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# Political competition and environmental reporting

Evidence from New Zealand  
local governments

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## Abstract

**Purpose** – The purpose of this paper is to investigate the relationship between “political competition” and “environmental reporting” by New Zealand local governments.

**Design/methodology/approach** – The research method includes a longitudinal analysis of environmental reporting by New Zealand local governments in their annual reports for the financial years 2005-2006 to 2009-2010. “Content analysis” was used to attach scores to the extent of environmental reporting. The “number of candidates divided by the number of available positions at the previous election” was used as the proxy for “political competition”.

**Findings** – The study reports a positive relationship between “political competition” and “environmental reporting” in 2007-2008. The number of local governments reporting voluntary environmental information increased in 2006-2007 and 2007-2008 compared to 2005-2006, followed by a reduction in such numbers following the 2007-2008 financial year. This trend in disclosure can be attributed to the local government elections in October 2007. This finding is consistent with the expectation of “agency theory” and provides insight into the pattern of perceived agency costs. The study also finds a dearth in reporting “monetary” and “bad” news.

**Originality/value** – The study contributes towards the previous literature on environmental reporting by concentrating on the public sector and New Zealand, together with investigating the relationship of such reporting with “political competition” through a longitudinal analysis. The theoretical contribution of this study is the adoption of “agency theory” in the context of public sector voluntary reporting and investigating the significance attached by agents to environmental reporting to minimise agency cost. The practical contribution of the study is in the area of future development of reporting standards in regards to environmental reporting.

## Keywords

New Zealand, Environmental reporting, Local governments, Political competition

## Paper type

Research paper

## Introduction

Environmental sustainability has become an urgent strategic issue both in the private and public sectors since the beginning of the twenty-first century. Increasing attention and demand for transparency and accountability for sustainable development has led

organisations— both in the private and public sectors, to balance their economic and environmental sustainability goals in order to fulfil their social responsibility. Numerous studies have investigated environmental reporting by private sector organisations (Cunningham and Gadenne, 2003; Gamble et al., 1995; Hughes et al., 2001; Cormier et al., 2005) [1]. On the contrary, studies investigating such reporting in the public sector, including local governments, are sparse.

Previous studies have outlined the determinants of voluntary reporting as “political competition”, “level of debt”, “urbanisation”, ‘per capita income of residents, “press visibility” and “political visibility”. These studies reported mixed results in regard to the relationship between “political competition” and “voluntary reporting” (see, Baber and Sen, 1984; Ingram, 1984; Evans and Patton, 1987; Laswad et al., 2005). “Agency theory” provides an appropriate framework to analyse the relationship between these two attributes.

“Agency theory” posits that it is in the best interest of agents to incur bonding costs to satisfy the principals (Jensen and Meckling, 1976). Principals in the public sector cannot be equated with principals in the private sector that is, shareholders (Sidebotham, 1966).

“Principals” in the public sector are more diverse compared to those in the private sector. A group of principals are electors. Hence, it is expected that an increase in “political competition” leads to more disclosure in the public sector to satisfy principals. Mayors in Local Governments with higher “political competition” will report more information at the time of election as his/her re-election depends on whether electors are satisfied with agents (Mayors).

Following the gap in the literature in public sector, the difference in the level of interest of an agent in the public sector compared to private sector and mixed results reported in previous studies in regards to the relationship between “political competition” and “voluntary reporting” the present study investigates the relationship between “political competition” and “environmental reporting” by New Zealand local governments at the time of election. None of the existing studies concentrated on the election year in investigating the relationship between “political competition” and “voluntary reporting”. The present study specifically contributes by focussing on the election year as public attention on the public sector increases at this time. Also, politicians face immediate threat of dismissal at this time. Hence they are expected to concentrate on reporting at the time of election to satisfy principals (electors). New Zealand Local governments provide essential services, including roads, drainage, sewerage and water supply (Pallot, 1997). These services have the potential to impact the environment. Hence, the present study concentrates on local governments. It is expected that Mayors of New Zealand local governments with higher “political competition” concentrate more on environmental reporting in the election year. The study contributes towards previous literature in the areas of “environmental reporting” by concentrating on New Zealand local governments. The only available study in a New Zealand context by Bellringer et al. (2011) reported the reasons behind sustainability reporting by local governments through interviewing five local governments. Their study did not investigate a comprehensive range of contextual factors. The contribution of the present study in the area of local government voluntary reporting specifically environmental reporting is the investigation of “political competition” in this context at a time when attaining fiscal targets is attached the utmost priority (Farneti and Guthrie, 2009; DeVilliers and Van Staden, 2012) and concentrating on their reporting in the election year. The theoretical contribution of this study is the adoption of “agency theory” in the context of public sector voluntary reporting and investigating the significance attached by agents to

environmental reporting at the time of election to minimise agency cost, whereas none of the existing studies concentrated on the election year. Focussing on the election year provides more insights into possible conflicting results reported in previous studies between “political competition” and “voluntary reporting”. The practical contribution of the study is in the area of the future development of reporting standards in regards to environmental reporting.

The paper is organised in the following manner. The next section reviews the literature on environmental reporting by local government sector and incentives for environmental reporting by non-profit and public sector entities respectively. This is followed by the outline of the structure of New Zealand local governments and their reporting requirements. The adoption of “agency theory” to the present study is discussed next followed by the development of a hypothesis. This is followed by the outline of the “research design” including the measurement of independent, dependent and control variables and statistical analysis. Results are discussed next followed by the “discussion and conclusion” in section. Finally the limitations of the study and directions for future research are delineated.

