2.2	1	4	8.5
	2	2	4.3	2	6	12.8
8. Water usage information	0	15	32.6	0	31	66.0
	1	9	19.6	1	6	12.8
	2	22	47.8	2	10	21.3
9. Information concerning the materials that are re-cycled or re-used	0	44	95.7	0	36	76.6
	1	1	2.2	1	3	6.4
	2	1	2.2	2	8	17.0
10. Any mention of strategies for the use of recycling product	0	46	100.0	0	38	80.9
	1	0	0	1	0	0
	2	0	0	2	9	19.1
Pollution and waste management						
11. Information about the sources, types and remedy procedures of emissions	0	41	89.1	0	30	63.8
	1	3	6.5	1	4	8.5
	2	2	4.3	2	13	27.7
12. Pollution impacts of transportation equipment used for logistical purposes	0	41	89.1	0	41	87.2
	1	3	6.5	1	3	6.4
	2	2	4.3	2	3	6.4
13. Environmental impacts of principal products and services	0	46	100.0	0	32	68.1
	1	0	0	1	3	6.4
	2	0	0	2	12	25.5
14. Discussion on the amount, types of wastes and methods of waste management	0	38	82.6	0	33	70.2
	1	8	17.4	1	3	6.4
	2	0	0	2	11	23.4
Others						
15. Any mention of environmental accounting policies	0	46	100.0	0	36	76.6
	1	0	0	1	4	8.5
	2	0	0	2	7	14.9
16. Environmental expenditures	0	46	100.0	0	37	78.7
	1	0	0	1	7	14.9
	2	0	0	2	3	6.4
17. Fines/lawsuits/non-compliance incidents	0	44	95.7	0	11	23.4
	1	2	4.3	1	3	6.4
	2	0	0	2	33	70.2
18. Environmental contingent liabilities	0	34	73.9	0	44	93.6
	1	0	0	1	0	0
	2	12	26.1	2	3	6.4

Note: 0 = no disclosure, 1= qualitative disclosure, 2 = quantitative disclosure

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Appendix III: Graphs showing Social, Environmental and Total (social & environmental combined) Disclosure Scores of Indian and Australian Organisations.
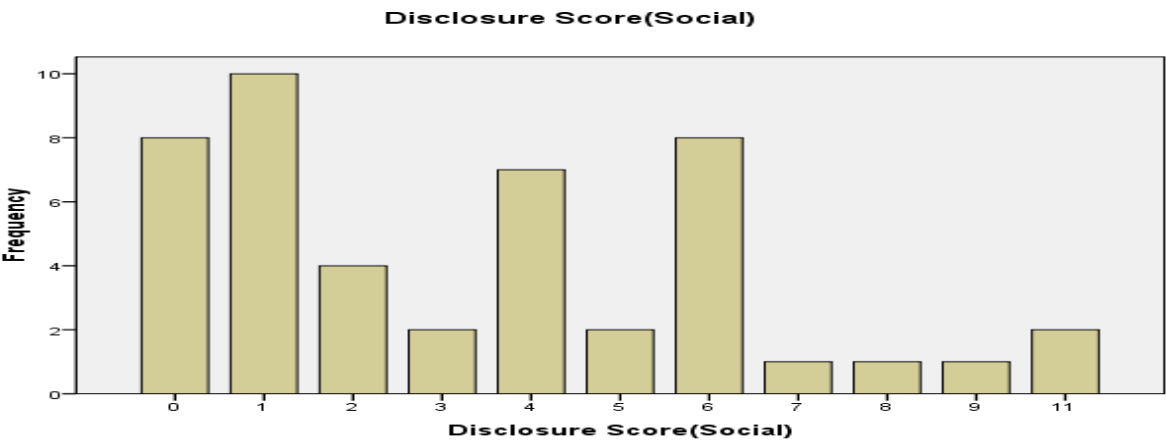
Figure 4-1 Social Disclosure Scores of Indian Organisations
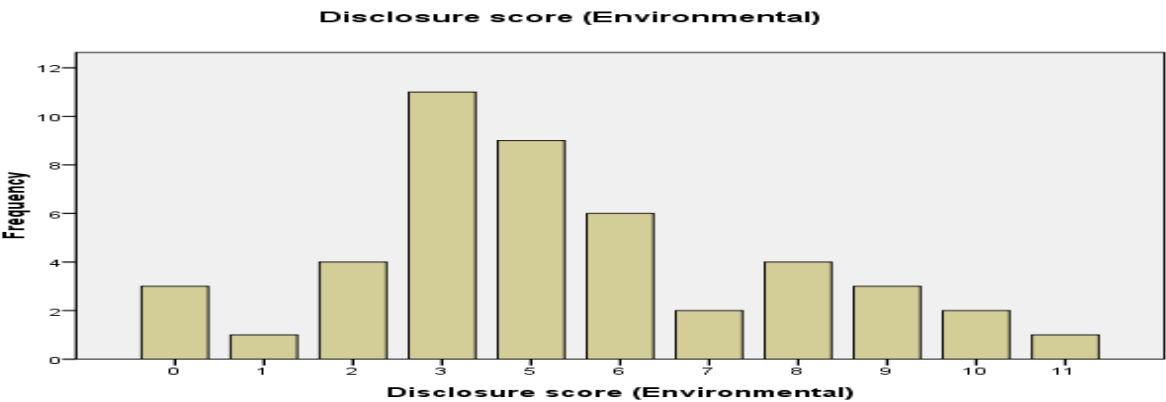
Figure 4-2 Environmental Disclosure Scores of Indian Organisations0-3
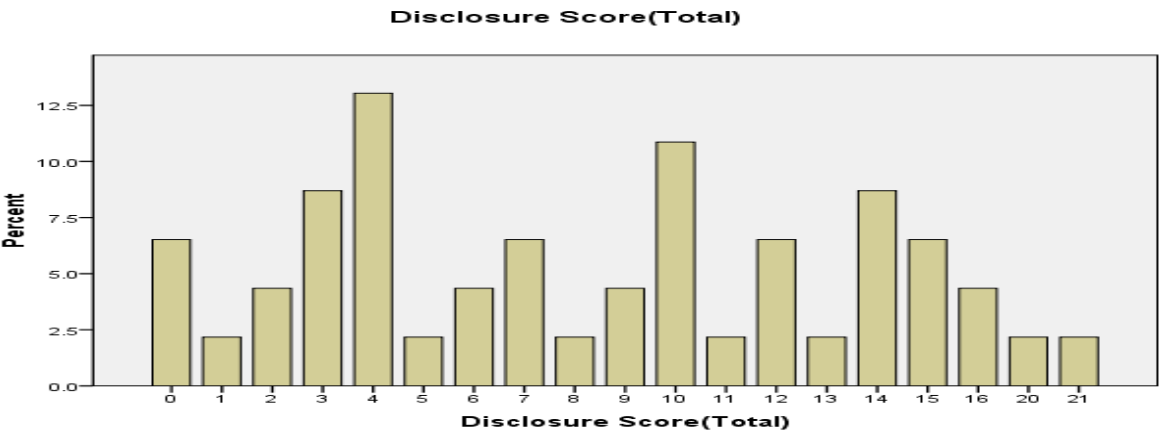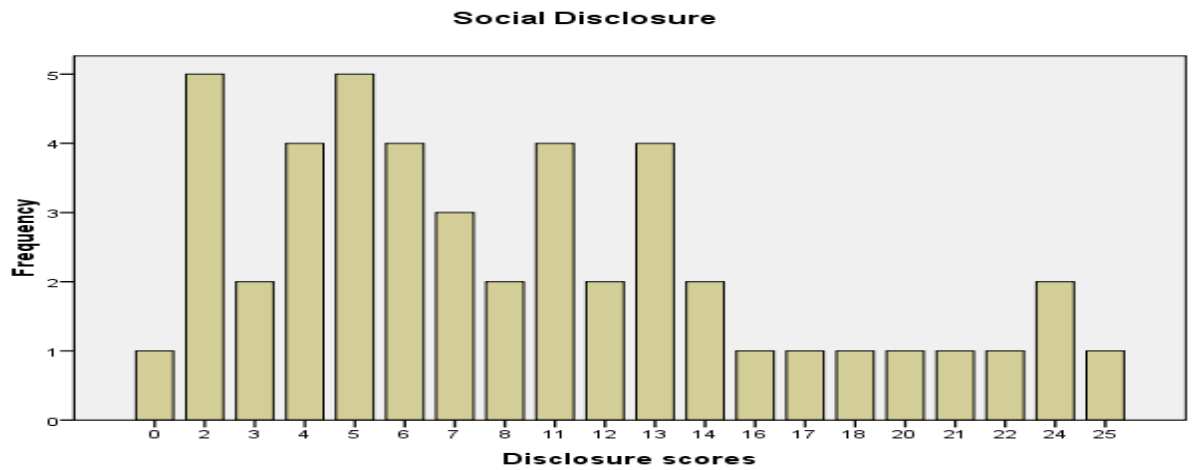
Social Disclosure

Figure 4.4 Social Disclosure Scores of Australian Organisations0-5

Environmental Disclosure
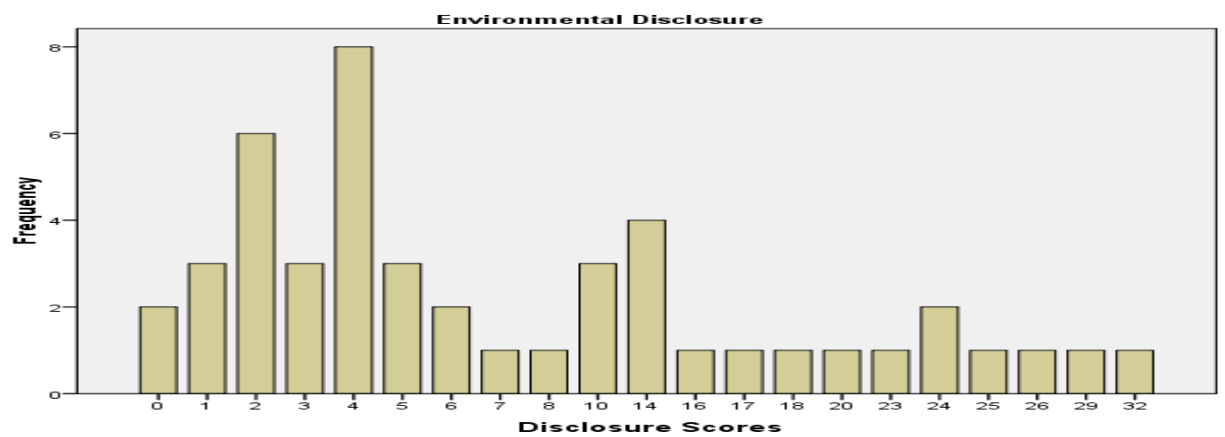
Figure 4.5 Environmental Disclosure Scores of Australian Organisations0-6

Total Disclosure (Social + Environmental)
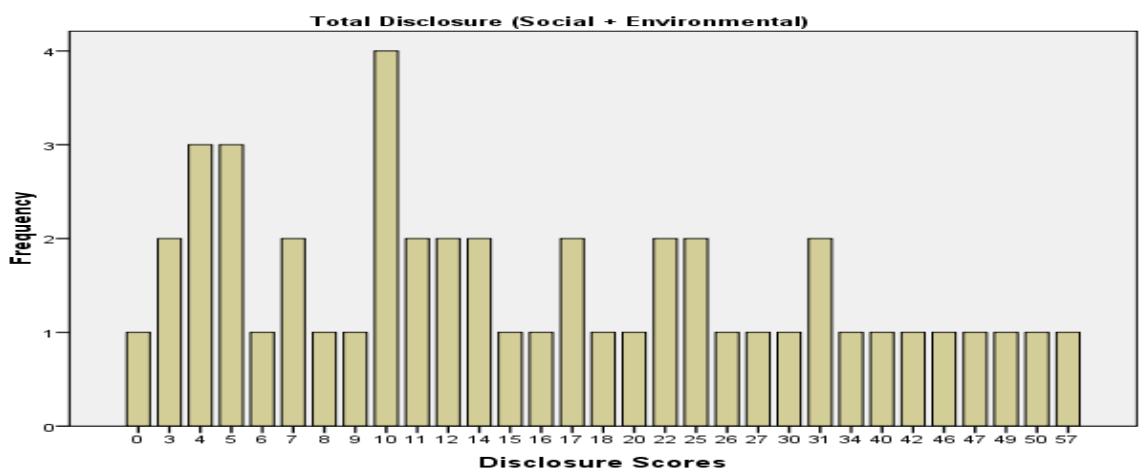
Figure 4.6   Total (Social + Env) Disclosure Scores of Australian Organisations0-7

Chapter 5

CONCLUSION

5.1   Introduction

In this final chapter section 5.2 provides a summary of the thesis drawn from the three articles. Section 5.3 of the thesis presents conclusions reached from the three articles. The implications of the findings are discussed in section 5.4 and section 5.5 identifies the thesis' limitations. The final section 5.6, addresses the further future research.

