

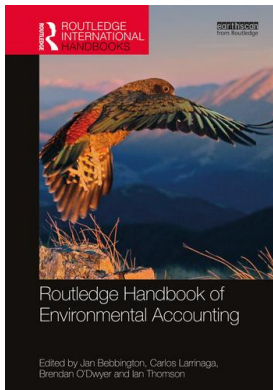
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20

ENVIRONMENTAL ACCOUNTING AND REPORTING PRACTICES IN ASIAN COUNTRIES

Tiffany Cheng-Han Leung

Introduction

The Asia Pacific region covers a large geographical area with abundant natural resources. However, this region is expanding at an accelerating rate due to rapid economic development, population growth and being the world's manufacturing hub. This has resulted in overconsumption of and increasing demand for non-renewable resources. The impacts of climate change, greenhouse gas (GHG) emissions and biodiversity degradation have become visible in the Asia Pacific region (Lee 2014). Multi-national and local companies in this region have faced significant environmental pressures and resource constraints, such as water scarcity, soil erosion and severe biodiversity loss, which lead to increase raw material costs, energy costs and environmental costs (Lee and Schaltegger 2018).

Taking this context into account, companies in the Asia Pacific region increasingly pay attention to their environmental impacts and risks in their business operation. Approximately 37% of the Global 250 companies are from the Asia Pacific region and 78% of the largest 100 companies in the Asia Pacific region report on social and environmental information in their annual reports and stand-alone sustainability reports (KPMG 2017). Governments, investor pressures and local stock exchange requirements in this region play important roles in increasing environmental reporting incidence over the past decade (KPMG 2017). Companies in the Asia Pacific region are attempting to be more accountable, transparent and responsible with regard to environmental performance so that investors can evaluate non-financial information in corporate reports more closely (Noronha et al. 2015; Leung and Snell 2017; Solovida and Latan 2017; Leung 2019).

A growing number of studies on environmental accounting in Asian countries have been conducted in the past decades (Rahman et al. 2010; Herzig et al. 2012; Zhao and Patten 2016) and companies in Asian countries have made significant progress in providing environmental related information in corporate reports and in developing the environmental performance systems and accessing ecological impacts (Herzig et al. 2012). Most of environmental accounting studies among Asian countries tend to examine single or one specific country rather than multiple countries (Williams and Pei 1999; Thompson 2002; Herzig et al. 2012; Leung and

Gray 2016). Thus, the objective of this chapter is to provide a general overview of the recent development and observation of environmental accounting and reporting practices among five Asian countries.

The rationale of choosing these countries is threefold. First, Mainland China, Singapore and Malaysia were chosen because of the presence of environmental reporting regulations, driven by both government and local stock exchanges (KPMG 2017). Second, Hong Kong, a special administrative region in China, is included in this study because it is one of the leading international financial centres and has environmental reporting standards on par with international reporting practices (Ng and Leung 2020). Third, Japan is selected in this study for historical and contextual reasons. Japan was the first Asian country to experience serious environmental pollution between 1950s and 1970s, which they addressed through strict environmental protection regulations. Japan also experienced a substantial change in environmental policies after the Kyoto Protocol in 1997 (Saka and Oshika 2014; Yook et al. 2017). Thus, the environmental reporting regulation in Japan is strongly driven by government and draws from this historical background (KPMG 2017).

This chapter is structured as follows. After the introduction, the next section provides a literature review on environmental accounting and reporting practices in Mainland China, Hong Kong, Japan, Singapore and Malaysia. This is followed by a discussion about the incidence of corporate reporting, drivers of environmental reporting regulations and quality of environmental reporting. Lastly, some concluding comments are made.

Environmental accounting and reporting practices in Asian countries

Mainland China

Despite the remarkable industrial development and economic growth over the past three decades, China has faced a number of environmental challenges and problems. China is one of the world's largest energy consumers, with around 20% of global energy consumption in 2018 due to its heavy reliance on fossil fuel and coal (International Energy Agency 2018). The World Bank (2013) estimates the cost of environmental degradation in China as being more than 10% of its gross domestic product (GDP), including the costs of air pollution (6.5%), water pollution (2.1%) and soil degradation (1.1%).