## **Literature review**

Following the aim of the present study, this section reviews the existing literature in the areas of “environmental reporting by local government sector” and “incentives for environmental reporting by non-profit and public sector entities” respectively.

### *Environmental reporting by local government sector*

Ball (2005) argues that local governments have a historical role as the steward of the environment. They play central roles in contributing towards the environment by engaging extensively in environmental planning, management and protection works. There are many studies investigating this stewardship role of local governments but their investigation is limited to the effect of policies and regulation on the disclosure of environmental information (see e.g. van Dijk et al., 2014; Beke-Trivunac and Jovanovic, 2014; Royo et al., 2013; Qian et al., 2011; Zakaria et al., 2010; Qian and Burritt, 2009; Pini, 2009; River, 2006; Strengers, 2004; Pickvance, 2002). Studies including comprehensive analysis of motivations behind local governments’ environmental reporting particularly the effect of specific events are sparse.

Garcia-Sanchez et al. (2013) investigated the extent and factors driving social reporting by Spanish local governments on their web sites. The authors reported similarities in the pattern of reporting by these local governments with social and environmental reporting being least reported compared to reporting of strategy, profile, relationship with stakeholders, and economic aspects. The authors found a positive relationship between the size of municipalities, left-wing ideology and sustainability reporting.

Joseph and Taplin (2012) investigated the role of mimetic isomorphism in sustainability reporting by Malaysian local authorities. Their study included interviews of 16 local councils. The authors found that each council imitated the web sites of their superior ones while reporting. While, city councils imitated international web sites, smaller district councils imitated web sites of local municipal or city councils. The reason behind such imitation was to enhance legitimacy by imitating organisations known for their sustainability development initiatives. Such imitation included sustainable development initiatives, including reporting on web sites.

Farneti and Guthrie (2009) interviewed the preparers of sustainability reports of seven Australian governmental organisations including one federal department, one state department, three local government authorities, and two state public organisations to investigate their reasons behind such reporting. The reason suggested by interviewees was the fulfilment of stakeholders' information needs, including the Minister, employees, and the public. The interviews delineated that the reporting of sustainability reporting was initiated in these organisations by specific individuals holding a higher-level management position, such as the Chief Executive or Managing Director. The principal reason behind such reporting was to inform stakeholders, specifically employees.

Marcuccio and Steccolini (2005) investigated the reasons behind reporting social and environmental information by the Italian local authorities (LAs). The authors conducted interviews and analysed official organisational documents for the purpose of their study. Most respondents stated the principal reason behind reporting social and environmental information was to signal innovativeness and establish supremacy compared to other departments, LAs and constituents. Following this finding, the authors concluded the reporting of social and environmental information by Italian LAs was driven by their effort to signal efficiency and high performance rather than ethical values. Marcuccio and Steccolini (2009) investigated the patterns of voluntary extended performance reporting by Italian local government authorities and observed that Italian LAs were still experimenting with voluntary extended performance reporting and that there are differences in disclosure practices in this regard among the Italian LAs. In a later study by Mussari and Monfardini (2010), the authors suggested that the principal reason behind social and environmental reporting by the Italian public sector and non-profit organisations was coercive pressure resulting from non-binding regulations indicating the societal expectations of such reporting. The regulation did not mandate the reporting of social and environmental information but required following specific guidelines if a public sector organisation including local governments, elected to report such information. The authors reported that although this regulation was not mandatory, the societal expectation of such reporting led to social and environmental reporting by the Italian public sector and non-profit organisations.

Smith and Schiffel (2009) investigated the status of non-financial including environmental performance reporting by local governments in the USA and observed that although the idea that every local government would publish a report about its nonfinancial performance is more than 100 years old, only few cities provided high quality non-financial performance reporting.

Frost and Seamer (2002) investigated the relationship between internal environmental management practices (EMS), political visibility, and environmental reporting. The authors analysed 1996 annual reports of a sample of New South Wales, Australia public sector entities for the purpose of their study. The authors reported that entities with higher political visibility had more developed EMS and disclosure. Following this finding, the authors concluded that external pressure not only lead entities to report more environmental information but also resulted in their development of EMS.

In the New Zealand local government sector context, Bellringer et al. (2011) interviewed five local governments to identify reasons behind their sustainability reporting. The authors reported that sustainability reporting by these local governments was driven by maintenance of legitimacy, accountability to the public, attaining beneficial financial

outcomes, and maintaining an optimum relation with employees and ratepayers, rather than the desire to promote a sustainable world.

As outlined above, Marcuccio and Steccolini (2009) and Smith and Schiffel (2009) commented on the status of reporting by Italian and US local governments, respectively. Mussari and Monfardini (2010) and Farneti and Guthrie (2009) delineated the reason behind social and environmental reporting as information requirements of stakeholders. Joseph and Taplin (2012) attributed the reason behind sustainability reporting to maintaining and gaining legitimacy. Marcuccio and Steccolini (2005) attributed the reason behind social and environmental reporting to signalling supremacy and innovativeness. These studies did not include investigation of intrinsic motivation behind environmental reporting. The study of Garcia-Sanchez et al. (2013) did not include the election year. The study of Frost and Seamer (2002) was limited to the investigation of relationship between internal EMS and the level of environmental reporting. The only study in the New Zealand context by Bellringer et al. (2011) was limited to the interview of five local governments. Williams et al. (2011) claim that a review of prior literature suggests that sustainability reporting within local government sector is in its initial stages of development. Therefore, the present study fulfils the gaps in environmental reporting literature in local government sector by investigating the factors that determine environmental reporting by local governments specifically concentrating on the event of election.