5.2   Summary Drawn from the Three Papers

The first paper seeks to obtain a better understanding of managerial attitudes toward SEA within developed and developing Asian economies, with a focus on Australia and India. Responses to most of the social accountability items suggest that respondents to the study had moderate to strong support for most of social accountability related questionnaire items. Relatively lower standard deviation of Indian respondents as opposed to Australian respondents, reflected greater consensus in attitudes amongst Indian respondents. Respondents were concerned about a range of social issues, and Indian respondents were concerned for a greater range of social issues than Australian respondents. Australian participants strongly supported a few issues surrounding social accountability whereas Indian respondents strongly supported these as well as other issues on social accountability. By comparing current result with reported result of Raman (2006), who found that Indian organisations only emphasise service improvement and development of human resources, one can conclude that despite poor reporting by Indian companies compared to their Australian counterpart, social responsiveness in India has improved over time. This result confirms the findings of the Indian Institute of Management (Bangalore) study that social responsiveness in India has increased in last five years (cited in Balasubramanian et al., 2005). The reason for this increased responsiveness could be due to 'improved literacy', 'enlightened professionalism', and 'social awakening' (Balasubramanian et al., 2005).

Respondents also exhibited strong environmental support, favouring specific issues concerning environmental accountability such as international standards for an environmental management system, keeping records of greenhouse gas emissions, consultation with stakeholder groups when making environmental policy decisions and publication of stand-alone environmental reports. However, Indian respondents were stronger than Australian respondents in their support of the abovementioned environmental issues. These findings confirm the findings of Cummings (2006) where Chinese and Indonesian respondents were stronger than Australian respondents in their support of environmental issues.

This study reveals an overall positive attitude towards SEA amongst these groups of managers in Australia and India, reflecting the Kuasirikun (2005) study that revealed an overall positive attitude towards social and environmental accounting amongst accountants, auditors, and accounting-related professionals in Thailand, and the study of Liangrong and Song (2008) which depicted a positive attitude towards SEA amongst Chinese managers. However, the findings contrast with the findings of the Deegan et al., (1996) study, which indicated that Australian accounting managers did not see environmental reporting as part of their job and Gray et al. (1996) which suggested a lack of awareness of environmental issues and their financial implications amongst accounting managers in Britain. The findings also indicated that respondents were concerned about environmental accountability, categorising few issues to be more important than environmental factors. Of the 18 social and 16 environmental issues presented, Indian respondents were more prominent on eight social and six environmental issues than the Australian respondents, (mean score more than 4.01 out of 5.0). The difference in attitudes towards SEA between emerging and developed economies could be due to the differences in the level of socio-economic (Xiao et al., 2005) and technological development (Williams & Pei, 1999) between these two groups of countries. Better social and economic development in Australia than in India indirectly could have influenced managerial attitudes. This finding was also similar to that of Cummings (2006) where Chinese and Indonesian respondents were more prominent than Australian respondents on seven out of 18 environmental questions presented. Significant differences did exist among the respondents on various questions.

Factor analyses on social accountability revealed three and five factors for Australian and Indian respondents respectively. The items loaded in the different factors were different for the Australian and Indian respondents. Australian respondents observed the role of different parties but Indian respondents considered factors internal to the organisation to measure social accountability. Environmental accountability revealed four factors for both Australian and Indian data but item loading on different factors that formed the underlying dimension was different for both groups. The results indicate Indian managers strongly support government controlled environmental accountability. Australian managers also supported (with a loading of .70) government controlled environmental accountability. The result indicates that Australian and Indian managerial attitudes towards SEA have significantly changed from what was traditionally perceived as public relations activity and philanthropic work. The change of Indian managerial attitudes could be due to concern for economic growth, export-orientation, a tradition of government influence over business, strong family/community business structure and increased government legislation and regulation (Balasubramanian et al., 2005). These factors place pressure on natural resources and therefore SEA is important. The result helps us to better understand the increased social responsiveness and changing attitudes towards SEA of Indian managers. There is a strong belief (argued by Belal & Momin, 2009) that CSR is an essential element in 'social uplift' and development, something very relevant to an emerging economy (India), but less emphasised in the UK, US or Western developed nations (Australia).

Real progress on SEA may ultimately depend upon the ability of governments to impose and enforce reporting mandates (Fukukawa, et al., 2007). The Canadian Democracy and Corporate Accountability Commission (CDCAC, 2002) also documented a high level of support amongst Canadian investors, for the establishment of formal social and environmental accountability standards. Frost and English (2002) stated that mandatory reporting can improve disclosure; there is greater scope for disclosure of social and environmental issues and their interaction with the broader community by companies.

The first paper documents strong support for mandatory CSR reporting by Indian respondents (mean 4.11 and factor loading .65) but Australian respondents did not offer strong support (mean

3.44). Indian managerial attitudes have been supported by Kuasirikun (2005, p 1054) who commented that,

> The autonomy of social and environmental accountants, which will always be finely balanced between social-environmental exigencies and company financial interest, can only in the final analysis be made viable by the establishment of a set of regulatory accounting standards on social and environmental disclosure that are implemented and enforced by governmental and statutory legislation.

The second paper undertook factor analysis with varimax rotation on the six measures of EMP and EOP. Following factor analysis, a correlation table was presented that analyses the covariance between the factors including regression analysis on the relationships between the Corporate Environmental Performance (CEP) measures as modelled. After running an initial PCA on EPM indicators (1) organisational system, (2) stakeholder relations, (3) operational counter measures, and (4) environmental tracking, we found that the items were loaded on various factors instead of an ideal one factor under the rotated component matrix table. For example, PCA on organisational system items were loaded on four factors instead of one. This result indicated that there were too many dimensions to measure under the organisational system. Ideally they all should load on one factor. This result also implied that there is no single model which can be effectively used in different geographical locations due to differences between companies from various economies or industry sectors. Differences in organisational cultural attitudes and environmental regulations also hinder the effective use of one single model in different contexts. Xie and Hayase (2007) also commented that given differences in organisational culture and regulatory environment between companies from different countries or regions, alternative measurement frameworks should be applied.

Finally the paper developed an operational EPM model and proposed to use the estimated value of Input and Output data as a measure of OPIs. We have empirically tested the construct reliability of the EPM model using the survey data collected from 320 companies in Australia and India operating in the Chemical, Industrial, Pharmaceutical and Biotech industries. The PCA with the MPIs and OPIs has provided evidence that CEP consists of two dimensions, which can be interpreted as EMP and EOP respectively. These two dimensions are interdependent because

input and output (which describe EOP) are derived from operational countermeasures and environmental tracking. This result implies that corporate efforts in environmental management will lead to good operational performance.

Factor analysis of Indian data indicated four distinct factors with good reliability ranging from .70 to .90 and Australian data indicated six distinct factors with reliability ranging from .60 to .90. The same data set was used to assess the relationship between all the factors of EPM and OPM using a correlation matrix. We modelled the relationship between each of the factors of EPM and OPM to CEP by drawing a latent construct in the AMOS software. The results indicated that EMP is more dependent on its organisational system and stakeholder relations than operational countermeasures and environmental tracking. Indian managers consider that corporate environmental performance is more dependent on environmental management performance than environmental operational performance, whereas Australian managers consider both environmental management performance and environmental operational performance to be equally important in determining corporate environmental performance. This difference could be due to the differences in the level of socio-economic and technological development and cultural perceptions between these two countries. A company would provide good (or poor) quality of environmental information in a way which is consistent with its perceived aggregate levels of cultural values in a particular country. Two possible explanations can be made for this finding. First, it is possible that companies that are proactive in environmental management may aim to improve their reputation and moderate the pressures from various stakeholders rather than to actually reduce their environmental loads (Jung et al., 2001). Second, "it may take more time for the companies to actually reduce their environmental loads. In other words, at present most companies are mainly devoting themselves to environmental management; in future, as the environmental management system is utilised effectively and efficiently, an improvement in operational performance may appear" (Xie & Hayase, 2007, p. 166). Differences in social and economic development, as well as cultural values, between Australia and India, could be the reason for the different attitudes regarding corporate environmental performance measurement across the two countries.

Due to the non-availability of relevant data on input and output indicators, an estimated value was introduced in the study. We proposed that the summation of both variables can help predict the

resources used and waste discharged by companies in their regular course of operation. However, the estimated values are useful to run the CEP model and predict its validity. We believe future researchers who face similar difficulties regarding OPI data, will be able to use the computation provided in the study to develop estimated data sets for OPIs. Xie and Hayase (2007) commented that their study was still a preliminary exploration into operationalising the constructs of the CEP measurement framework and needs to be improved in future studies. This study tested the robustness of the constructs using a larger-sample-size of 320 companies (compared to 58 used in Xie & Hayase, 2007) drawn from three industries (compared to single industry used in Xie & Hayase, 2007).

Xie and Hayase (2007) developed an operational EPM model and proposed to use the Environmental Intensity Change Index (EICI) as a measure of OPIs. Results have confirmed that the EICI and the evaluation based on it are comparable across sub-sectors, even though the sub-sectors are different in resources/energy consumption. Although this is an improvement on the measures used in previous studies, it was not feasible to use EICI as a measure of OPIs across geographical locations because of the non-availability of the necessary data. The EICI measure has also been criticised as being partial to those companies who have greatly improved their performance before the base year, because even if those companies make the same or even more efforts during the evaluated period, they have difficulty in showing a drastic improvement in their performance, whilst the previous under performers can show significant improvement by making the same or even less efforts during the same period (Xie & Hayase, 2007).

The third paper analyses the extent of SER and factors which may influence SER, using a sample of Australian and Indian organisations. The theoretical framework of the paper is based on legitimacy theory. This framework advocates that managers progressively disclose more, believing that society sees SER as an indication of enhanced social and environmental behaviour, and reporting on it therefore influences the external view of the organisations standing. Organisations can create reputation by indicating that they function in harmony with ethical and social norms, while failing to do so can jeopardise reputation.

Legitimacy theory advocates that an organisation maintains its 'license to operate' in society by complying with the expectations of the community. An organisation is deemed to be "legitimate" to the extent that there is "congruence between the social values associated with or implied by their activities and the norms of acceptable behaviour in the larger social system of which they are a part" (Dowling & Pfeffer, 1975, p. 122). "When disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy", (Lindblom, 1994, p. 2). Thus, legitimacy theory provides a useful foundation to explain the disclosure of social responsibility information. Chen and Roberts (2010) have suggested the use of legitimacy theory as a suitable theoretical framework for social and environmental studies. Belal and Owen (2007) and Islam and Deegan (2008) have used legitimacy theory to explain CSR practice in an emerging economy perspective. Although the study uses legitimacy theory to explain CSR practice in both Australia and India, it is expected that the theory will be more applicable to Australia because of its more developed socio economic framework, strong governance, robust political system and heterogeneous culture. These factors provide the basis for a more active stakeholder base, and greater pressure for organisational accountability.

This study has intrinsic utility, particularly in examining the SER setting in India and also in identifying factors that are important in determining the extent of reporting in emerging economies. One objective of this analysis was the development of a total disclosure index (DI) for each sample organisation, which analyses the extent of reporting. There is evidence that suggests that DI scores vary significantly across the 35 indicators examined. Organisations in both countries place more emphasis on human resource development, product /service improvement and usage of energy and water. These findings are consistent with the findings of Hackston and Milne (1996) on New Zealand and Raman (2006) on India.

The results also indicate that the extent of the reporting by the Australian sample is comparatively higher and information disclosed is better in quality than for the Indian organisations. This paper provides evidence that the extent of SER of Indian organisations lags behind that found in many developed countries such as the USA and Japan (Ho & Taylor, 2007); and UK and Australia (Deegan & Gordon 1996). Sahay (2004) also expressed a similar view that SER by Indian

organisations lags significantly behind that found in the developed world and the reporting by Indian organisations, in general, is unsystematic, piecemeal and inadequate.

The regression analysis indicates that, for total disclosure (combining social and environmental categories), the extent of Indian organisational reporting is significantly higher for those that are (i) larger in size and, (ii) have membership of the Chemical and Forestry and Paper industries. The results are consistent with other studies on developed economies such as Deegan and Gordon 1996; Hackston and Milne, 1996; Adams et al., 1998 and 2002; Cormier and Gordon, 2001; and Ho and Taylor, 2007. With respect to the industrial membership-disclosure relationship, the Indian results support hypothesis H_3 but Australian result do not support the hypothesis. A number of studies have identified the nature of a company's industry as a factor affecting SER. It has been argued that this may be because companies in different industries have differing motivations towards legitimation owing to the different perceptions that society has with regard to their activities, and how the management of the companies themselves perceive opinions about them (Campbell, Craven & Shrives 2003). The findings partially support previous studies (such as Adams et al., 1998, Adams, 2002; Deegan & Gordon, 1996; Ho & Taylor, 2007) on developed economies.

Both agency theory and legitimacy theory contain arguments for a size-disclosure relationship. Cowen et al. (1987) argue that since "larger companies undertake more activities; make a greater impact on society; have more shareholders who might be concerned with social programs undertaken by the company; then their annual report provides a relatively efficient means of communicating information". Organisational size and industry affiliation by and large have a positive association with total SER, which is consistent with previous studies. Results are also consistent with the expectations ensuing from the theoretical framework.