Prior to 2006, the level of environmental reporting in Chinese language studies tended to be low (or absent), which was in line with the findings in English language studies (Yang et al. 2015). There are three main factors to explain this phenomenon: (i) a lack of a transparent information disclosure environment, (ii) absence of accounting skills to report environmental related information and (iii) any reporting being seen as having potential negative economic and political impacts on Chinese companies (Yang et al. 2015).

In 2006, the Ministry of Finance, the State Environmental Protection Administration of China required companies to disclose social and environmental information on their reports (Noronha et al. 2013). Subsequently, the Shanghai Stock Exchange (SSE) required companies listed abroad to issue annual Corporate Social Responsibility (CSR) reports in 2009, while the Shenzhen Stock Exchange (SZSE) required companies listed in the SZSE 100 Index to follow *Social Responsibility Guidelines for Listed Companies* in 2009 (Yu and Rowe 2017). The Chinese government and the domestic stock exchange requirements are major factors contributing to the substantial growth of stand-alone CSR reports in China: such reporting is a mandatory practice (Rowe and Guthrie 2010; Yin and Zhang 2012; Yu and Rowe 2017).

More importantly, the Chinese government has established regulations for environmental protection, including environmental reporting to local government (He and Loftus 2014). For example, the Prevention and Control of Air Pollution Act requires companies to disclose their carbon emissions and environmental management efforts. Government authorities have the right to such environmental information in order to evaluate their environmental performance (He and Loftus 2014). Some local governments collaborated with the World Bank's InfoDev Program and the Ministry for Environmental Protection to enforce environmental regulations, namely, "China Green Watch Program" which deploys a colour-coded system to rate companies' environmental performance (He and Loftus 2014). Pertinently, the Chinese government has taken a major step to launch "Green Securities Policy", which is the revised Environmental Protection Law, in 1 January 2015 and to require companies to disclose pollution data with local government agencies being responsible for disseminating this information to the public (Hong Kong Exchanges and Clearing Limited 2015).

While these environmental regulations and guidelines are prevalent in China, the extent of environmental accounting and reporting is still in its infancy (Yang et al. 2015; Zhao and Patten 2016; Yu and Rowe 2017). The empirical environmental accounting research tends to focus on environmental performance in polluting industries and environmental assurance (Yang et al. 2015). Environmental sensitive companies appear to voluntarily disclose environmental information in order to maintain their legitimacy in the eyes of the public (Yu and Rowe 2017). In addition, peer pressures from salient stakeholders to embrace environmental reporting practices are mainly driven by the prevalence of a collectivist approach and the deep-rooted face (Mianzi) culture (i.e. to avoid embarrassment or saving face culture) (Yu and Rowe 2017).

Hong Kong

Hong Kong, the special administrative region of Mainland China, has positioned itself as the global financial centre, supporting capital raising and cross-border financial functions (Chan and Welford 2005). Hong Kong focuses on the service industry rather than the energy-intensive industry. GHG emission mainly comes from the building sector (Lai 2014). The Environmental Protection Department and the Electrical and Mechanical Services Department issued the Guideline to Account for and Report on Greenhouse Gas Emissions and Removals for Building in 2008 (Lai 2014). This guideline focuses on commercial, residential buildings, and institutional buildings and highly relies on self-assessment and voluntary reporting practices at that time (Lai 2014).

Several environmental reporting studies have investigated reporting among Hong Kong companies from 1990 to 2005. The results show that the level of environmental reporting among Hong Kong listed companies is fairly low during the observed period (Lynn 1992; Ho et al. 1994; Jaggi and Zhao 1996; Gao et al. 2005). These listed companies tend to disclose social rather than environmental information in their reports (Williams and Pei 1999; Xiao et al. 2005). Prior to 2010, Hong Kong listed companies tend to provide insufficient information for investors in relation to corporate environmental risk, performance and management (Chan and Welford 2005).

The Hong Kong Exchanges and Clearing Limited (HKEX) released a consultation paper for the Environmental, Social and Governance Reporting Guide in 2011 (the ESG Guide). However, Bloomberg's study shows that over 50% of 330 sample issuers did not report or disclose any ESG-related issues in 2014 (Hong Kong Exchanges and Clearing Limited 2015). After the public consultation closed, all Hong Kong listed companies were required (in 2017) to publish

an annual ESG report to improve the non-financial information and improve risk management (specifically, issuers were required to report “General Disclosures” and Key Performance Indicators – see Hong Kong Exchanges and Clearing Limited 2015).