#### *Incentives for environmental reporting by non-profit and public sector entities*

Van Dijk et al. (2014) argue that there is a strong demand for environmental information to help guide and improve decisions that have environmental outcomes or impacts, promote sustainability, provide a basis for policy development, help identify and manage risks and improve expert public understanding of environmental functions. For example, Huguen et al. (2014) pointed out that KPMG's International Corporate Responsibility Reporting Survey of 2011 found that 95 per cent of the 250 largest companies in the world currently engage in social including environmental reporting, and nearly half of these companies reported gaining financial value from such initiatives. Earlier Ackers (2009) argued that despite an increased demand for corporate accountability for the impact of their actions, or inaction, on society and the environment, the emerging dominant global practice is meeting such demand through voluntary disclosure. Similarly, Romero et al. (2014) state that the disclosures of sustainability initiatives have increased during the last three decades. There is a large stream of research examining the incentives for voluntary environmental reporting in private and for – profit sector (Schaltegger et al. 2013; Soyka, 2012; Margolis and Walsh, 2001, 2003). Of these studies, a significant body of work has evolved drawing on alternative theoretical perspectives of which the agency theory perspective is dominant (see e.g. De Klerk and de Villiers, 2011). As the main objective of a typical profit-seeking firm is to maximise shareholder wealth, these literature mainly explored the economic and agency contractual incentives of voluntary environmental reporting by for-profit firms. The objective of non-profit and public sector management is not the maximisation of shareholder wealth and they serve different set of stakeholders (Zainon et al., 2014). Nevertheless, similar to for-profit firms, non-profit organisations have both motives and incentives to manage their disclosure in line with management's self-interest (Hofmann and McSwain, 2013). Williams et al. (2011) argue that sustainability reporting research has historically focussed on the corporate sector and public sector research in this regard is still

in its infancy. Earlier Ball (2005) called for expanding the main focus of social and environmental accounting research from the corporate sector to local government sector. Although not extensive, some literature attempted to explain such self-interested managerial behaviour of non-profit sector using the principal-agent framework (see e.g. Laswad et al., 2005; Baber and Sen, 1984; Evans and Patton, 1987). In local government context, it is argued that an agency relationship exists between elected and appointed officials with voters (Laswad et al., 2005). The voters are the principals. Actions of agents, including elected and appointed officials, affect voters, as their actions impact the determination of taxes. Hence, voters have the incentive to monitor these officials. Other individuals, such as political candidates, creditors, and the press, also monitor elected and appointed officials (Zimmerman, 1977). Baber and Sen (1984) applied agency theory to explain the disclosure of voluntary information by US states based on Governmental Accounting, Auditing and Financial Reporting (GAAFR). These authors suggested that governmental entities report voluntary information to reduce agency costs and facilitate ex-post -election monitoring by their constituents. Some of the factors identified by Baber and Sen (1984) that influence governmental entities to report voluntary information were political competition, level of debt and legislator turnover. Similarly, Baber (1983) suggested that an agency relationship exists between politicians (agents) and interest groups (principals). The author suggested that the incentives of politicians to report information to interest groups increases as political competition increases.

Some of the factors identified by Ingram (1984) that affect the disclosure of voluntary information by governmental entities are: political competition, urbanisation, per capita income, newspaper circulation, and own revenue per capita of state governments. Out of these five attributes, the authors observed that “newspaper circulation” was negatively related to disclosure while the other four attributes were positively related. Ingram (1984) attributed this negative relationship to the fact that news items reported in newspapers act as alternative to accounting reports resulting in non-reporting of such information in later reports. Following these findings, the author concluded that these were in line with the expectation that constituents’ demand for information affects the reporting of information by governmental entities.

Evans and Patton (1987) applied agency theory to investigate factors determining voluntary compliance with Generally Accounting Principles (GAAP) by US municipalities. The authors studied municipal financial reports between 1976-1980 and 1981-1984. Their study reported a positive relationship between larger population, city form of government, higher debt, and higher management salary with the use of GAAP, whereas political competition was negatively related to the use of GAAP. The authors measured “political competition” by the closeness of the previous election.

Christiaens (1999) found a positive relationship between municipal size and the level of disclosure in annual reports of Belgian municipalities. The author measured “municipal size” by “population” in constituents. On the contrary, the author reported no relationship between the reliance on debt, municipal wealth and disclosure. The author measured the reliance on debt by “long-term debt per capita”, and “municipal wealth” by “own revenue per capita”.

Marcuccio and Steccolini (2009) reported a negative relationship between the size of local governments and the reporting of voluntary information by Italian LAs. Larger local governments reported less voluntary information compared to smaller ones. The authors

reported no relationship between financial performance, visibility, competencies of preparers, and the political attitudes of LAs and their voluntary disclosure.

Laswad et al. (2005) investigated the determinants of voluntary reporting by local governments in New Zealand using the agency theory framework. Their study reported that local governments with higher leverage, municipal wealth, and press visibility disseminated more financial information on the internet voluntarily compared to others. Similar to Laswad et al. (2005), Garcia and Garcia-Garcia (2010) applied the agency theory framework in Spanish local government context to investigate the determinants of their voluntary reporting on the internet. They observed that size, capital investment and political competition were positively associated with the degree of voluntary online reporting and found a negative relationship between press visibility and reporting.