There is no relationship between SER by Indian organisations and their profitability. This finding is consistent with Hackston and Milne (1996) but different from most of the studies on developed economies in which they found a positive (Roberts, 1992; Stanwick & Stanwick, 1998) or negative (Ho & Taylor, 2007) relationship. In this respect Australian results are different. Australian organisation's reporting on total disclosure (combining social and environmental categories) is

significantly higher for those that (i) are large in size, but less for those that (ii) are members of the Transport industry. Australian organisations with lower return on total assets reported significantly more on social and environmental categories. These results are consistent with the expectations resulting from the theoretical framework proposed and with previous SER studies. These findings are consistent with the findings of Ho and Taylor (2007) but contradict the findings of Hackston and Milne, (1996), which reported a positive relationship with size and industry membership but no relationship with profitability.

The result also indicates an organisation's age in years is not associated with SER for both countries. This is not consistent with prior findings (Gray et. al., 1995a; Roberts, 1992) that SER is related to organisational age. Higher disclosure index of few young organisations than told organisations suggests that organisational age is not at all associated with the extent of reporting in an Indian context. This could be due to changes in managerial attitude toward SER. Auditor's firm size and multinational status of the company and its subsidiaries are not associated with SER for both the countries. Craig and Diga (1998) found proof of higher reporting levels by multinational corporations in emerging economies but this study does not support that finding.

5.3   Conclusions Drawn from the Three Papers

The study explores the differences in social and environmental responsibilities between Australia and India in three areas (i) attitudes; (ii) performance measurement and (iii) reporting practices. The thesis aims to answer the following lead research question along with six sub questions using different aspects of legitimacy theory.

What are the differences in corporate social responsibilities between Australia and India?

Paper one sought to explore attitude of developed and emerging economies and tried to answer the following two questions.

a. What are managerial attitudes towards social and environment accountability in Australia and India?

b. How do managerial attitudes towards social and environment accountability differ between these two countries?

Both Australian and Indian groups of respondents showed positive attitudes toward social and environmental accountability (SEA). Indian respondents exhibited greater consensus and stronger support than Australian respondents. Indian respondents were concerned and strongly supported for a greater range of social issues where as Australian participants supported a few issues surrounding social accountability. Australian respondents also exhibited strong environmental support, favouring specific issues concerning environmental accountability. However, Indian respondents were stronger than Australian respondents in their support of the environmental issues.

From the legitimacy theory perspective an organisation would provide information if management perceived that the particular information is demanded by the societies within which it operates. Overall positive managerial attitudes towards SEA and increased responses to the perceived importance of stakeholders demonstrated by the result, reflect the applicability of organisational legitimacy theory. Pragmatic legitimacy behaviours may focus on delivering favourable outcomes and stakeholder interests. The dynamics may focus on incorporating tools into policy-making and/or adopting component measures of performance (Suchman, 1995, p. 578). The results show that managers strongly supported incorporating tools into policy-making (for example acquiring ISO14001 & consulting with stakeholder for environmental policy decision) and/or adopting component measures of performance to deliver favourable outcomes and stakeholder interests. These indicate that managers wish to maintain a pragmatic basis for, and/or moral legitimacy of, their organisations. Many of the global institutional forces create pressures for a rise of explicit CSR; the extent to which explicit CSR will become more prevalent in emerging economies still very much depends on the strength of institutional dynamics among cultural ethics, values, religion, and governments, which have imprinted on the form and focus of CSR (Yin & Zhang, 2012). Regarding CSR in a developing country context, the explanatory power of organisational legitimacy goes beyond its strategic tradition. Indian respondents revealed that their cultural ethics and values have a strong influence on their attitudes towards accountability.

The study demonstrates that arguments relating to moral legitimacy are more important than statements referring to pragmatic legitimacy when stakeholders evaluate a company's legitimacy.

The construction of moral legitimacy is complex and inconsistencies between various aspects, such as contradictions between company strategy and CSR engagement and differences regarding the treatment of stakeholder groups, may result in weaker moral legitimacy (Claasen & Roloff, 2012). The study also demonstrates that accountability and transparency as well as whether the company does its best in terms of social responsibility are highly significant for the evaluation of a company's legitimacy. Claasen and Roloff (2012) demonstrated that a link between legitimacy and accountability of companies exists, but it is more complex than the link assumed by commonly used practices of reputation and stakeholder management. They commented that "Overall, organisational legitimacy is a complex social construction that is more resistant to manipulations by the focal organisation than, for example, company reputation and brand image which appear to be more reactive to cognitive and pragmatic influences. Organisational legitimacy, in contrast, is evaluated in moral terms; it results from a rational evaluation of the available information (p.396)".

Paper two explores environmental performance evaluation of developed and emerging economies. The paper tried to find out the answer of the following two questions.

c. To what extent do companies in various industries measure Environmental Performance across various indicators developed by Xie and Hayase (2007)?

d. How does Environmental Performance Evaluation in Indian corporations differ from their Australian counterparts?

Environmental performance of companies in environmentally sensitive industries has been evaluated employing a hierarchical framework, which identifies the key factors of (i) Environmental Management Performance and (ii) Environmental Operational Performance, which characterise Corporate Environmental Performance (CEP) measurements. Indian managers consider that corporate environmental performance is more dependent on environmental management performance than environmental operational performance but Australian managers consider both to be equally important. It was also found that there is no single suitable model of environmental performance measurement. It is very difficult to select the right measure of evaluation for organisations in different industries operating in different geographical locations characterised by dissimilar levels of social and economic development. Also, input and output data to measure operational performance of the organisations was not available in both Australia and India. It

indicates that non-availability of operational performance data is the common problem in developed as well as emerging economies.

The results show that organisations incorporated various indicators and measurement items related to organisational system (environmental auditing, adoption of ISO 1400), Stakeholder relations (environmental disclosure, community contribution), operational countermeasures (countermeasures against global warming, countermeasures against environmental issues in process/product design) in the measures of performance to deliver favourable outcomes to stakeholder interests. These further indicate that organisations are keen to maintain a pragmatic and/or moral legitimacy for their organisations. From the legitimacy theory perspective, differences in organisational cultural attitudes and environmental regulations hamper the effective use of one single model within different contexts. Given differences in organisational culture and the regulatory environment among organisations from different countries, alternative measurement frameworks should be applied. The results of paper two provided support for the applicability of organisational perspective of legitimacy theory as an explanation for the effective use of a different performance evaluation model by the Australian and Indian organisations.

Companies that are proactive in environmental management may aim to improve their reputation and moderate the pressures from various stakeholders rather than to actually reduce their environmental activities (Jung et al., 2001). Legitimacy theory predicts that maintaining legitimacy requires policing and minimizing organizational miscues that result in negative communications to relevant audiences Mobus, 2005). Indian managerial consideration that corporate environmental performance is more dependent on environmental management performance reflects this legitimacy concept. O'Donovan, (2002) concludes that, conforming to societal expectations, presenting the organisation in a positive light and attempting to alter the values of relevant publics are likely managerial responses to legitimacy maintenance threats. Mobus 2005 state that Suchman's (1995) legitimacy theory framework suggests that CSR may be an example of corporate process of influencing the definition of environmental performance and a proactive tactic to gain and maintain legitimacy (Mobus, 2005).

Paper three explores the social and environmental reporting practice of developed and emerging economies by investigating the answer of the following two questions.

e. Is corporate social and environmental reporting related to certain company characteristics, such as industry and size?

f. Do differences exist regarding corporate social and environmental reporting between selected companies in Australia and India?

A significant different did exist in the extent of SER between selected companies in Australia and India. The results indicate that the extent of the reporting by the Australian sample is comparatively higher and information disclosed is better in quality than the Indian sample. This paper brings much needed evidence on SER from a developing country perspective and reveals a pattern of reporting that is similar with previous studies on South–East Asian countries but different for Australia. As stated by Branco and Rodrigues (2008), "A company less well known to the public, and involved in activities with a larger potential impact on the environment, would have less reason to justify its existence to society by means of community disclosures than a better known one" (p 695)". This appears to be the reason for organisations in the Forestry and Paper, Industrial Engineering, Chemicals, and Mining industries: a larger proportion of them reporting less information related to community involvement.

The paper provide evidence on the relevance (and dynamics) of the legitimacy perspective in developing countries. The article also incorporated Haniffa and Cooke's (2005, p. 394) view that legitimacy needs to be placed in its national context rather than merely take for granted the so-called Anglo-Saxon norms and notions of legitimacy. Suchman describes institutional and strategic aspects of legitimacy theory as two sides of the same coin. He describes the institutional viewpoint as one of society looking in and imposing conditions for legitimacy, and from a strategic perspective managers working to secure legitimacy (Suchman, 1995, p. 577). Generally, limited support for legitimacy theory has been provided by the Indian results of this study. The extent of Indian SER is low. Consequently this low level of SER does not replicate a serious effort by organisations to appear legitimate in society via annual report disclosures. On the other hand, the nature of reporting suggests some concerns that organisations wish to project an image of being socially and environmentally responsible. Thus, to clarify SER within Indian organisations, there is

some support for the applicability of legitimacy theory. From a legitimacy theory perspective, if management of an organisation considers that particular information is demanded by the communities they will disclose information willingly (De Villiers & Van Staden, 2006). Therefore, an organisation will supply social and environmental information in such a way that is consistent with societal expectations in a particular country.

The papers findings confirm the influence of size, selected industry membership and profitability in validating the legitimacy perspective. It appears that larger companies in both countries still give more weight to social reporting as legitimating mechanisms compared to environmental reporting. Only Chemical, Forestry and Paper industries are associated with higher reporting although all other industries (Mining, Industrial Engineering and Industrial Transport) tested are perceived as socially and environmentally sensitive. This research provides contributions to the theory of legitimacy in two ways. First, whilst many prior studies have examined industry effects by comparing disclosures among diverse industries, this study examined the effect within an industry group considered as socially sensitive. The finding of differences in reporting levels between companies with different profile levels is arguably an important contribution to legitimacy theory. This finding means that there are not only industry effects explained by legitimacy theory, but there can also be large variations even within an industry. In addition, the level of size of a company can also be an important explanatory factor for legitimacy theory.

The Indian result reflects no relationship between the extent of SER and their profitability. The absence of a relationship can thus be viewed as consistent with legitimacy theory since 'functional' wealth- maximising outcomes cannot be expected from the increased provision of SER (Tolbert and Zucker 1983, p. 26). The results of the third paper provided full support for the applicability of legitimacy theory as an explanation for the decision to report social and environmental information of Australian organisations. However Indian organisations provided limited support for the applicability of legitimacy theory as an explanation. The nature of Indian SER may be viewed as a public relations tool, used to improve the reputation and image of the organisation.

5.3.1 Overall Conclusion

Positive attitudes towards social and environmental accountability will likely lead managers to include social and environmental issues in their strategic business decisions, policy formation and on performance measurement. Industries with poor performance disclose more (Chapple et al., 2011). There is the strongest link between poor performance and better reporting. The extent of SER by Indian organisations lags behind that found in Australian organisations. This indicates that the positive attitude and strong support for SEA by Indian managers was not reflected in their organisational policy and social and environmental reporting practice. These findings are supported in research by Kuasirikun (2005), who found that although Thai managers were concerned about the protection of the environment, that concern was not reflected in voluntary environmental disclosures. The author also commented that Thai accounting managers did not show much enthusiasm towards turning their attitudes into action. The reasons could be diverse. It could be due to cultural background, differing degrees of pressure from stakeholders, organisational pressure to satisfy only one stakeholder group or simply for the voluntary nature of social and environmental reporting. Australian result show positive attitude towards social and environmental accountability and good reporting but mediocre performance measurement. The result indicates that the managers were unable to include their attitudes into strategic business decisions and policy formation. Another reason could be measurement model. The model used was unable to measure the performance adequately as there is no single suitable model of environmental performance measurement and it is very difficult to select the right measure of evaluation in different countries characterised by unlike social and economic condition.

Voluntary reporting is one means of discharging organisational responsibility on environmental performance. "In the absence of a clear cultural definition of environmental performance and with few consequential easures of outcomes, voluntary environmental reporting may be partially understood as efforts to cultivate procedural moral legitimacy. By producing voluntary reports that communicate positive organizational efforts, managers both contribute to culturally defining "sound practices", and cultivate moral legitimacy by creating accounts of good-faith efforts to be socially responsible in the ensuing cultural space of environmental performance" (Mobus, 2005, p. 499).

The study depicted a significant difference in attitude, performance and reporting of social and environmental issues among Australian and Indian managers. Differences in attitudes between emerging and developed economies could be due to differences in the level of socio-economic (Xiao et al., 2005) and technological development (Williams & Pei, 1999). The argument proposed by Xiao et al. (2005), that the extent of CSR reporting is influenced by a country's stage of social and economic development is valid. The level of economic and social development in Australia is higher than in emerging Asian countries, particularly India. These differences might influence stakeholder's needs in each country. People in Australia perceive social and environmental issues as equally important as economic issues. In contrast, societies in emerging economies such as India may prefer to prioritise economic issues over environmental and social matters given the struggle to fulfil basic health and welfare needs. As a result, this influences managerial attitudes within an organisation, which in turn affects the extent of CSR information in organisational reports. The results confirmed this by showing different notions of social and environmental accountability by Australian and Indian managers in paper one and the different extent of SER in paper three.

This study offers inadequate support for the applicability of legitimacy theory as a justification for the reporting of social and environmental information in India. Results suggest only some support that organisations are taking action to manage the apparent significance of stakeholders' needs. For instance, the higher levels of SER were observed within the annual report when community concerns and apparent significance of shareholders' information needs were greater.