Given ESG is a relatively new area in Hong Kong in recent years, only 37% of business leaders have integrated ESG issues into their strategic planning (KPMG 2018). Hong Kong Exchanges and Clearing Limited (2018) published a review of listed companies’ ESG reports and found that 77% of companies were in full compliance of each environmental aspect in the ESG guide and 39% of companies published stand-alone ESG reports. Some companies show excellent reporting in terms of detailed environmental information and clarity on providing comprehensive description on environmental policies, giving explanations under the “Comply or Explain” provisions and conducting materiality assessment through stakeholder engagement process. In contrast, others appeared to adopt a “box-ticking” approach with short and simple statement without further explanations or lengthy narratives (Hong Kong Exchanges and Clearing Limited 2018).

There are three major barriers for business managers in Hong Kong to address ESG issues: (i) limited knowledge and expertise, (ii) weak association between ESG issues and their impact on the business and (iii) limited expected short-term or immediate return of ESG to business operations (KPMG 2018). Currently, Hong Kong Stock Exchange was ranked the 24th out of 45 global stock exchanges of measuring sustainability disclosure in 2017 (Corporate Knights 2018). Regional counterparts, namely, Bursa Malaysia (BM, known as the Kuala Lumpur Stock Exchange) and Singapore Exchange (SGX), were ranked the 15th and 16th, respectively, suggesting that Hong Kong has some distance to travel yet (Financial Services Development Council 2018).

Japan

Japan experienced serious environmental pollution between 1950s and 1970s and these problems were addressed by strict environmental protection regulations and the new technological development of pollution control (Saka and Oshika 2014). Thus, Japanese companies are the top-ranking list in global carbon efficiency (Saka and Oshika 2014) and Japan has the second highest corporate reporting rate (social and environmental information) in the world, with 99% of the largest 100 listed companies in Japan (KPMG 2017).

Yamagami and Kokubu (1991) and Fukukawa and Moon (2004) are two early works to examine the extent and nature of environmental disclosure in 1985 and 2002. A number of more recent studies have examined various environmental accounting research topics, such as carbon management disclosure, environmental assurance and environmental conservation costs (Saka and Oshika 2014; Ali et al. 2015; Haider and Kokubu 2015; Yook et al. 2017).

The Japanese government and the Japan Business Federation (Keidanren) play important roles and influence on the development of environmental reporting practices (Ali et al. 2015). There are three main environmental regulations in Japan. First, the Japanese government revised the law in relation to climate change for the Kyoto Protocol in 2002 and implemented in 2005 (Sueyoshi and Goto 2010). Japan’s Ministry of Environment issued the Environmental Accounting Guidelines in 2005 and other measures (Law No. 77 of 2004 Japan) and Environmental Reporting Guidelines in 2012 to promote environmental reporting practices with numerical data (Yook et al. 2017; Fitriyari and Kawahara 2018). However, even though Japanese firms disclose environmental information in their reports, it tends not to be comparable with other Japanese firms (Yook et al. 2017).

Second, the mandatory GHG accounting and reporting system of the Ministry of Environment was introduced in 2006 (Nishitani and Kokubu 2012; Yook et al. 2017). These regulations apply to business operators with a minimum of 21 employees or more, with total energy consumption of 1,500 kw of energy per year or above, and/or with more than 3,000 metric tons of equivalent of carbon dioxide each year. This means that these companies are obliged to report their GHG emissions to the government every year (Lai 2014; Saka and Oshika 2014; Fitriasaki and Kawahara 2018). The Environmental Consideration Law stipulates that large firms should also disclose environmental information, initiatives and performance (Yook et al. 2017).

Third, the Rational Use of Energy Act (Act No. 49 of 1979) was initiated by the Ministry of Economy, Trade and Industry to promote energy management and energy efficient usage in factories (Fitriasaki and Kawahara 2018). The amendment of the law in 2008 requires all firms to improve energy conservation (and to endeavour to improve energy efficiency more than 1% of the annual energy consumption) with quantitative disclosures required in their reports (Fitriasaki and Kawahara 2018). This act is intended to monitor particular emitters, including specified freight and passenger carriers, consigners and air carriers (Lai 2014).