The discussion of existing limited number of literature above suggest that there is a paucity of research investigating the dynamics of incentive behind voluntary information reporting by local governments. Various theoretical constructs such as legitimacy theory and stakeholder theory has been well developed to understand the dynamics voluntary disclosure of information by organisations including public sector organisations (Marx and van Dyk, 2011; Watson, 2011; Qian and Burritt, 2009) but the adoption of agency framework, although dominant in private sector context, to understand such dynamics in public sector context is still under development (Laswad et al., 2005). The small numbers of studies that investigated the determinants of voluntary reporting by local governments' management reported contrasting results with regard to the relationship between "political competition" and "voluntary reporting". While there is awareness that local governments are going above and beyond their traditional roles to include a growing focus on environmental reporting, there is less agreement about the reason behind this initiative. For example, while Baber and Sen (1984) and Ingram (1984) reported a positive relationship, Evans and Patton (1987) reported a negative relationship between these variables. These studies are now dated. None of the existing studies focussed on events such as election year, which can provide further insight into such contrasting findings in previous studies. Following these contrasting findings, the lack of studies in recent years, the lack of studies investigating the effect of specific event such as election year on public sector reporting, public sector reform in New Zealand, the dearth in studies in the area of public sector voluntary reporting in the New Zealand context and the significance of environmental reporting, the present study investigates the relationship between "political competition" and "environmental reporting" by New Zealand local governments at the time of an election. The study contributes towards the voluntary reporting literature by concentrating on the local government sector, focussing on a country that experienced significant public sector reform, investigating the effect of an event that is election on reporting and concentrating on environmental reporting.

### **Structure of New Zealand local governments and their reporting requirements**

New Zealand local governments included 12 regional councils and 74 territorial authorities. Management of natural resources, environmental planning, and all regulations applicable at regional level are functions of regional councils. Territorial authorities provide local services, such as rubbish collection and disposal, water, sewage treatment, street lighting, libraries, roads, parks, and reserves. The 74 territorial authorities included 16 city councils and 58 district councils (Local Government Councils, 2008). On 6 March 2008, Banks Peninsula city council merged with the Christchurch city council, reducing the number of city councils to



15. Hence, New Zealand local governments comprised 12 regional councils and 73 territorial authorities including 15 city councils and 58 district councils. There was a major restructuring of New Zealand local governments in 2010, resulting in 11 regional councils and 72 territorial authorities. These 72 territorial authorities include 12 city councils, 54 district councils and six unitary councils (Local Government in New Zealand, 2013). The Local Government Act 2002 requires New Zealand local governments to prepare financial statements in accordance with the New Zealand GAAP (New Zealand Institute of Chartered Accountants, 2007). The Local Government Act also requires the reporting of performance compared to plans (Local Government Act 2002). There is no requirement to report environmental information in NZGAAP or the Local Government Act.

### **Theory and hypothesis development**

The present study adopts “agency theory” as the theoretical basis. The principal-agent theory commonly known as “agency theory” provides insights into the accountability relation from an economic point of view as well as insights into the reasons behind the voluntary reporting of financial and non-financial information by local governments. In the principal-agent model, the principal is the owner of capital assets over which the agent has day-to-day control and manages on behalf of the principal (Jensen and Meckling, 1976). Jensen and Meckling (1976) argued that the agent typically has different interests to the principal and expects to maximise his (or her) interest rather than maximising the welfare of the principal. Therefore, in order to control the agent, it is in the interest of the principal to incur monitoring costs to monitor the performance of the agent and the extent of the agent’s conformity with the principal’s own objectives. On the contrary, it may be in the interest of the agent to incur bonding costs to convince the principal that the agent is worthy of hire. These costs of monitoring and bonding are regarded as agency costs. The principal-agent theory posits that information asymmetries between the principal and agent give rise to agency costs. Jensen and Meckling (1976) further argued that disclosure, including voluntary disclosure is an effective way to reduce the information asymmetry between principals and agents.

Mayston (1993) argued that while the principal-agent model provides a framework for analysing the stewardship of assets by the agent of the private sector management on behalf of the shareholders – the principals, such a model can also be applied to the public sector if measures of the financial return on the assets are supplemented by non-profit performance indicators or other measures of benefit to the users of service. Baber (1983) argued that in political markets, contracting between political entrepreneurs and interest groups conform to the general agency framework. The author further argued that as voters can influence the outcomes of elections, interest groups have incentives to seek information about the actions of political agents. If political entrepreneurs wish to be elected, they cannot ignore these interest groups. Some may argue that once elected, political agents can ignore pre-election agreements without fear of immediate dismissal. However, political competition increases long-run costs to political agents who engage in such acts as dismissing pre-election promises. Baber (1983) also argued that elected officials supply monitoring information to demonstrate their execution of pre-election promises, and their incentive to do so increases as political competition increases. In the context of a municipal setting, Banker and Patton (1987) pointed out that the elections of municipality mayors are similar to the hiring mechanisms to find someone to carry out the principal’s preferred policies and that there are possible penalties for certain types of behaviours, for example,

the mayor can be impeached, recalled, or not re-elected in the next race. These authors further argued that a basic agency model which was developed in a private enterprise setting could be translated to the local government context. Therefore, similar to the private sector the public sector agents have incentives to reduce the information asymmetry through voluntary disclosure of financial and non-financial information. Although the use of the principal-agent model to theorise the agency costs related behaviour in the public sector is at a comparatively earlier stage than its use in the private sector, interest in agency theory's use in a public sector context is growing among academic researchers (Laswad et al., 2005)

Considering the rationale behind voluntary reporting suggested in "agency theory", the endorsement and use of this theory in the public sector context in the previous literature (see, Zimmerman, 1977; Baber and Sen, 1984; Baber, 1983; Evans and Patton, 1987) and the dearth in examining this theory in the public sector environmental reporting context, the present study adopts this theory to investigate the relationship between "political competition" and "environmental reporting" by New Zealand local governments.