5.4   Implications of the Findings

A number of practical implications both on the company and policy level can be derived from the study. From a company perspective, for Indian and Anglo-Saxon Western companies interested in social involvements in India, they must take into account how national institutional systems and cultural traditions influence local CSR patterns. If CSR initiatives do not match the local understanding of legitimacy, can lead to failure and therefore result in a misallocation of resources. Companies who are pursuing a proactive approach to CSR can face situations in which misallocation of (CSR) resources occurs through a different institutionalisation in the home and host country (Barkemeyer, 2007). Corporate motivation within emerging economies could be

somewhat different from that in developed economies. Rahaman et al. (2004) indicated that, unlike consumer pressure or pressure from NGOs or civil society groups, the driving force behind organisational CSR in emerging economies, which to a large extent depend on foreign loans and aid, could be external pressure from 'powerful' international lending institutions and parent company policy as well as pressure from international buyers (Belal & Owen, 2007; Islam & Deegan, 2008). In order to gain a better understanding of the actual impact and local perceptions of the initiative, more decentralised CSR structures and feedback loops (Barkemeyer, 2007) can be vital for a CSR initiative.

The study argues for greater SEA researcher engagement with SEA practice, particularly in emerging economies. The study illustrates the gap and challenges that remain in improving the extent of SER from an emerging economy perspective. It also documented changes in managerial attitudes toward SEA in both an emerging and developed economy perspective. This study is important in gaining an understanding of current and potentially future Indian managerial attitudes toward S&E accountability, performance and reporting. Given India's ongoing economic growth and development, it is critical that managers both understand the importance of CSR and enact policies and practices to reduce their organisations overall negative social and environmental impact. Economic growth is placing significant pressure on India's social infrastructure and environmental resources. As India continues to develop and interact in the global market, it is essential to understand Indian managerial attitudes on CSR, the CSR practices they put into place, and the extent of CSR information that they formally report, in order to gauge the extent to which social and environmental problems can be identified and reduced, and overall improvements made. Future studies may explore the reasons why the strong positive attitudes of Indian managers are not reflected in organisational policy and reporting practices. Perhaps there is no pressure to do so or there are resource constraints. Another reason could be that it is primarily public relations driven.

From a policy perspective, it is prudent to set measures in place that make sure a better integration and acknowledgement of various stakeholders. Barkemeyer (2007) suggested that "feedback loops that strengthen the interlinkages between home and host country publics can reduce both the misallocation of resources of proactive companies and the tendency of reactive companies to employ CSR measures as a mere public relations tool" (p.16). The underlying mechanisms of a

predominantly voluntary CSR agenda within emerging economies could be somewhat different from that in developed economies so do not apply to a vast number of companies globally. Especially in the absence of structural framework conditions such as independent media or a conscious consumer base, it is unlikely that a critical mass can be reached that creates new, more sustainable behavioural norms, as e.g. envisioned by the UN Global Compact (Kell, 2005, p. 72). Many of the Indian companies noted insufficient incentives from the regulatory framework, business climate, and consumer group. Thus, how to integrate various institutional elements into shaping the emerging CSR-related institutional system deserves consideration for policy makers in the emerging countries. Yin and Zhang, (2012) suggest that encouraging a conducive institutional environment, providing training and financial incentives to companies that take the lead in moving CSR forward, and punishing irresponsible behaviour, as well as shaping consumer preferences in support of responsible business, are all crucial in pushing forward CSR in emerging economies (Yin & Zhang, 2012, p. 14).

Indian managers strongly supported mandatory CSR reporting (factor loading .65). This finding also supports previous studies (CDCAC, 2002; Frost & English, 2002; Fukukawa, et al., 2007; Kuasirikun, 2005) that reported strong support for mandatory CSR reporting. This growing support for mandatory social and environmental reporting indicates that policy makers and regulatory authorities need to give serious consideration to mandatory CSR reporting. The few developed economies which do have mandatory CSR reporting, such as France, the Netherlands and the UK have made requirements and also give incentives to organisations to include non-financial reporting as a part of regular disclosure (KPMG, 2005). Such pressure is yet to occur with respect to CSR reporting in emerging economies. Emerging economies may consider the proposition of mandatory CSR reporting, as unlike consumer pressure or pressure from NGOs or civil society groups, the driving force behind CSR in organisations in emerging economies could be the external pressure from 'powerful' international lending institutions (Rahaman et al., 2004), or 'outside forces' via parent company edicts and pressure from international buyers (Belal & Owen, 2007; Islam & Deegan, 2008).

5.5   Limitations of the Study

Even though efforts were made to maintain rigour in the undertaking of the research, there are a number of limitations associated with the study.

The major limitation of the first paper is that the questions used in the survey do not represent the entire framework on which attitudes toward the social and environment accountabilities are formed. Furthermore, culture was not explicitly explored as a possible factor in the study. An individual's cultural context could shape social and environmental beliefs and attitudes. Attitudes towards social and environmental issues can differ between countries, and development factors and nation state traditions may play an important role in shaping attitudes. Whilst culture remains a valid line of enquiry to explore motivations for attitudes, performance or reporting; culture is outside the scope of the study, and requires different theoretical paradigms on which to base an analysis of the results. The first and second paper utilised a questionnaire, as a basis for generating insights into attitudes and performance. However these insights could be further built upon through subsequent in-depth interviews. Further, questionnaires may suffer from socially-desirable response. To test the survey instrument on its content, wording and language proficiency, question bias and question sequencing; a pre-testing of the instrument was undertaken. To avoid potential misinterpretation of the terms, a list of definitions and explanation of special terms used in each section of the survey was provided. Any inherent survey response bias was minimised as the survey was conducted by a person external to their organisation, following the example of Kuasirikun (2005). Different techniques such as; (i) not using "loaded or "leading" questions, (ii) avoiding double-barrelled questions and (iii) avoiding double negatives (Brace, 2008) available to prevent social desirability response bias in the paper-based survey questionnaire were incorporated in the survey development process.

Due to the non-availability of relevant data on input and output factors, an estimated value on the Input and Output data is introduced in the second paper. The second paper is limited by the use of imputation in the analysis. The main limitation of this paper is the use of estimated values on the input and output indicators of OPIs. Another limitation of the second paper is the use of the same

performance model for both countries. There is no single suitable model of environmental performance measurement. Hence, the findings need to be interpreted with caution.

One limitation of the third paper is that it used selected indicators from GRI, 2002 to construct the specific disclosure index (DI), which serve as dependent variables of the regression analysis. Use of the 2006 GRI core and additional indicators (seventy five social and environmental) could have yielded different results. Therefore, the results need to be carefully interpreted. Another limitation of the paper is that data was only collected for 2006-2007 and only from the annual report. Data from various sources and over a period of time could have increased the depth and robustness of the results. Other legitimacy related variables such as, stakeholder pressure and incidents etc. could be used to enrich the study's contribution, but in India, there is very low stakeholder pressure on companies. Again, the media focus is toward political incidents, as opposed to social and environmental issues. Recent studies on developing economy (Branco & Rodrigues, 2008; Mahadeo, et al., 2011) also used legitimacy based variables like size, industry, profitability, and leverage. As the study is a comparative one, such variables have not been considered for this study, but remain an area for future research.

5.6   Areas for Future Research

Little research has been undertaken so far on the association between culture and social and environmental attitudes. Future research could include social aspects and undertake further empirical research among various developed and emerging economies, and explore in more detail the underlying cultural contexts that shape social and environmental beliefs and attitudes. Further experimental study across various geographical positions external of what has already been examined could be undertaken. Research may investigate the fundamental cultural perspectives that form social and environmental values and attitudes in further detail. Future research may perhaps also examine the coverage to which the organisations essentially execute their environmental strategies, rather than the attitudes managers demonstrate toward them.

The second paper is a constructive move to address the difficulty of non-availability of Input and Output data of OPIs to measure performance in developed as well as emerging economies. As there is no single suitable model and it is very difficult to select the right measure of evaluation and

collect the required data, it will be wise to use different measures and different methods for environmental performance evaluation in an emerging economy like India. Given that studies on environmental performance is in its infancy, more studies using actual performance criteria are expected in the future.

The disclosure index created using GRI indicators in the third paper can be exploited by preparers in measuring the degree of organisational compliance. The index can be updated by accumulating new guidelines and would help researchers who seek to undertake future conformity analysis. Future research could include some other legitimacy related variables in the model such as, sustainability committee, association membership or substitute some of the used one by a new one more linked to emerging economies. The SER practices of listed companies are less subject to general contextual factors than those of unlisted companies. An interesting possible extension of this study would be to use a sample of companies which are not listed. Finally, the use of a larger sample would be an important way of adding new insights to the analysis of SER by emerging economies.

Future research could also undertake further empirical work across emerging economies and explore in further detail the underlying cultural contexts that shape social and environmental attitudes. Research might also study the process and degree to which the organisations really measure their performance and implement their environmental policies to discharge their perceived social and environmental accountability.

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Appendices

Appendix A: Evidence of Ethics Approval for Human Subjects

MACQUARIE
UNIVERSITY~SYDNEY

04 December 2008

Mr Asit Bhattacharyya
School of Business and Management
University of Newcastle
Callaghan
NSW 2308

Reference: HE28NOV2008-D06194

Dear Mr Bhattacharyya

FINAL APPROVAL

Title of project: "Corporate Social Responsibility (CSR): Attitudes, Performance Measurement and Disclosure-A Cross Country Comparison"

Interim approval of the above application was granted by the Executive of the Ethics Review Committee (Human Research) on 29 October 2008. This interim approval was reviewed by the full Committee at its meeting on 28 November 2008 and was ratified.

Please note the following standard requirements of approval:
1. Approval will be for a period of twelve (12) months. At the end of this period, if the project has been completed, abandoned, discontinued or not commenced for any reason, you are required to submit a Final Report on the project. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. The Final Report is available at: http://www.research.mq.edu.au/researchers/ethics/human_ethics/forms
2. However, at the end of the 12 month period if the project is still current you should instead submit an application for renewal of the approval if the project has run for less than five (5) years. This form is available at http://www.research.mq.edu.au/researchers/ethics/human_ethics/forms If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report (see Point 1 above) and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).
3. Please remember the Committee must be notified of any alteration to the project.
4. You must notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that might affect continued ethical acceptability of the project.
5. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University http://www.research.mq.edu.au/researchers/ethics/human_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project **it is your responsibility** to provide Macquarie University's Research Grants Officer with a copy of this letter as soon as possible. The Research Grants Officer will not inform external funding agencies that you have final approval for your project and funds will not be released until the Research Grants Officer has received a copy of this final approval letter.

ETHICS REVIEW COMMITTEE (HUMAN RESEARCH)
LEVEL 3, RESEARCH HUB, BUILDING C5C
MACQUARIE UNIVERSITY
NSW, 2109 AUSTRALIA
Ethics Secretariat: Ph: (02) 9850 6848   Fax: (02) 9850 4465 E-mail: ethics.secretariat@vc.mq.edu.au
http://www.research.mq.edu.au/researchers/ethics/human_ethics
1

Yours sincerely

Dr Margaret Stuart
Director of Research Ethics
Chair, Ethics Review Committee (Human Research)

Cc: Associate Professor Lorne Cummings, Division of Economic and Financial Studies

ETHICS REVIEW COMMITTEE (HUMAN RESEARCH)
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QUESTIONNAIRE SOCIAL AND ENVIRONMENTAL ACCOUNTABILITY

(Please complete the questionnaire in pen. Please place a tick ☑ in the appropriate box.)

Section A: Personal and Organisational Information

1.   **What is your gender?**
   - ❑ Male
   - ❑ Female

2.   **In what age group are you?**
   - ❑ Under 25
   - ❑ 25-34 years
   - ❑ 35-44 years
   - ❑ 45-54 years
   - ❑ 55+ years

3.   **What is your country of birth?**
   - ❑ Australia
   - ❑ India
   - ❑ Other (please specify) _____

4.   **What is your country of residence?**
   - ❑ Australia
   - ❑ India
   - ❑ Other (please specify) _____

5.   **How long have you currently resided in the country of your residence?**
   - ❑ Less than 10 years
   - ❑ Between 10 and 20 years
   - ❑ Over 20 years

6.   **What is your cultural background?**
   - ❑ Anglo Celtic
   - ❑ Indian
   - ❑ Continental European
   - ❑ Chinese
   - ❑ Other (please specify) _____

7. What formal level of education have you completed?
   - ❑ Non-University post-secondary (e.g. Diploma)
   - ❑ Bachelor's degree
   - ❑ Master's degree (e.g MBA)
   - ❑ Other (please specify) _____

8. What is your Occupation?
   - ❑ Director
   - ❑ Manager
   - ❑ Chief Executive Officer
   - ❑ Chief Accountant
   - ❑ Other (Please specify) _____

9. Is your organisation/company part of a consolidated group?
   - ❑ Yes
   - ❑ No

Section B - Managerial attitudes toward <u>social</u> accountability

The following survey contains a number of statements regarding contemporary <u>social</u> environmental issues affecting organisations. Please indicate whether you as an individual agree/disagree with the following statements, by placing a tick on a response from 1 (Strongly Disagree) to 5 (Strongly Agree).