Singapore

The awareness level of environmental protection in the government and companies in Singapore is high. In 2005, around 93% of 44 sampled Singapore companies were accredited with the ISO 14001 – environmental management system certification (Chung and Parker 2010; Batra 2013). These accredited companies in Singapore and Malaysia are often the regional headquarters of multinational corporations (MNCs) that operate across Southeast Asia and they are responding to pressure from parent companies to standardise environmental performance and reporting practices (Thompson 2002).

ACCA (2002) showed that 14% of listed companies in Singapore and 23% of government-linked companies (GLCs) disclose environmental information in their annual reports. Rahman et al. (2010) showed that 30% of listed companies in Singapore disclose environmental information in their annual reports. 87% of the sample companies tend to disclose general environmental information, while 13% of companies report narrative disclosure with monetary quantification (Rahman et al. 2010). The trend of environmental reporting among Singapore companies is growing but is still in a low level when compared to other Asian countries, such as Japan, Malaysia and Thailand (Rahman et al. 2010; Batra 2013).

There is a regulatory framework for the environmental management in Singapore which is governed by (i) codes of practices and standards and (ii) legislation such as Government Acts, Rules and Regulations (Batra 2013, p. 76). Codes of practices and standards for environmental management were established by authorities, such as the National Environment Agency, Standards, Productivity and Innovation Board (SPRING Singapore) and PUB Singapore National Water Agency (World Business Council for Sustainable Development [WBCSD] 2018). The SGX issued voluntary sustainability reporting guideline for listed companies in June 2011. In relation to this guideline, the role of corporate governance has been identified as crucial in responding to investor concerns of environmental and social issues. The SGX has issued rules and guidance to require companies to publish the mandatory sustainability reporting in 2016 on a comply or explain basis (WBCSD 2018).

WBCSD (2018) showed that there is a rapid increase in environmental reporting provisions for companies based in Singapore after the new legislation to require companies to disclose key environmental related information, such as water usage, GHG emissions and energy

consumption strategies. Over 90% of companies disclose environmental issues and the top three environmental areas are environmental incidents, waste treatment and effluent (WBCSD 2018).

From 2019, the Singapore government will impose a carbon tax to minimise GHG emission and SGX-listed companies need to embrace it into their corporate strategies and risk management (WBCSD 2018). Importantly, Singapore is the first country in Southeast Asia to introduce a carbon price (WBCSD 2018). Furthermore, issuance of green products, such as green bonds, and green financing continues to grow in the next few years.

Malaysia

In 2001, 367 Malaysian companies had been accredited with the ISO 14001 as these accredited companies are major suppliers to secure their supply contracts with MNCs (Thompson 2002). Malaysia has no statutory requirements for local companies to report environmental information prior to 2006 (Smith et al. 2007). However, there are three main institutions or agencies, namely, the Malaysian Accounting Standard Board (MASB) under the Financial Reporting Act 1997, the Malaysian Code on Corporate Governance (MCCG), and the Association of Chartered Certified Accountant's (ACCA) Environmental Reporting Guidelines that (in combination) created guidelines in order to promote local Malaysian companies to disclose environmental related information (Smith et al. 2007; Buniamin 2010).

There are three main environmental reporting standards in Malaysia. First, Paragraph 10 of MASB 1 – FRs 101 – *Presentation of Financial Statements* – encourages local companies to provide supplementary environmental information in their reports to enhance investors' decision-making. Furthermore, MASB 20 – FR 137 – *Provisions, Contingent Liabilities and Contingent Assets* – was issued in 2001 that helps companies to identify the contingent environmental liabilities and assets (but MASB 20 does not provide clear explanation about what types of liability that companies should report – Smith et al. 2007; Buniamin 2010; Batra 2013). Second, the Finance Committee on Corporate Governance of the Securities Commission initiated the MCCG in 2000 that established the guidelines or practices to help the board of directors who not only seek financial information but also environmental information (Buniamin 2010). Third, the ACCA with the collaboration of the Malaysian Department of Environment published *Environmental Reporting Guidelines for Malaysian Companies* in 2003, which provides a general overview of companies' environmental performance over the last decade (Buniamin 2010). Prior to 2003, the Department of Environment also established the Environmental Quality Act in 1974 (Section 37) requiring companies to disclose environmental information and Section 33A of the Act mandated the environmental audit and Section 34A indicated to disclose environmental impact from prescribed labelling (Smith et al. 2007; Nor et al. 2016).