Consistent with the "agency theory" "political candidates" have incentives to monitor officials (Zimmerman, 1977). Baber (1983) suggested that due to the agency relationship between politicians (agents) and interest groups (principals), the incentives of politicians to report information to interest groups rises as their political competition rises. Baber and Sen (1984) and Ingram (1984) reported a positive relationship between the increase in political competition and the increase in voluntary reporting. On the contrary, Evans and Patton (1987) reported a negative relationship. Laswad et al. (2005) reported no relationship between political competition and IFR of New Zealand local governments. However, following "agency theory" it is expected that an increase in "political competition" will lead to more "environmental reporting". As outlined above, Baber (1983) suggested that once re-elected politicians such as Mayors of Local Governments may not concentrate on pre-election promises as doing so does not lead to their immediate dismissal. However, at the time of election, politicians are expected to provide more information to voters as voters determine their re-election. This is particularly significant in the context of New Zealand local governments' environmental reporting as the Audit report of the Auditor-General expressed concern over the past four years about the lack of reporting social, economic, environmental and cultural contribution of local governments, including some local governments not reporting relevant disclosures (Controller and Auditor General New Zealand, 2007). The significance attached to environment by New Zealanders and businesses in New Zealand is also evidenced in the report of New Zealand Chamber of Commerce (2008). The local government election year 2007 was also monumental in regard to environmental sustainability in the national arena. The Labour Government issued carbon emission trading scheme as its climate change policy, which received multi party support from the National and Green parties (Edwards, 2008). This suggests the significance attached to environment by New Zealanders. Hence, the following hypothesis is proposed and tested:

There is a positive relationship between "political competition" and "environmental reporting" by New Zealand local governments at the time of an election but not in other times.

## **Research design**

### *Sample*

The sample included all local governments in 2008, which are 12 regional councils and 73 territorial authorities. These territorial authorities included 15 city councils and 58 district councils. Annual reports of New Zealand local governments for the financial years 2005-2006 to 2009-2010 were analysed to investigate the extent and nature of their environmental reporting. The reason behind selecting this time period is to investigate the longitudinal trend around the election in 2007 and prior to the restructuring of New Zealand local governments in 2010. Investigation of reporting trend before and after the election outlines the effect of election on reporting. Scores obtained by each local government were categorised into “monetary” And “non-monetary” environmental disclosures.

### *Independent variables*

The independent variable “political competition” was measured by “the number of candidates divided by the number of available positions at the previous election”. Elections were held in 2004 and 2007.

Laswad et al. (2005) used “candidates per position” as the proxy for “political competition”. The reason behind such a proxy measure is, as the number of candidates to available position increases, competition increases. Data in regard to “candidates per position” were obtained from the Local Governments Elections Statistics 2007 on the Department of Internal Affairs’ web site.

### *Dependent variable*

The research method to score the dependent variable that is, environmental reporting included “content analysis” based on the “number of sentences” as the recording unit except for two sub-categories of “monetary environmental information” that are “historical” and “fully integrated environmental financial statements”. These two sub-categories were scored as “1” or “0” with “1” if the information was reported or “0” otherwise. The reason behind following a different scoring system for these two sub-categories was that they were disclosed in the financial statements of the local governments. Hence “content analysis” was not appropriate in scoring these two items. Scores obtained by each local government was categorised into “monetary” and “non-monetary” environmental disclosures.

The “content analysis” has been widely used to measure the extent of disclosure in annual reports (Frost and Seamer, 2002; Chatterjee and Mir, 2008; Beck et al., 2010; Watson, 2011; Samkin, 2012). The present study includes the investigation of the nature and extent of environmental information reporting in New Zealand local governments’ annual reports, and hence “content analysis” is suitable for the purpose. Content analysis requires the selection of a “recording unit” (General Accounting Office, 1982). The present study use “number of sentences” as the recording unit. This is because a page in an annual report can include other information together with environmental information. Similarly, a “paragraph” is not the right method as it may contain other information with environmental ones. On the other hand, Milne and Adler (1999) suggested, “words” are unable to convey meanings without sentences. Pictures, captions to pictures and graphs in regard to environment were excluded from analysis, as their inclusion involves a high level of subjectivity (Ahmed and Sulaiman, 2004).

“Environmental disclosure” was defined by Wilmhurst and Frost (2000) as “those disclosures that relate to the impact company activities have on the physical or natural environment in which they operate” (p. 16). Fortes (2002) suggested that environmental reporting includes those information items that aid in the assessment of the responsible use of natural resources. Frost and Seamer (2002) defined “environment” as “a relationship between the entity and the physical environment, including energy usage, waste, and actual physical impact” (p. 112). The present study adopts these definitions to identify environmental information in annual reports.