<u>Explanation of terms used</u>

Social rules: Generally accepted behaviour, unwritten customs and conventions generally adhered to in the workplace (e.g. greeting someone via the shaking of the hand).

Accountability: Is often used synonymously with such concepts as answerability, enforcement, responsibility, liability and other terms associated with the expectation of account-giving. In leadership roles, accountability is the acknowledgment and assumption of responsibility for actions, decisions, and policies including the administration, governance and implementation within the scope of the role or employment position and encompassing the obligation to report explain and be answerable for resulting consequences.

Social issues: Are matters which directly or indirectly affect many or all members of a society and are considered to be problems, controversies related to moral values or both (e.g. pollution, injustice).

Sustainability report: Is the voluntary public presentation of information about an organisation's economic, social and –environmental performance over a specified period, usually a financial year. A sustainability report can be financial in nature in that it may seek to value social and environmental criteria.

Social code of conduct: Generally accepted standards of behaviour and attitude that are expected of organisational staff in the performance of their duties.

Cultural values: Hofstede (1980) defined culture as "the collective programming of the mind which distinguishes the member of one human group from another" and values as 'a broad tendency to prefer certain states of affairs over others'.

Statement	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. The social rules of a country influence individual attitudes toward accountability.	1	2	3	4	5
2. The cultural values of a country directly influence the development of an organisation's social reporting system.	1	2	3	4	5
3. The needs of society overall are just as important, if not more important in managerial decision making, as the specific needs of the shareholder.	1	2	3	4	5
4. Managers in this country are more likely to practice higher ethical standards than managers overseas.	1	2	3	4	5
5. The primary area of social concern for organisations is community involvement.	1	2	3	4	5
6. Educating employees about social rules is the organisation's responsibility.	1	2	3	4	5
7. Multinational organisations apply a higher standard of social accountability in their home (domiciled) country.	1	2	3	4	5
8. Social codes of conduct encourage an organisation to be more accountable.	1	2	3	4	5
9. Organisations must discharge their social obligations to survive.	1	2	3	4	5
10. A sustainability report will improve the image of an organisation.	1	2	3	4	5
11. A sustainability report will improve the competitiveness of an organisation.	1	2	3	4	5
12. Resource constraints are the main obstacle for organisation's wishing to discharge their social accountability.	1	2	3	4	5
13. Informing employees about their rights is the responsibility of top management.	1	2	3	4	5
14. Corporate social responsibility (CSR) reporting should be mandatory.	1	2	3	4	5
15. The full range of organisational employee benefits should be made available to all employees.	1	2	3	4	5
16. An organisation should make its policies on customer health and safety publicly available.	1	2	3	4	5
17. An organisation should make its policies on corruption prevention publicly available.	1	2	3	4	5
18. An organisation should make its policies on the extent of local area employment publicly available.	1	2	3	4	5

Section C: Managerial attitudes toward <u>environmental</u> accountability

The following survey contains a number of statements regarding contemporary <u>environmental</u> issues affecting organisations. Please indicate whether you as an individual agree/disagree with the following statements, by placing a tick on a response from 1 (Strongly Disagree) to 5 (Strongly Agree).

<u>Explanation of terms used</u>

Stakeholder: A person, group, organisation, or system who affects or can be affected by an organisation's actions. e.g. customer, employee.

Greenhouse gases: Carbon dioxide (CO_2, Methane (CH4), Nitrous Oxide (N_2O), Hydro fluorocarbons (HFC), Per fluorocarbons (PFC), Sulphur hexafluoride (SF_6)

Statement	Strongly Disagree	Disagree	Neither Agree nor	Agree	Strongly Agree
1. The degree of pressure from stakeholders determines the level of environmental disclosure by an organisation.	1	2	3	4	5
2. Trade sanctions should be imposed on countries not complying with international environmental agreements.	1	2	3	4	5
3. Corporations in the manufacturing industry should acquire ISO14001 - the international standard for environmental management systems.	1	2	3	4	5
4. A register to record the amount of greenhouse gas emissions should be maintained by corporations in the manufacturing industry.	1	2	3	4	5
5. Managers should consult with various stakeholder groups when making environmental policy decisions.	1	2	3	4	5
6. Local organisations should be subject to the same degree of environmental scrutiny as organisations from foreign countries (i.e. multinationals).	1	2	3	4	5
7. A stand alone environmental report (separate from an annual report) should be published by organisations operating in the manufacturing industry	1	2	3	4	5
8. An organisations environmental performance should be subject to independent verification by a government authority.	1	2	3	4	5
9. Individual environmental behaviour is influenced by local culture.	1	2	3	4	5

Statement	Strongly Disagree	Disagree	Neither Agree nor	Agree	Strongly Agree
10. Most organisations do not report environmental information because they believe their operations do not have significant environmental impact.	1	2	3	4	5
11. Most organisations do not report environmental information because they do not have the resources to do so.	1	2	3	4	5
12. Reporting on its environmental activities can add value to an organisation and help it reduce costs in the short term (< 3 yrs).	1	2	3	4	5
13. Reporting on its environmental activities can add value to an organisation and help it reduce costs in the long term (> 3 yrs).	1	2	3	4	5
14. Environmental taxes can be an important way of achieving reductions in greenhouse gases.	1	2	3	4	5
15. An increase in government regulations/oversight will encourage a more balanced approach to environmental reporting.	1	2	3	4	5
16. Weak enforcement by authorities causes poor organisational compliance with environmental regulations.	1	2	3	4	5

Section D – <u>Environmental Performance</u>

1. **Has your organisation established targets/goals for helping to protect the environment? (Please circle one answer)**

    A. Both quantitative and qualitative targets/goals have been established.
    B. Only qualitative targets/goals have been established.
    C. Specific quantitative (i.e. reduction in greenhouse gasses in terms of kilotons) targets/goals have been established.
    D. Under consideration.
    E. No targets/goals are considered at the moment.
    F. No plans for setting up targets/goals at any time in the future.

2. **Has your organisation or consolidated group been externally accredited with the international environmental standard ISO14001? (Please circle one answer)**

    A. The organisation and/or the entire consolidated group have been accredited with ISO 14001.
    B. The organisation and/or some group subsidiaries have been accredited with ISO 14001. It is under consideration for the entire consolidated group.
    C. We are setting up (or have) our own environmental management system separate from ISO 14001.
    D. ISO 14001 accreditation under consideration.
    E. No plan for ISO 14001 accreditation.
    F. Don't know.

    If you have circled A, B or C in Question 2, when did your organisation or group introduce ISO14000 or its own environment management system?

    (   ) Year   (   ) Month

3. **Has your organisation set up an environmental committee which examines how its operations affect the natural environment? (Please circle one answer)**

    A. Already set up.
    B. Setting up.
    C. Under consideration.
    D. Planning to set up by year 20(   ).
    E. No plan to set up.

4. **If you have circled A in Question 3, who is (i) the head of, or (ii) responsible for, this committee? (Please circle one answer)**

    A. Chief executive officer.
    B. Chief accountant.
    C. An environmental engineer.
    D. A director.
    E. A senior manager.

F. Other (   ).

5.   **Has your organisation or consolidated group established an environmental accounting system which classifies, recognizes, measures and reports on environmental issues within the financial statements? (Please circle one answer)**

        A. Almost our entire consolidated group has established a system.
        B. Our organisation and some of the group subsidiaries have established a system.
        C. Only our organisation has established a system. It <u>is</u> under consideration for the consolidated group.
        D. Only our organisation has established a system. It <u>is not</u> under consideration for the consolidated group.
        E. Almost all other subsidiaries have established a system. It is under consideration for our organisation.
        F. No plan for the establishment of a system.

6.   **Does your organisation or consolidated group have an environmental inspection officer specifically tasked with examining the environmental activities and risk assessment of your company? (Please circle one answer)**

        A. Yes the consolidated group only has an officer.
        B. Our organisation and some of group subsidiaries each have an officer.
        C. Only our organisation has an officer. An officer <u>is</u> under consideration for the consolidated group.
        D. Only our organisation has an officer. An officer <u>is not</u> under consideration for the consolidated group.
        E. Almost all other subsidiaries have an officer. An officer is under consideration with our organisation.
        F. No plan for employing an officer in our organisation.

7.   **Does your organisation educate employees about environmental safeguards and risk reduction? (Please circle one answer)**

        A. Yes – all employees on a regular (yearly) basis.
        B. Yes - some employees on a regular (yearly) basis.
        C. Yes – all employees at the time of initial employment, but after that not on a regular basis
        D. Educates all only when an issue/event arises.
        E. Education under consideration.
        F. No plan for education.

8. **Does your organisation or consolidated group release to external stakeholders, information on environmental data that relates to protection of the environment? (Please circle one answer)**

   A. Almost the entire consolidated group releases this information.
   B. Our organisation and some of the group subsidiaries release this information.
   C. Only our organisation releases this information, and it is under consideration for the consolidated group.
   D. Only our organisation releases this information; not the consolidated group.
   E. Under consideration by our organisation.
   F. No plan to release this information by our organisation.

9. **If you have circled A, B, C or D in Question 8, what environmental information does your organisation or consolidated group release? (Please circle as many as you wish)**

   A. Non–technical data (e.g. environmental policy, performance plans for the environment, accounting for the environment etc).
   B. Technical data (e.g. energy input, quantity and type of natural resources used, quantity of carbon dioxide or greenhouse gases emitted, the amount of waste produced, the amount of waste recycled or reused etc).
   C. A combination of both technical and non-technical data.

10. **If you have circled A, B, C or D in Question 8, how does your organisation release this environmental information? (Please circle as many as you wish)**

    A. Through a stand-alone environmental (or sustainability) report.
    B. Through the annual report or regular business report.
    C. Through the internet via organisational email or website.
    D. Through another method – please specify (   ).

11. **What kind of volunteer work does your organisation undertake in your local community to protect the environment? (Please circle as many as you wish)**

    A. No volunteer activities.
    B. Provide support for collecting recyclable materials.
    C. Conduct tree planting activities <u>outside</u> of your company premises.
    D. Plant trees <u>in and around</u> your company premises.
    E. Conduct or participate in environmental clean-up activities.
    F. Provide a grant or donation to local non-government organisations to protect the environment.
    G. Other environmental related work – please specify ( ).

12. Specify how often your organisation uses or conducts each of the following environmental activities. (Please tick one box on each line). If your organisation conducts an environmental activity which is not listed in the following questions, please describe it in the section Others'.

Activities	Never	Rarely	Not Applicable	Occasionally	Regularly
a. How often does your organisation use renewable energy such as solar power?					
b. How often does your organisation use renewable energy such as wind power?					
c. How often does your organisation use co-generation initiatives? e.g. use of heat engine or power facilities to simultaneously generate electricity or to cool water.					
d. How often does your organisation use energy saving device/s at the workplace, factory or office? e.g. energy efficient light bulbs, showerheads or water taps.					
e. How often does your organisation use environmentally friendly motor vehicles? e.g hybrid (dual power source), compressed natural gas, or liquefied petroleum gas (LPG) cars.					
f. How often does your organisation change production processes in order to reduce harmful effects on the environment? e.g. chemicals used in products or the use of plantation timber as opposed to old growth forests.					
g. How often does your organisation market the environment benefits of products? e.g. energy saving initiatives on light globes or dishwashers.					
h. How often does your organisation increase the use of recycling during the production process? e.g. reuse waste water.					
i. How often does your organisation lengthen the life cycle of the product in order to reduce overall energy consumption? e.g. light bulbs that last 5 times longer.					

Activities	Never	Rarely	Not Applicable	Occasi onally	Regularly
j. How often does your organisation reduce the use of packing or wrapping materials?					
k. How often does your organisation check the environmental management system of a company/supplier from which your company purchases materials or equipment? e.g. ISO 14000 certification.					
l. How often does your organisation use a system for take back and recycling of your products at the end of their life? e.g. recycling computer hardware and other e-waste.					
m. How often does your organisation measure or estimate the output of harmful chemicals discharged by means of land, sea or air?					
n. How often does your organisation prepare & use risk management and occupational health and safety (OHS) manuals for emergency situations?					
o. How often does your organisation use training programs for environmental disaster management? e.g. airborne, water or land based spillages or leaks.					
p. How often does your organisation check hazard management systems? e.g. inspection of tanks, pipes or other equipment that contain harmful materials.					
q. Others - please specify					

13. **Does your organisation record the energy usage (fuel and electricity) of its operations? (Please circle one answer)**

   A. Our organisation and/or some of the group subsidiaries record usage.
   B. Only our organisation records usage. It <u>is</u> under consideration for the consolidated group.
   C. Only our organisation records usage. It <u>is not</u> under consideration for the consolidated group.
   D. Under consideration with our organisation.
   E. No plan for recording usage at all.
   F. Don't know.

   (If your organisation does record the energy usage of its operations, please provide this data below. If your organisation does not use the following energy types, please write down '0'. If data is not available, please write 'NA').

Energy types		Usage in 2006	Usage in 2007
Fuel	Oil – by kilolitre		
	Gas- by cubic meter		
Electric power - by kilowatt hour			

14. **Does your organisation record the amount of resource (e.g. water, paper) usage for its operations? (Please circle one answer)**

   A. Our organisation and/or some of the group subsidiaries record usage.
   B. Only our organisation records usage. It <u>is</u> under consideration for the consolidated group.
   C. Only our organisation records usage. It <u>is not</u> under consideration for the consolidated group.
   D. Under consideration with our organisation.
   E. No plan for recording usage at all.
   F. Don't know.