In 2006, Bursa Malaysia launched the CSR Framework and Guideline for Malaysian public listed companies to encourage to report CSR information in their annual reports and became mandatory requirement in 2007 (Esa and Ghazali 2012; Fatima et al. 2016). However, the level of social and environmental reporting among Malaysian listed companies is fairly low (Sumiani et al. 2007; Buniamin 2010; Othman et al. 2011; Batra 2013; Sundarasen et al. 2016). In particular, key environmental disclosure includes water reporting, hazardous waste management and ecosystem management (Anas et al. 2015; Fatima et al. 2016). These environmental issues have been addressed in Bursa Malaysia's Sustainability Portal in 2010 (Fatima et al. 2016).

In 2015, Bursa Malaysia issued the new Sustainability Amendments to the Main Market Listing Requirements and ACE Market Listing Requirement, which upgraded the obligation to require listed issuers to disclose statement of material economic, environmental and social (EES) risks and opportunities from voluntary to “comply or explain” in their annual reports

that replaced the existing statement of the CSR (Sustainable Stock Exchanges Initiative 2019). This new guideline provides guidance on governance, materiality and stakeholder engagement for companies (WBCSD 2018).

Discussion

Corporate reporting rate

According to KPMG reports (2013, 2015, 2017), Japan consistently has the highest reporting rate with 99% of the largest 100 listed companies in Japan, which is also the second highest of global reporting rate and the highest rate of reporting among Asian countries. While the reporting rate in Malaysia in 2011 was only 2% of the largest 100 listed companies, it rapidly increased to 97% in 2017 due to the new regulation and obligation of EES risks and opportunities in 2015. Currently, Malaysia ranks the fourth of global reporting rate and the second among Asian countries. The reporting rate in Singapore has doubled from 2011 to 2017. The reporting rate in China (including Hong Kong) has also continued to grow from 59% of the largest 100 listed companies in 2011 to 75% in 2017 (KPMG 2015, 2017). Overall, the corporate reporting rate among five Asian countries is higher than the global average with above 72% (KPMG 2017).

Drivers of environmental reporting regulations

Environmental consciousness is growing among Asian countries over the past few years. New environmental regulations, investor pressures and local stock exchange requirements play important roles in increasing corporate environmental reporting rates for five Asian countries (KPMG 2017). The level of environmental disclosure appears to be affected by both global concerns (i.e. climate change and SDGs) and national concerns (i.e. government and stock exchange regulations). The presence of environmental reporting regulations in China, Singapore and Malaysia is mainly driven by the local government and local stock exchanges in recent years (see Table 20.1). More pertinently, Bursa Malaysia and Singapore Stock Exchange were ranked the 15th and 16th out of 45 global stock exchanges of measuring sustainability disclosure in 2017 (Corporate Knights 2018).

Hong Kong reporting is mainly driven by the local exchange rather than the government. The implementation of environmental reporting in Hong Kong tends to have gone through an open consultation with HKEX and an ongoing stakeholder dialogue for 4 years (Ng and Leung 2020). However, Hong Kong was ranked 24th in global stock exchanges of measuring sustainability disclosure that indicates a warning signal to Hong Kong's global competitiveness and is lagging behind Bursa Malaysia and Singapore Stock Exchange (Corporate Knights 2018) (see Table 20.1).

China is driven by both the Chinese government and two stock exchanges, namely, the SSE and SZSE, which required companies to follow and issue CSR reports in 2009. The SSE was ranked 26th and SZSE was ranked 37th in global stock exchanges of measuring sustainability disclosure and the results show that the existence of CSR reporting policies is not well defined and combined with weak enforcement, which means that reporting practices in China are not as strong as elsewhere in Asia (Corporate Knights 2018). By contrast, Japan is mainly driven by the local government rather than the local stock exchange (KPMG 2017). According to Corporate Knights (2018), Japan has fallen from third in 2013 to 36th in 2017 of global stock exchanges of measuring sustainability disclosure due to weakness in the disclosure timeliness.

Table 20.1 Comparison of environmental reporting practices in five Asian countries

Country	China	Hong Kong	Japan	Singapore	Malaysia
Corporate reporting rates in 2011	59%	N/A	98%	42%	2%
Corporate reporting rates in 2017	75%	N/A	99%	84%	97%
Quality of environmental report	Low	Low	Medium	Low	Low
Quality of carbon reporting	10%	N/A	58%	N/A	N/A
Government Stock exchange requirement	Mandatory Yes, 2006 (SSE) 2008 (SZSE)	No Yes, 2017	Mandatory No	Mandatory Yes, 2016	Mandatory Yes, 2015
Global stock exchanges of measuring sustainability disclosure	27th (SSE) 37th (SZSE)	24th	36th	16th	15th

Source: KPMG 2013, 2015, 2017; Corporate Knights 2018.