In order to analyse the type of environmental information reported by local governments, categories were developed to group recording units following the previous environmental reporting literature (General Accounting Office, 1982; Ahmed and Sulaiman, 2004; Thompson and Cowton, 2004), such as:

- Evidence (monetary and non-monetary).
- Monetary (provision for clean-up costs, contingent liability data, forecast of the impact of environmental expenditure on future results, prospective environmental expenditure, historical environmental expenditure, fully intrated environmental financial statements, statement of progress on environmental performance against targets, others).
- Non-monetary (statement of assurance from management of compliance with external standards, summary of results of environmental audits, local Government environmental policy statement, external verifier’s report on the environmental audit, environmental impact assessments and site level reports, statement of intent with regards to environmental audits, specific accounting policies for environmental issues, narrative environmental disclosures, management’s responsibilities for monitoring environmental performance).
- News type (good news; bad news).
- Location (management’s report; other section(s) of annual report only; both in management’s report and other section(s)).

An ordinal scale was used to count the environmental disclosure scores under the above mentioned categories for each local government for each year in order to establish the increasing or decreasing trends of their environmental reporting. One point was assigned to the disclosure of each sentence relating to environmental information, except for two sub-categories of “monetary environmental information” that are “historical” and “fully integrated environmental financial statements”. These two sub-categories were scored as “1” or “0” with “1” if the information was reported, or “0” otherwise.

#### *Control variables*

The study includes several control variables that are “level of debt of local governments”, “urbanisation”, “per capita income of residents”, “press visibility” and “political visibility”. “Level of debt of local governments” is included as a control variable because previous studies found that government entities with higher debts reported more voluntary information compared to those with lower debts (Baber and Sen, 1984; Evans and Patton, 1987). Laswad et al. (2005) also reported a positive relationship between higher leverage and IFR of New Zealand local governments. The authors found that New Zealand local governments with higher leverage engaged more in IFR compared to those with the ones

with lower leverage. This is because creditors have the incentive to monitor elected and appointed officials (Zimmerman, 1977). “Logarithm of the ratio of total debt to total assets” was used as the proxy for the level of debt of local governments’ (Table I). “Urbanisation” is included as a control variable because previous studies found that government entities in urban areas reported more voluntary information compared to rural areas (Ingram, 1984; Evans and Patton, 1987). Laswad et al. (2005) reported that district councils in New Zealand engaged in less IFR compared to city and regional councils. The reason behind such a finding is attributed to the fact that properties in urban areas pay more tax than those in rural areas. Hence taxpayers in urban areas are more interested in monitoring government entities (Ingram, 1984).

“Urbanisation” is measured with two dummy variables, “regional” and “city”, taking values of 1 if the council is a regional or city council, respectively, and 0 otherwise (Table I). “Per capita income of residents” is included as a control variable because Ingram (1984) found that government entities with higher “per capita income of residents” reported more information compared to government entities with lower “per capita income of residents”. Following Dye (1969), cited in Ingram (1984) outlined the reason behind such a positive relationship as higher personal income leads to higher taxes. Hence individuals with higher income monitor government entities to either avoid taxes or obtain service benefits. In the present study, “Median per capita income” was used as the proxy to “per capita income of residents’ of each local government”. This information was obtained from 2006 Census data on the Statistics New Zealand web site (Table I).

**Table I. Identification of variables**

Variable	Measure	Identifier
Environmental reporting	Content analysis	ENR
Political competition	Number of candidates divided by the number of available positions at the previous election	POL
Level of debt of local governments	Logarithm of the ratio of total debt to total assets	DEBT
Urbanisation	Regional: equals 1 for a Regional council and 0 otherwise. City: equals 1 for a City council and 0 otherwise.	Urbanisation City = URC Urbanisation Regional = URR PCINR
Per capita income of residents	Median per capita income (2006 census)	
Press visibility	Number of news items on the Index New Zealand website including online articles, journals and newspapers (mean over the past five years from reporting periods)	PRV
Political visibility	Logarithm of total assets	POLV

“Press visibility” is included as a control variable because Laswad et al. (2005) reported a positive relationship between “press visibility” and New Zealand Las engaging in Internet Financial Reporting (IFR). The mean “Number of news items” on the Index New Zealand web site, including online article, journal and newspaper over past five years from the reporting periods was used as the proxy for “press visibility” (Table I).

“Political visibility” is included as a control variable because Frost and Seamer (2002) reported that public sector entities with higher “political visibility” reported more

environmental information compared to public sector entities with lower “political visibility”. “Total assets” was used as the proxy for “political visibility” (Table I).

### *Statistical analysis*

Tabulations of disclosure score by year for each category of information were performed. Mean total reporting was analysed with two-way ANOVA to test whether mean disclosure differs by year. Year and council are the two factors in this ANOVA, as these factors account for the tendency of some councils to engage in relatively high disclosure in each year. Furthermore, the total disclosure of each council (ENR) was regressed against six independent variables outlined in Table I. Regressions were performed separately for each year rather than a pooled analysis using all years for several reasons. First, including the same councils over several years will violate the regression assumption of independence. Second, it is not assumed that the relationship between independent and dependent variables is the same for all years. Instead the present study ascertains how relationships vary by year. The regression equations take the following form:

$$ENR = \beta_0 + \beta_1 POL + \beta_2 URR + \beta_3 URC + \beta_4 PINCR + \beta_5 POLV + \beta_6 DEBT + \beta_7 PRV + \varepsilon.$$

Where all variables are defined in Table I. Two-sided p-values are reported throughout.

## **Results**

### *Descriptive statistics*

Extent of environmental information reported by local governments across five financial years from 2005-2006 to 2009-2010 are provided in Table II. Two-way ANOVA revealed a highly significant difference in mean disclosure by year ( $p < 0.001$ ).