   (If your organisation does record the resource usage of its operations, please write down the amount of natural resources your organisation has used. If your organisation does not use the following materials, please write down '0'. If the number is not available, please write 'NA').

Resources	Types	Usage in 2005	Usage in 2006
Water – by cubic meter	Industrial/Mains water. e.g. city supply.		
	Ground/Bore water. e.g. own source.		
Paper – by tonnage	Total Tonnage		
	% being recycled paper		

15. **Does your organisation record the amount of industrial waste generated from its operations? (Please circle one answer) (Note:** Industrial waste [toxic and chemical] is <u>a type of waste</u> produced through <u>industrial activity</u>. e.g. <u>factories,</u> <u>mills</u> and <u>mines</u>.)

    A.   Our organisation and some of the group subsidiaries record the amount of industrial waste generated.

    B.   Only our organisation records the amount of industrial waste generated. It <u>is</u> under consideration for the consolidated group.

    C.   Only our organisation records the amount of industrial waste generated. It <u>is not</u> under consideration for the consolidated group.

    D.   Under consideration with our organisation.

    E.   No plan for recording amount of industrial waste generated at all.

    F.   Don't know.

(If your organisation does record the industrial waste generated from its operations, please write down the amount of industrial waste generated. If your organisation does not have the following waste, please write down '0'. If the number is not available, please write 'NA').

Category	Usage in 2005	Usage in 2006
Total amount of waste – tonnage		
Amount of waste used for recycling - tonnage		

16. **Does your organisation record the amount of Carbon Dioxide (CO_2) and other Greenhouse Gases [Methane (CH_4): Nitrous Oxide (N_2O): Hydro fluorocarbons (HFC): Perfluorocarbon (PFC): Sulfur hexafluoride (SF_6) emitted by its operations? (Please circle one answer)**

    A.   Our organisation and/or some of the group subsidiaries record Carbon Dioxide and other greenhouse gas emissions.

    B.   Only our organisation records Carbon Dioxide and other greenhouse gas emissions. It <u>is</u> under consideration for the consolidated group.

    C.   Only our organisation records Carbon Dioxide and other greenhouse gas emissions. It <u>is not</u> under consideration for the consolidated group.

    D.   Under consideration with our organisation.

    E.   No plan for recording Carbon Dioxide and other greenhouse gas emissions at all.

    F.   Don't know.

(If your organisation does record the Carbon Dioxide (CO_2) and other Greenhouse Gases emitted by its operations, please write down this amount. If there are no emissions, please write down '0'. If the number is not available, please write 'NA').

Name of gas	Emitted in 2005	Emitted in 2006
Carbon Dioxide (CO$_2$) - by tonnage		
Other Greenhouse Gases (CH$_{44}$, N$_2$O, HFC, PFC, SF$_6$) - by CO$_2$ equivalent tonnage		

17. Does your organisation record the quantity of water and air pollutants discharged (as indicated below) by its operations, into the environment? (Please circle one answer)

    A.   Our organisation and some of the group subsidiaries record discharged pollutants.

    B.   Only our organisation records discharged pollutants. It <u>is</u> under consideration for the consolidated group.

    C.   Only our organisation records discharged pollutants. It <u>is not</u> under consideration for the consolidated group.

    D.   Under consideration with our organisation.

    E.   No plan for recording discharged pollutants at all.

    F.   Don't know.

(If your organisation does record the quantity water and air pollutants discharged by its operations, into the environment, please write down the amount of pollutant discharged. If your organisation does not discharge pollutant, please write down '0'. If the number is not available, please write down 'NA').

Substances		Discharged in 2005	Discharged in 2006
Water pollutant	COD (Chemica*l Oxygen Demand)* - by kilograms		
	BOD (***Biological Oxygen Demand***) - by kilograms		
Air pollutant	NO x (Nitrogen oxide) - by kilograms		
	SO x (Sulfur Oxides) - by kilograms		

Thank you very much for taking the time to complete this survey. Your assistance in providing this information is very much appreciated. If there is anything else you would like to disclose in relation to your knowledge and/or experience with corporate social responsibility, please do so in the space provided below.

Appendix – C

Research Method

1   Introduction

This appendix chapter outlines the various aspects of method used in the paper one and two of the study.   A survey based approach to collect quantitative data was used in this study.   A personal method, employing external professional service to approach respondents and then receive the paper-based survey from the respondents was employed in the study. Rationale for the choice of survey method is discussed in section 2. Section 3 provided the details of the Survey instrument development. Section 4 presented the analysis method. Two fold data analysis strategy was adopted for the papers. First a principal components analysis (section 4.1), then a confirmatory factor analysis model testing, using structural equation modeling techniques in AMOS 7 (section 4.2) was undertaken. Sample Size and Data Collection is discussed in section 5 and the final section discus about the rationale for the use of imputation method.

2   Rationale for the Choice of Survey Method

Survey methods are the preferred method for studies that aim at testing hypotheses and drawing conclusions about the population (Creswell, 2008). Frazer and Lawley (2000) stated that survey data can be collected via telephone questionnaire, mail questionnaire, internet or mall intercept methods. For research questions seeking to explore 'what', 'how' or 'why' (as opposed to enumerating 'how many' or 'how much'), qualitative research is the recommended strategy (Eisenhardt & Graebner, 2007). Since the research questions in this study explores (1) what are managerial attitudes towards social and environment accountability in Australia and India? (2) How do managerial attitudes towards social and environment accountability differ between these two countries? (3) To what extent do companies in various industries measure Environmental Performance across various indicators developed by Xie and Hayase (2007)? and (4) How does Environmental Performance Evaluation in Indian corporations differ from their Australian counterparts? it lends itself to a qualitative exploration. Similar to Bebbington et al. (1994), Kuasirikun (2005) and Fukukawa et al. (2007) the survey research method is used in this study. A paper-based questionnaire was used for the survey.

A survey is a research technique that gathers information from a sample of respondents using a questionnaire or interview technique (Zikmund, 2003). Versatility is the great strength of the survey. Survey facilitates collection of all types of information, intentions, opinions, attitudes and expectations by questioning others (Cooper and Schindler, 2003). Surveys are capable of collecting vast information and can be engaged to reach virtually any group of respondents like business employers, old-age pensioners, teenagers or business managers (Churchill, 1999). According to Deutskens, de Jong, Wetzels & de Ruyter (2006) the strength of survey research is that it allows a description of real world situations when compared to laboratory experiments. Thus, it is easier to make generalizations. Surveys allow greater relieve of collecting a large amount of data and are handy to study a large number of variables. Nancarrow, Pallister and Brace (2001) mentioned that surveys are also identified as a way of reducing potential social desirability in order to control response bias, a critical problem that can significantly compromise the validity of data collection. Zikmund (2003) argued that surveys can be conducted through self-administered methods, personal methods or computer assisted methods. Mail survey is the significant amongst these methods, which is used in business and social sciences research (Cavana, Sekaran & Delaltaye, 2001).

In a mail survey all respondents are able to receive their questionnaire at the same time reducing the interviewer's effect which can bias the interviewee's answers (Bryman, 2008). Further, mail surveys offer wider geographical coverage and hence wider coverage within a sample population. However, mail surveys do face some limitations, for example an accurate list of the population of interest is required to receive accurate data information. As individuals tend to respond to the questions asked in ways that they feel to be socially desirable, it has been argued by Arnold et al. (1985) that responses from respondents to questionnaires may be viewed as contaminated ('socially desirable responding'). Further, mail surveys have a tendency to receive lowest response rate (Bryman, 2008). Thus, personal or intercept methods were used in the study to avoid the low response rate involved in a mail survey, to approach and encourage respondents to participate in the study.

It was decided that a personal method will be used to approach the respondents after considering the opportunities and constraints during the survey research design stage. External professional service was used to distribute and obtain the completed survey from the respondents. This decision of using

personal method and employing external professional service to approach respondents and then receive the paper-based survey from the respondents was taken after considering various issues such as (1) the response rate implicated in the mail surveys (2) the anticipated response time involved in getting back completed surveys, (3) the ease and relieve in filling out an internet based survey, (6) the capability to reach and improve the response rate by personally approaching senior managers and appealing their interest in the survey, (7) the understanding of allowing senior managers convenience and sufficient time to fill out the survey without any social bias and (8) the ability to reach a wider and representative sample of senior managers.

3   Survey Instrument Development

Development and pre-testing of the survey is reported in this section. Recognising the purpose of the survey and the nature of the answers is important in the construction of an effective questionnaire (De Vaus, 2002). Zikmund (2003) recommend that relevance and accuracy should be the primary two key criteria in the researcher's mind when designing a questionnaire. Bourque, Fink and Fielder (2002) propose that surveys should commence with the easiest questions such as demographic background and progress to those that may require more thought. This recommendation was adopted in the survey development. A copy of the questionnaire is provided in Appendix B, p: 199.

The questionnaire drew on different issues arising from social and environmental accounting literature to ascertain managerial attitudes and evaluate performance measurement towards these issues. Accordingly, the questionnaire was structured and divided into four sections. Section A- Personal and Organisational Information, section B - Managerial attitudes toward social accountability, section C- Managerial attitudes toward environmental accountability and Section D – Environmental Performance.

The demographic section of the questionnaire (See Table 2.2) included questions relating to age, gender, education level and managerial position. The social accountability section was developed using 18 items (See Table 3a.). Five items (B1, B2, B6, B7 and B9) measured respondent's attitude towards social rules, three items (B4, B13 and B17) measured respondent's attitude towards employees and their rights, while three items (B8, B10 and B11) measured respondent's attitude

towards corporate social accountability and reporting. Another four items (B3, B5, B15 and B18) measured respondent's attitude towards their community and towards corruption prevention. The remainder measured respondent's attitude towards customer health and safety and resource constraints.

The environmental accountability section (See Table 2.3b) consisted of 16 questions. Five items (C9, C10, C11, C12 and C13) measured respondent's attitude towards different aspects of environmental reporting; two (C3 and C16) measured their attitude towards trade sanctions and environmental taxes. Respondent's attitude towards increased government regulations, independent verification, compliances and enforcement of environmental regulations were measured by four items (C4, C8, C14, and C15), whilst another two items (C1 and C2) measured attitudes towards local culture and values. The other items measured attitudes towards an environmental management system, recording of greenhouse gas emissions and policy decisions. Interval response scales of 1–5 (Likert Scale e.g., 1 strongly disagree to 5 strongly agree) were used.

Environmental Performance consists of Management Performance Indicators and Operational Performance Indicators. Similar to Xie and Hayase (2007) Management Performance Indicators (MPIs) was further subdivided into four groups: (1) organisational system (OS) (Question no 2, 3, 4, 5 & 6); (2) stakeholder relations (SR) (Question no 7, 8, 9, 10 & 11); (3) operational counter measurement (OCM) (Question no 12); and (4) environmental tracking (ET) (Question no 13). Each group consists of various measurement items. Operational Performance Indicators (OPIs) were subdivided into two groups of inputs (Question no 14) and outputs (Question no 15, 16 & 17) and each group also consisted of various measurement items. The questions are drawn and adapted from Xie and Hayase (2007). The measurement items for each indicator drawn from previous studies (Curkovic, 2003; Ilinitch et al., 1998; Nakao, et al., 2006; Xie & Hayase, 2007) are listed in Table 3.2. Altogether, there are 36 measurement items for the MPIs and 11 for the OPIs.

Respondents were requested to write down the actual amount of input used and output released by their companies during the accounting years 2005 and 2006 for the 11 OPI items. Some environmental attributes, such as 'organizer's position in a company' or 'environmental commitment',

are inherently qualitative and cannot be precisely quantified (Fiksel, 1996). Thus self-reported perceptual measures have been used extensively in the literature, with success (Curkovic, 2003). Therefore, following Xie and Hayase (2007) we designed multiple-choice questions for the 36 MPI items (see Table 3.2). The survey did not use perceptual questions for the MPI items. In order to increase the degree of objectivity of the respondents' answers to the questions, the survey enquired about the concrete and objective situations of relevant environmental management processes (see details in Inputs & Outputs in Table 3.2). The survey used questions for operational countermeasures and asked respondents to assess how proactive their companies were in implementing the countermeasures on a five-point Likert scale. Several drafts of the questionnaire were made and improved until a final draft was produced for pre-testing.

3.1   Pre-testing of the Survey Instrument

A pre-test is important to evaluate the survey instrument prior to conducting the survey, and to reveal any errors in questionnaire design before it is send to the actual respondents in the study (Cavana, Sekaran & Delahaye, 2000). Moreover, to test the survey instrument on its content, wording and language proficiency, survey length, question bias and question sequencing a pre-testing of the instrument was undertaken. A five members group, consisting of academics from Macquarie and Newcastle University experienced in quantitative studies, was formed to test the instrument. A copy of the research objective and survey instrument was distributed to each group member for their suggestions and recommendation.