Quality of environmental reporting

The quality of environmental reporting varies across countries with different regulatory systems and institutional environments. Larger companies tend to provide better quality environmental information than smaller companies (Buniamin 2010; Sulaiman et al. 2014). In particular, larger companies in Japan (with scores of 55 out of 100 in quality of environmental disclosure) are the highest among five Asian countries (KPMG 2013). Several environmental accounting studies indicate that the quality of environmental disclosure in China (excluding Hong Kong), Singapore and Malaysia tends to be low with descriptive and general statements as companies appear to provide insufficient balanced disclosure (including positive and negative news), inadequate quantitative environmental information and low standardised environmental performance indicators (Chung and Parker 2010; Guan and Yu 2011; Yu and Rowe 2017; Fatima et al. 2018). These findings could be useful for regulators and organisations to better understand how to establish effective policies and environmental standards to promote environmental reporting practices that could fit the political, institutional and cultural settings in the Asian contexts (Yu and Rowe 2017; Lee and Schaltegger 2018).

Regarding the quality of carbon reporting, around 27% of Japanese companies are more likely to disclose carbon reduction targets with long-term timelines of 15 years or more, which is above the global average of 14% (KPMG 2015). Japanese companies score 58% in the quality of carbon emission reporting, which is above the global average carbon reporting score of 51% (KPMG 2015). By contrast, Chinese companies score only 10% in the quality of carbon emission reporting, which shows that Chinese companies tend not to publish specific targets for carbon reduction, while European countries, such as Germany, France and the United Kingdom, are more likely to do so (KPMG 2015).

Conclusion

This chapter provides a general overview of the recent developments in environmental accounting and reporting practices among five Asian countries, namely, Mainland China, Hong Kong, Japan, Singapore and Malaysia. A number of observations can be made on the basis of this material.

First, the presence of coercive pressure from the local government and local stock exchange requirements in these countries has driven disclosure of environmental information. Second, third-party independent assurance of environmental information has become standard practices among Global 250 companies (KPMG 2017) despite not being legally mandated. Managers could consider external assurance to enhance investors or other stakeholders to increase confidence in the quality of environmental reporting and encourage the progress of internal environmental performance as key performance indicators. Third, the independent third-party assurance rate of carbon reporting information in Mainland China, Hong Kong, Singapore and Malaysia is still lagging behind the global average assurance rate of 62%, except for Japan that has a score of 65% (KPMG 2015). Ironically, China is one of the largest carbon emission countries, but the independent third-party assurance rate for carbon data and the quality of carbon reporting are merely 9% and 10%, respectively. Governments and regulatory authorities in these countries may need to take further actions or provide incentive schemes, such as tax reduction, to increase the carbon reporting rate.

This study has three main limitations and provides some suggestions for future research. First, it provides a brief overview of environmental accounting and reporting practices in the Asian context. However, this study has been still confined to five Asian countries. The extent and nature of environmental issues can vary across countries, regulatory systems and institutional environments due to different political, social and technological factors. More detailed research is needed on the environmental accounting and reporting practices by comparing differences and similarities among the developed and less developed Asian economies.

Second, this chapter has been confined to the literature review across five countries on this topic. The presence of environmental reporting regulation is primarily driven by the local government and the local stock exchange in recent years (see Table 20.1). Further empirical research and longitudinal studies could examine whether the extent, quality and assurance of environmental accounting and reporting practices in Asian countries could change over time. In addition, recent studies have advocated about the use of reflexivity by corporations in environmental accounting to promote evidence-based performance evaluations of progress made and ongoing attempts to redesign environmental accounting practices (Solomon et al. 2013; Leung and Snell 2019). Future research could explore this area in great details.

Third, this chapter has been limited to environmental reporting practices. Further research could focus on environmental governance (e.g. environmental committee, environmentally aware directors and environmental incentives in executive compensation) to understand the role and impact of boards, audit and compensation committees on the quality of environmental reporting (Mallin et al. 2013; Rodrigue et al. 2013).

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