Table II reports that the extent of environmental reporting by local governments was highest in 2007-2008 with a mean of 40.1. Table II reports an increasing trend in environmental reporting from 2005-2006 to 2007-2008 with a significant increase between 2005-2006 and 2006-2007 attaining the highest disclosure in 2007-2008. However, disclosure significantly declined in 2008-2009 compared to the previous three years with disclosure in this year similar to 2005-2006. There was a minor increase in disclosure in 2009-2010 compared to 2008-2009. In 2005-2006, 31 local governments did not report any environmental information. The number of non-reporting local governments declined marginally in 2006-2007, reducing to 25. In 2007-2008 the number of non-reporting local governments was the lowest. The number of non-reporting local governments increased in 2008-2009, compared to 2007-2008, but reduced marginally in 2009-2010.

**Table II. Extent of environmental information reporting.**

Disclosure score	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
0	31	25	15	25	20
1-20	28	22	34	41	32
21-40	18	19	19	12	25
41-60	5	13	12	5	8
61-80	1	4	3	1	0
1-100	1	2	2	1	0
> 100	1	0	0	0	0
Mean	29.5	38.0	40.1	30.3	33.4

**Notes:** Numbers in italics refer to the number of local governments. Means that differ by 5.3 or more are statistically significant at the 5 per cent level.

**Table III. Extent of monetary environmental information reporting**

Categories	2005- 2006	2006- 2007	2007- 2008	2008- 2009	2009- 2010
Provision for clean up costs	31	99	112	0	0
Contingent liability data	9	27	39	0	0
Forecast of the impact of environmental expenditure on future results	4	4	8	0	0
Prospective environmental expenditure	5	7	11	4	1
Historical environmental expenditure	8	9	5	38	41
Fully integrated environmental financial statements	3	8	1	61	62
Statement of progress on environmental performance against quantified targets	0	3	2	76	90
Others	0	15	0	25	0
Total	60	172	178	204	194

Table III reports the extent of “monetary environmental information” reported by local governments in each category across five financial years from 2005-2006 to 2009-2010. Table III reports that the highest extent of “monetary” environmental information was reported in 2008-2009 with the highest increase compared to previous years in 2006-2007. There was a change in the pattern of reporting in 2008-2009 and 2009-2010 compared to 2005-2006 to 2007-2008. While the highest number of “monetary” environmental reporting in 2005-2006 to 2007-2008 was in the area of “provision for clean-up costs” this information was not reported by any local government in 2008-2009 and 2009-2010. Instead, disclosure score in the area of “statement of progress on environmental performance against quantified targets” increased significantly in 2008-2009 and 2009-2010, compared to previous three years.

**Table IV. Extent of non-monetary environmental information reporting**

Categories	2005- 2006	2006- 2007	2007- 2008	2008- 2009	2009- 2010
Statement of assurance from management of compliance with external standards	23	89	69	3	4
Summary of results of environmental audits	0	0	2	6	0
Local Government environmental policy statement	7	26	33	19	27
External verifier's report on the environmental audit	0	22	3	1	0
Environmental impact assessments and site level reports	4	18	17	37	26
Statement of intent of environmental audits	0	2	3	1	0
Specific accounting policies for environmental issues	369	227	284	5	13
Narrative environmental disclosures	1,798	2,380	2,462	1,353	1,361
Management's responsibilities for monitoring environmental performance	250	292	353	948	1,211
Total	2,451	3,056	3,226	2,373	2,642

Table IV reports the extent of “non-monetary information” reported by local governments across five financial years from 2005-2006 to 2009-2010.

Table IV reports that the highest extent of “non-monetary” environmental information was reported in 2007-2008, resulting in the highest total reporting in this year. The reporting of “non-monetary” environmental information increased from 2005-2006 to 2007-2008.

However, such reporting reduced significantly in 2008-2009 resulting in the lowest

disclosure score in this financial year. Reporting increased marginally in 2009-2010, compared to 2008-2009. The highest extent of reporting was “narrative” in nature, followed by “management responsibilities for monitoring environmental performance”. While reporting in the area of “management responsibilities for monitoring environmental performance” increased over time, reporting regarding the “Statement of assurance from management of compliance with external standards” declined from 2007-2008 to 2009-2010, with a significant decrease in 2008-2009 and 2009-2010, as compared to the previous three years.

The nature of environmental information reported by local governments across five financial years from 2005-2006 to 2009-2010 is outlined in Table V.

**Table V. Nature of environmental information reporting**

Categories	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Good news	101	95	134	24	12
Bad news	2	4	0	10	10
Neutral news	2,408	3,129	3,270	2,543	2,814
Total	2,511	3,228	3,404	2,577	2,836

Table V reports that most of the environmental information reported by local governments was neutral in nature. Reporting of “good news” was the highest in 2007-2008 while reporting of “bad news” was sparse across all years.

The locations of environmental information reported by local governments across five financial years from 2005-2006 to 2009-2010 are provided in Table VI.

**Table VI. Location of environmental information reporting**

Location	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Mayor's Report/CEO and/or management discussion and analysis	101	101	116	114	114
Other sections of annual report	2,410	3,127	3,288	2,463	2,722
Total	2,511	3,228	3,404	2,577	2,836

Table VI reports that most of the environmental information was reported in “other sections of annual reports”. Reporting of environmental information in “Mayor/CEO/Management discussion & analysis” was sparse. Reporting in “Mayor/CEO/Management discussion & analysis” was the highest in 2007-2008.