Minor modifications or the wording of several construct items was suggested by the group. The group also suggested changing the sequencing of the questions that appeared to be similar due to the nature of the constructs in the survey. To avoid potential confusion or misinterpretation of the terms and scale used the group suggested inclusion of definition and expiation of special terms used in each section of the survey. The Likert scales headings were also required on each page of the survey. Important suggestions were made regarding response bias and definition of terms used in the survey. As individuals tend to respond to the questions asked in the questionnaire in ways that they feel to be socially desirable, it has been argued by Arnold et al. (1985) that responses from respondents to questionnaires may be viewed as contaminated ('socially desirable responding',

Arnold and Feldman, 1981; Arnold et al., 1985). However, questionnaire results are considered useful here as the obligations on the respondents to respond to the questionnaire in a 'socially desirable' or conditioned manner were minimised as the survey was conducted by a person external to their organisations, following the example of Kuasirikun (2005). Different techniques (Brace, 2008) available to prevent social desirability response bias in the paper-based survey questionnaire were incorporated in the survey development process.

4 Method of Analysis

Method of analysis engaged in the paper one and two of this study is reported in this section. A three stage procedure was undertaken to analyse the quantitative data. Descriptive statistics in SPSS software was the first step. Checking participants' mean responses and standard deviation to all the questions in the survey was done in this step. The findings enabled the researcher to explore the responses to each question in the survey and understand the skewness (symmetry) and kurtosis (peaked or flat) of the data. Following Hair, Anderson, Tatham & Black (2006) the distribution is identified as normal if the skewness and kurtosis values did not exceed 1.96. Principal component Analysis (PCA) with varimax rotation in SPSS version 15 was undertaken in the second stage. Paper one of the study used the above mentioned two stages. Paper three undertaken the mentioned two steps and proceeds to the third step. In stage three structural equation modeling (SEM) in AMOS 7 was used to perform confirmatory factor analysis (CFA) and to test significant relationships between the constructs in the study, and to test the full conceptual model.

Factor analysis is a data reduction technique that can be used for reducing a large number of variables to a smaller set of underlying factors that summarize the essential information contained in the variables (Coakes, Steed & Ong, 2010). PCA helped the researcher in evaluating the new scales developed for the study, by identifying the underlying structure (dimensions) of the key constructs. Next, the CFA enabled confirmation of the discriminant validity of the key constructs. Finally, a full structural model tested the hypothesized relationships developed in the conceptual model. The following section will rationalise the use of PC A and SEM in the study.

4.1 Principal Components Analysis

PCA in the study enables the researcher to identify the number of factors that underlie the observed variables, and to test the dimensionality of the constructs in the study. PCA is designed for situations where the links between the observed and latent variables are unknown or uncertain. Churchlll and Iacobucci (2005) mentioned that in addition to the above, PCA also enables the researcher to assess the convergent and discriminant validity of the construct measures. The extent to which the items positively correlate with other measures of the same construct is examined by convergent validity. In the study, high loadings on the factor of the construct to which the variable belonged indicated convergent validity. The extent to which a measure did not correlate with other constructs from which it was supposed to differ is examined by discriminant validity. Discriminant validity is indicated by low correlations with constructs to which a variable did not belong (Churchlll, 1979).

Following Fukukawa et al. *(*2007*)* Cronbach's alpha, a test of internal consistency, was also used to assess the reliability of the scale measures. Cavana, Sekaran and Delahaye, (2001) commented that Cronbach's alpha is the most popular means to not only estimate reliability measures of a scale, but also the degree of co variation which exists among the scale items. However, before conducting the analysis several diagnostic tests were performed to ensure that valid conclusions are drawn based on the factor analysis. Barlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was also performed to determine the factor-ability of the matrix. To check the normality of the data, skewness and kurtosis of the variables were examined. The skewness and kurtosis of all of the observations were within the range of $2 \times$ Standard Error. Linearity was checked by scatterplots of pairs of variables. The Bartlett's test ensured that the correlations were significant at the .001 level and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) value falls in the acceptable range (above 0.50) with a value of 0.729   indicating that the variables meets the fundamental requirements for factor analysis. Section 4.2 presents the advantages and limitations of SEM and rationale for using this in the third paper of the study.

4.2 Structural Equation Modeling

Statistical and theoretical justification for using structural equation modeling (SEM) is broadly presented in this section. According to Byrne (2006) SEM is a statistical method that takes a

confirmatory (i.e. hypothesis testing) approach to the analysis of a structural theory bearing on some phenomenon. Two important aspects of the procedure are conveyed by the term *structural equation modelling. F*irst, the causal processes underlying the study can be represented by a series of structural (i.e. regression) equations, and second, these structural relations can be modeled pictorially to enable a clearer conceptualization of the theory under study. Byrne (2006) stated that the hypothesized model is tested in a *simultaneous* analysis of the entire system of variables, to determine the extent to which the model is consistent with the data. If the fit of the data to the model is adequate, the model then argues for the plausibility of postulated relationships among the variables; if it is inadequate, the tenability of such relations is rejected.

Fornell and Bookstein (1982) commented that several aspects of SEM set it apart from other multivariate procedures. First, it takes a confirmatory rather than an exploratory approach to the data analysis. Moreover, by demanding that the pattern of inter-variable relations be specified *a priori,* SEM lends itself well to the analysis of data for inferential purposes. By contrast, some other multivariate procedures are basically descriptive by nature (e.g. exploratory factor analysis). Second, SEM explicitly provides estimates of error variances although traditional multivariate procedures are incapable of either assessing or correcting for measurement error. Alternative methods, those rooted in regression or the general linear model, assume that error in the explanatory variables vanishes. Third, SEM procedures can incorporate both observed and unobserved (latent) variables although data analyses using the former methods are based on observed measurements only. Finally, Byrne (2006) concluded that there are no widely and easily applied alternative methods for modeling multivariate relations.

4.2.1 Latent versus Observed Variables

Researchers in the social sciences are often interested in studying theoretical constructs that cannot be observed directly. These abstract phenomena are termed *latent variables* or *factors.* Examples of latent variables in management are employee motivation; in economics, social class; in marketing, brand awareness and market orientation, loyalty.

Latent variables cannot be measured directly as they are not observed directly. Therefore, the researcher must operationally define the latent variable of interest in terms of behaviours believed to indicate its presence. The unobserved variable is linked to one that is observed in this way, thereby making its measurement possible. Behaviours can mean scores on a particular instrument that measures attitudes, behaviours or observations of a task. These measured scores are termed *manifest* or *observed* variables in SEM methodology. These measured scores serve as *indicators* of the underlying *factor* they are presumed to represent. For example, being physically close to someone in the club indicates closeness and hence bonding social ties, while membership in any clubs indicates linking social ties.

4.2.2 The basic Composition of a SEM Model

Two sub-models: a measurement model and a structural model are the components of the basic SEM model. The relations between the observed variables (indicators) and the unobserved latent variables (factors) are defined by the *measurement model.* The measurement model specifies the pattern by which each indicator loads on a particular latent variable (Byrne, 2006). Schumacker and Lomax (1996) stated that in contrast, the *structural model* defines relations among the latent variables. So the manner by which particular latent variables either directly or indirectly influence (i.e. cause) changes in the values of certain other latent variables in the model is *specified by the structural model*.

5   Sample Size and Data Collection

In identifying the sample size two conditions were taken into consideration. First, the sample size has to be adequate to offer powerful statistical testing of the theoretically hypothesized relations. Second, financial resources and the amount of time that are available to the research were also considered.

In the estimation and interpretation of SEM results the sample size plays an important role. Sample *size* provides a basis for estimation of sampling error as in any other statistical method. Results derived from bigger samples are more likely to be statistically significant and have less sampling error than results derived from smaller samples.

Maximum likelihood (ML) estimation statistical method is used in this research. There are no generally accepted criteria for determining a specific sample size using ML estimation or similar

structural modeling techniques. However, Coakes et al. (2010) recommends that a minimum of five subjects per variable is required for factor analysis. Coakes et al. (2010) commented that a sample of 100 subjects is acceptable but sample sizes of 200+ are preferable. Therefore a sample size of more than 300 was aimed for during data collection.

The data was collected through a professional data collection agency, Market Xcel Data Matrix Pvt Ltd, which had the necessary expertise, manpower and personal relationships with organisations in India and in Australia to facilitate a higher response rate. A sample size of 200 organisations from three industries (Chemical, Industrial Engineering and Pharmaceutical/Biotech) in India and another 250 organisations in total from the same three industries in Australia were randomly selected. These industries were selected based on the social perceptions that organisations operating in these Chemical, Industrial Engineering and Pharmaceutical/Biotech industries are more likely to be considered environmentally sensitive (Elkington, 1994). Other environmentally sensitive industries such as 'Mining' and 'Industrial Transport' were not selected because these two sectors are largely run by the government companies in India. Few private limited companies operates in this sector are listed in the stock exchange. As a result sufficient numbers of companies were not available for data collection.

Industry classification and companies of both countries were selected randomly from the list of companies provided by the electronic database, DataStream Advance 4. An industry wide list of selected companies along with a questionnaire was supplied to Market Xcel Data Matrix Pvt Ltd, for collating the information from Australia and India. This data collection company maintained data originality and independence by following the International Code on Market and Social Research (ICC/ESOMAR) guidelines, (www.esomar.org) and maintained international delivery standards. To maintain data originality and reduce the risk of a low response rate, the author was personally present in India (at the beginning of the collection process) and Australia during their respective data collection period and oversaw (gave instructions from time to time) data collection to avoid possible data duplication and fraud, and to make sure that the data collected was original, legitimate and reliable.

In both countries, the firm Market Xcel Data Matrix Pvt Ltd randomly selected participants from their database who were middle or top level corporate / branch managers of selected Australian and Indian companies. One participant was selected from one company. The surveys were addressed to the middle or top level managerial personnel including accounts manager, general manager, assistant general manager, director (public relations) head of CSR committee, or any other responsible person of a company who has knowledge and expertise over the areas of investigation. The right participant of a company was identified by consulting the human resource department of that company. The participant described themselves as manager if they were not director, CEO of chief accountant. The different managerial titles were not available. The firm delivered questionnaires to the selected participants, who had the option to complete it in their own time. The firm personally collected the completed questionnaires after a period of approximately one week from the Indian participants and by post/over the phone from Australian participants. Due to the different operational environment in India it was prudent to have a professional firm deliver and collect the questionnaires, as mailed questionnaires would most likely remain unanswered without a personal approach. At the time of delivering the questionnaire the respondents were informed that their participation in the survey would be voluntary and would not lead to any consequences pertaining to non-participation or completion of the questionnaire. A total of 320 questionnaires (150 from Australia and 170 from India) were finally received with responses.

6.   Data Coding

Based on 17 social and 18 environmental indicators, a check list comprising 35 disclosure items has been developed. This scoring sheet has been applied to each organisation to determine the extent of reporting within each country. The information has been coded assigning a quantitative value of zero, one and two to reflect the extent of information. An indicator has been assigned a value of; (a) two, if it disclosed tables of data (quantitative), (b) one, if it disclosed by short mention of topic (qualitative) and (c) zero, if it has not disclosed. Based on this scoring system, a tripartite disclosure index [incorporating social, environmental, and a combined social and environmental disclosure index] has been constructed for each organisation within both countries.

Australian information has been coded by the candidate using the coding process described above. Indian information has been coded as zero, one and two (as mentioned above) by a research assistant. The research assistant was a master of economics student at the University of New England. In the first instance the coder was provided with an outline of the system in detail and was asked to code a sample of 25 companies. During the process the coder and candidate met regularly to discuss the progress and any doubts about the coding process. After completion of the sample coding, both coder and the candidate sat again to discuss and analyse the results. Both clarified their queries and doubts about the coding. The final coding was done following an agreed process and procedure. To ensure consistency and relevance and avoid selection bias, 20 percent of the Indian data was randomly chosen and again coded separately by the candidate. The process did not indicate any significant difference. Accordingly, no adjustments to the final coding were necessary.

7.   Rationale for the use of Imputation Method

Due to the non-availability of relevant data (respondent did not provide any information about these questions) on input and output factors an estimated value on the Input and Output data is introduced in the study. Responses to survey items under operational countermeasures and environmental tracking were used to estimate the input and output of the sample companies. Considering the significance of these indicators in measuring OPIs (operational performance indicators) and in applying the EPM model as the final objective of this study, a decision was taken to predict the values of input-output data based on the responses received from other items in the survey. This involved computing new variables in SPSS. The study proposed that the summation of both these variables can help predict resources used and waste discharged by companies in their regular course of operation. However, estimated values are useful to run the CEP model and predict its validity. Rubin (1976); Chin, Marcolin and Newsted (1996) and Royston (2005) all use imputation methods to predict the values of missing data/responses within a variable. This study likewise also uses the imputation method.

Using imputation methods especially to predict the values of a missing data or missing responses within a variable is a common practice. We are required to predict the missing data by using imputation method if we use SPSS data in AMOS software. The process, through which imputation of

the new variable takes place, is described as interaction effect. To predict moderation effects in regression this interaction effect is also widely used. We acquired support of these two techniques and took the analysis one step further. Estimation of input and output data by using equations is suggested in the second paper of the study. Following Rubin (1976), Chin et al., (1996); and Royston (2005) the second paper has used imputation method. The imputation process commonly used to predict missing value. Whether the missing data is at random or follows a standard pattern to interpret the validity of the estimated data was not possible to judge in this paper. It is hard to get the information on those questions related to input and output was also supported by Xie and Hayase, (2007). Hence, equations and imputation process is a better solution to predict the validity of a data and test the CEP model.

Appendix D: Participant Information Statement

October 27, 2008

Dear Sir/Madam,

Name of Project: "Corporate Social Responsibility (CSR): Attitude, Performance Measurement and Disclosure – A Cross Country Comparison"

My name is Asit Bhattacharyya [, Mobile:], and I am a PhD student in the Department of Accounting and Finance, at Macquarie University in Sydney, Australia. This research is being conducted to meet the requirements for the degree of Doctor of Philosophy, under the supervision of Associate Professor Lorne Cummings [, Ph:], and Dr Robert Staib [, Fax:].

You are invited to participate in an international study on the attitudes toward Social and Environmental accountability. The purpose of the study is to elicit and compare managerial attitudes toward social and environmental issues. The study is being funded by a 2008 Macquarie University Division of Economic and Financial Studies HDR Support Grant. This study is important in gaining an understanding of current and potentially future managerial attitudes toward social and environmental accountability. The questionnaire is in four parts. Section A consists of personal information about the respondents, whilst section B and C pose questions regarding attitudes toward social and environmental accountability respectively. Section D explores issues surrounding environmental performance measurement. There are 60 questions in total. The questionnaire will take approximately 15-20 minutes to complete.

Participation in this questionnaire is voluntary and you have the right to withdraw from further participation at any time without having to give a reason and without adverse consequences. Data you provide will be anonymous, and no individual will be identified in any publication of the results.

Data will be analysed in aggregate form, and held solely by the researchers. Articles containing a summary of the results will be published in future academic publications and in a PhD thesis. A copy of summary results will be e-mailed to participants within six months of survey if any particular participant indicates their willingness to receive feedback by sending an e-mail at .

Your time and co-operation in completing this survey is greatly appreciated. The ethical aspects of this study have been approved by the Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Research Ethics Officer (Telephone [+61 2] 9850 7854, fax [+61 2] 9850 8799, email: ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Yours Sincerely

Asit Bhattacharyya

PhD Student - Department of Accounting and Finance

Macquarie University, SYDNEY 2109.

Appendix E: Rating System used in Paper Two

Indicators and measurement items	5	4	3	2	1
		Rating	**System**		
Organisational system SI2 Adoption scope of ISO 4001	The organisation and/or some group subsidiaries have been accredited with ISO 14001.	Setting up (or have) own environmental management system separate from ISO 14001	ISO 14001 accreditation under consideration	No plan for ISO 14001 accreditation.	Don't know.
SI3 Adoption time of ISO 14001	Before Dec, 1996	During Jan. 1997 to Dec. 2000	During Jan. 2001 to Dec. 2004.	During Jan. 2005 to Dec. 2008.	From Jan. 2009
SI4 Environmental organisation	Already set up.	Setting up	Under consideration	Planning to set up by year 20----	No plan to set up
SI5 Environmental head's position in the company	Chief executive officer.	A director.	Chief accountant	An environmental engineer.	A senior manager.
SI6 Environmental accounting.	Almost our entire consolidated group has established a system	Our organisation and some of the group subsidiaries have established a system	Only our organisation has established a system	It is under consideration for our organisation.	No plan for the establishment of a system.
SI7 Environmental auditing	The consolidated group has officers	Our organisation and some of subsidiaries each have an officer	Only our organisation has an officer	An officer is under consideration	No plan for employing an officer
SI8 Environmental education	All/ some employees on a regular (yearly) basis.	All employees at the time of initial employment after that not on a regular basis	Educates all only when an issue/event arises	Education under consideration	No plan for education
Stakeholder relations RI1 Environmental disclosure scope	Almost the entire consolidated group releases this information	Our organisation and some of the group subsidiaries release this information	Only our organisation releases this information	Under consideration by our organisation	No plan to release this information
RI2 Environmental disclosure content	A combination of both technical and non-technical data	Technical data (e.g. energy input, quantity and type of natural resources used, quantity of carbon dioxide or greenhouse gases emitted, the amount of waste produced, the amount of waste recycled or reused).	Non–technical data (e.g. environmental policy, performance plans for the environment, accounting for the environment etc.).	Non–technical data only	No disclosure
RI3 Environmental disclosure method	Through a stand-alone environmental (or sustainability) report	Through the annual report or regular business report	Through the internet via organisational email or website	Through another specific method	No Disclosure
RI4 Contributions to local communities	Plant trees in, around and outside of your company premises	Conduct or participate in environmental clean-up activities.	Provide donation/ grant to local organisations	Provide support for collecting recyclable materials	No volunteer activities

Appendix – F

Definition of key terms used in the Thesis

1. <u>Corporate Social Responsibility (CSR).</u>

The origin of the CSR construct has been traced back to the works of Bowen, particularly his book *Social Responsibilities of Businessmen* published in 1953 (Valor, 2005). He dubbed as the modern 'Father of Corporate Social Responsibility' included issues like stewardship, social audit, corporate citizenship and even issues related to stakeholders (Windsor, 2001). However, he did not provide any definition of CSR. The term, as the literature indicates, could be interpreted in various ways.

 Votaw (1973) made one of the most apt observations on the term CSR, its definition, and interpretations. He observed that 'the term is a brilliant one; it means something, but not always the same thing, to everybody. To some it conveys the idea of legal responsibility or liability; to others it means socially responsible behaviour in an ethical sense; to still others the meaning transmitted is that of "responsible for", in a causal mode; many simply equate it with a charitable contribution' (p. 11).

Such differing interpretation has been one of the reasons for the lack of a clear and well accepted definition (Valor, 2005). Other popular definitions are:

"The social responsibility of business encompasses the economic, legal, ethical and discretionary expectations that a society has of organizations at a given point in time." (Carroll, 1979; 2008, p: 500)

"A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis". (EU Definition of CSR).

"Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and

their families as well as of the local community and society at large" (The World Business Council for Sustainable Development (WBCSD).

Source: mhcinternational.com

Dahlsrud (2006) developed five dimensions of CSR through a content analysis of existing CSR definitions and commented that "altogether, these five dimensions (1) stakeholder dimension, (2) social dimension, (3) economic dimension, (4) voluntariness dimension, and (5) environmental dimension are used consistently in the definitions. Although they apply different phrases, the definitions are predominantly congruent, making the lack of one universally accepted definition less problematic than it might seem at first glance. The CSR definitions are describing a phenomenon, but fail to present any guidance on how to manage the challenges within this phenomenon" (p: 7).

2. Social and Environmental (S&E) Accountability

Accountability is the responsibility to provide a financial or non-financial rationalisation or considering those actions for which one is held responsible (Gray, Owen & Adams 1996). According to Gray et al., (1996) accountability entails two duties or responsibilities: they are (1) accountability to carry out specific actions or abstain from taking certain actions and (2) accountability to offer a justification for those actions. Different countries and cultures will have different views about the social responsibilities of entities. If we accept that different individuals and cultures have different perspectives about corporate social responsibilities, this will explain to some extent why there are differences in social responsibility reporting practices across countries.

3. Corporate Social and Environmental Reporting

Deegan (2007, p. 1263) defines CSR reporting as "the provision of information about the performance of an organisation in relation to its interaction with its physical and social environment". This would include information about an organisation's interaction with the local community; level of support for community projects; level of support for developing countries;

health and safety record; training, employment and education programs; and environmental performance.

Social reporting and environmental reporting are two associated terms which are part of the overall concept of CSR. Gray *et al.* (1993, p. 6) defined environmental reporting as; "covering all areas of accounting that may be affected by the business response to environmental issues, including new areas of eco-accounting". Social reporting provides information about an organisation's interaction with and associated impact on particular societies (Deegan, 2007).

A broad definition provided by Mathews and Perera (1995, p. 364) is:

" an extension of reporting into non-traditional areas such as providing information about employees, products, community service and the prevention or reduction of pollution. However, the term "social accounting" is also used to describe a comprehensive form of accounting which takes into account externalities...Public sector organisations may also be evaluated in this way, although most writers on the subject of social accounting appear to be concerned with private sector organisations".

4. **Social and Environmental Accounting**

Social and environmental accounting has been defined by Gray, Owen & Maunders (1987, p. ix) as:

"…the process of communicating the social and environmental effects of organisations' economic actions to particular interest groups within society and to society at large. As such it involves extending the accountability of organisations (particularly companies), beyond the traditional role of providing a financial account to the owners of capital, in particular, shareholders. Such an extension is predicated upon the assumption that companies *do* have wider responsibilities than simply to make money for their shareholders".

And by Mathews (1993, p. 64) as:

"Voluntary reporting of information, both qualitative and quantitative made by organisations to inform or influence a range of audiences. The quantitative reporting may be in financial or non-financial terms".

5. <u>Corporate Social Performance</u>

The essence of corporate social responsibility is the continuous improvements generated through corporate actions. Corporate social responsibility is defined as actions and activities that improve and/or protect social welfare on a local or global level; and corporate social performance is the 'measurement' of the organisations overall performance in improving and protecting social welfare compared to their leading competitors in the industry, measured over a period of time, (Luo and Bhattacharya, 2009, p. 201)

Corporate social responsibility refers to firms' programs and investments in responsibility and/or sustainability, while corporate social performance represents stakeholders' assessment of the overall quality of those programs and investments (McWilliams and Siegel 2000).

Corporate social performance can be a proxy for a firm's cumulative, historical involvement in the noncumulative, one-time involvement in corporate pro-social behaviours (Barnett 2007).

Corporate social performance is relative to the competition in the industry. "While firms invest in corporate social responsibility initiatives; corporate social performance, as the measure of firms' aggregated historical social performance relative to competition, is what stakeholders reward the firms for and, therefore, what is potentially linked to firm financial performance", (Luo and Bhattacharya, 2009, p. 201)

6. <u>Corporate Environmental Performance (CEP)</u>

Corporate environmental performance is the results of environmental management activities of an organization. Environmental performance can be defined as 'the results of an organisation's management of its environmental aspects' (ISO, 1999) or, more precisely, "environmental performance is the totality of a firm's behaviour toward the natural environment (i.e., its level of total resource consumption and emissions)" (Wagner, Van Phu, & Wehrmeyer, 2002). López-

Gamero, Molina-Azorín, & Claver-Cortés (2009) state that corporate environmental performance represents the outputs of environmental management activities. Lankoski (2000) defined corporate environmental performance as "the level of harmful environmental impact caused by a firm so that the smaller the harmful environmental impact the better the environmental performance and vice versa" (p.10). Wagner (2003) defined corporate environmental performance as "the results of an organization management on its environmental aspects" (p.10).

7. Environmental Management Performance

The implementation of strategies and operating practices to minimize its environmental impacts is known as an environmental management, which refer to the technical and organizational activities undertaken by the corporation for the purpose of reducing their environmental impacts on natural environment (López-Gamero, Molina-Azorín, & Claver-Cortés, 2009).

8. Environmental Operational Performance.

Environmental Operational Performance is company's performance measured against standard or prescribed indicators of effectiveness, efficiency, and environmental responsibility such as, cycle time, productivity, waste reduction, and regulatory compliance.

9. Global Reporting Initiative (GRI 2002)

GRI is a worldwide, multi-stakeholder network. Business, civil society, labour, investors, accountants and others all collaborate through consensus-seeking approaches to create and continuously improve the Reporting Framework. The multi-stakeholder approach ensures the credibility and trust required of a global disclosure framework. GRI became independent in 2002. It is an official collaborating centre of the United Nations Environmental Programme (UNEP) (www.globalreporting.org). GRI is the primary global social and environmental reporting standard (Schaltegger and Burritt, 2000). GRI includes all aspects of sustainable development (triple bottom line reporting). The GRI Reporting Framework facilitates transparency by all types of organizations including companies, public agencies and non-profitable organisations. All elements of the GRI reporting framework are created and continuously improved using a consensus- seeking process involving worldwide practitioners. GRI reporting guidelines have also

gained recognition and endorsement from various stakeholders, including inter-governmental agencies and supranational bodies, such as the European Union, United Nations, Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (Ho and Taylor, 2007). Literature (Burritt, 2002; Rezaee et al., 1995; Sahay, 2004; Schaltegger and Burritt, 2000) has highlighted the need for standardisation of SER practice using GRI guidelines.

Notes

[1] The EPM model is assessed on its internal structure by examining its parameter estimates (Bagozzi and Yi 1988), standardised regression weights on comp >0.70 (Churchill 1979) and squared multiple correlation (R^2). Squared multiple correlation are the item reliabilities of a construct, and values >0.50 (Jöreskog and Sörbom 1996) are acceptable score to assess the model fit. Critical ratios also known as t-values in regression more than 1.96 are significant at the .05 level. The standardised residual covariance (SRC) with values >2.50 indicate cross loading of the items on other factors and hence considered as candidates for deletion from the model (Jöreskog and Sörbom 1996). The standard errors and coefficient of determination also provide reasonable estimates to assess the goodness of fit of the model. If any of these quantities show an unreasonable value, then it is an indication that the model is fundamentally wrong and not suitable for the data (Hair, Anderson et al. 1998). Negative variances and correlations larger than one in magnitude are also examples of a bad model fit (Steiger 1990).