### *Inferential statistics*

Table VII provides the correlations and variance inflation factors (VIF) for 2007-2008 data. Note that the correlation between environmental disclosures (ENV) and political competition (POL) is moderately high ( $r=0.37$ ) and although political competition is positively associated with city urbanisation (URC), political visibility (POLV), level of debt (DEBT) and press visibility (PRV), all variance inflation factors are lower than 5, suggesting multi collinearity is not a major concern. Correlations and VIF values for other years (not reported) are generally similar, although correlations between environmental reporting and



political competition are considerably lower, with the year 2006-2007 exhibiting the next highest correlation of only 0.18.

**Table VII. Pearson correlations and VIF's (2008)**

	ENR	POL	URG	URC	PINCR	POLV	DEBT	PRV
ENR	1	0.37	0.27	0.13	-0.02	0.06	0.31	0.04
POL	0.37	1	0.08	0.46	-0.02	0.56	0.50	0.42
URR	0.27	0.08	1	-0.20	-0.04	-0.31	0.06	0.05
URC	0.13	0.46	-0.20	1	0.27	0.57	0.26	0.40
PINCR	-0.02	-0.02	-0.04	0.27	1	0.06	0.12	-0.01
POLV	0.06	0.56	-0.31	0.57	0.06	1	0.24	0.51
DEBT	0.31	0.50	0.06	0.26	0.12	0.24	1	0.13
PRV	0.04	0.42	0.05	0.40	-0.01	0.51	0.13	1
VIF		2.17	1.33	1.77	1.14	2.36	1.39	1.53

**Note:** See Table I for definitions of variables. VIF is the variance inflation factors

Regression results (coefficients and p-values) predicting the dependent variable of total disclosures for each year are shown in Table VIII. The relationship between “political competition” (POL) and disclosures is statistically significant ( $p=0.028$ ) and positive in the election year of 2007-2008, signifying a local government with higher candidates per position reported more environmental information compared to those with a lower number of candidates per position. Relationships in other years are not statistically significant. Regarding control variables, significant relationships exist between “urbanisation” and “extent of reporting” in all years. Regional councils (URR) reported more environmental information compared to city’ (URC) and “district” councils. Relationships between other control variables and “environmental reporting” was not significantly related in any year. However, “political visibility” (POLV) and “level of debts” (DEBT) were positively related to “environmental reporting” in all years except in 2007-2008 and 2008-2009, respectively. On the contrary, “per capital income of residents” (PINCR) and “press visibility” (PRV) were negatively related to “environmental reporting” in all years though not significant (Table VIII).

### Discussion and conclusion

The study finds a significant positive relationship between “political competition” and “environmental reporting” in 2007-2008, supporting the hypothesis. The number of local governments reporting voluntary environmental information increased in 2006-2007 and 2007-2008, compared to 2005-2006, followed by a reduction in such disclosure following the 2007-2008 financial year. This trend in disclosure can be attributed to the local government election in October 2007. This finding is consistent with the expectation of “agency theory” and the findings of Baber and Sen (1984) and Ingram (1984) that voluntary reporting increases with the increase of political competition. However, this finding is contrary to the findings by Laswad et al. (2005) as they reported no relationship between “political competition” and “IFR”. Such contrary findings to Laswad et al. (2005) can be attributed to the concentration of the present study on the election year. The study by Laswad et al. (2005) did not include the election year. Hence, as Baber (1983) suggested, once the election is over politicians may not concentrate on pre-election promises to the same extent as the election year, as after the election there is very minimal threat to their

immediate dismissal. Overall, following the findings in the present study, it can be stated that the positive relationship between “political competition” and “environmental reporting” is associated with the timing of the election.

**Table VIII. Regression coefficients and p-values predicting total disclosures**

	2005-2006		2006-2007		2007-2008		2008-2009		2009-2010	
	Coef	p	Coef	p	Coef	p	Coef	p	Coef	p
Intercept	-28.988	0.489	-12.205	0.796	52.073	0.237	10.478	0.656	3.176	0.920
POL	-4.902	0.328	-1.534	0.776	<b>10.511</b>	<b>0.028</b>	4.875	0.214	-6.239	0.125
URG	<b>29.896</b>	<b>0.000</b>	<b>32.268</b>	<b>0.001</b>	<b>15.652</b>	<b>0.042</b>	<b>22.329</b>	<b>0.002</b>	<b>17.476</b>	<b>0.007</b>
URC	1.561	0.864	9.107	0.337	5.452	0.486	9.266	0.176	-0.185	0.979
PINCR	-0.159	0.216	-0.161	0.232	-0.046	0.682	-0.037	0.718	-0.050	0.608
POLV	6.732	0.054	5.146	0.162	-1.626	0.625	0.105	0.951	3.348	0.171
DEBT	<i>14.034</i>	<i>0.075</i>	11.249	0.219	10.559	0.213	-4.334	0.482	1.528	0.805
PRV	-0.077	0.892	-0.561	0.352	-0.412	0.306	-0.466	0.074	-0.038	0.896

**Notes:** Bold values are statistically significant ( $p < 0.05$ ) and italics are marginally significant ( $p < 0.1$ ). All  $p$ -values are two-tailed. See Table I for definitions of variables. A positive relationship is hypothesised for POL in the election year 2007-2008 but no relationship in other years. Control variables are hypothesised to potentially have positive relationships

The study reports that although not mandatory, most local governments reported some environmental information. Most of the environmental information reported by New Zealand local governments was “non-monetary” and “narrative” in nature. This indicates the possibility of local governments’ attempts to appear to be fulfilling the expectations of principals through such disclosure. However, the lack of “monetary” information raises concern about local governments’ investment in the environment. The potential of such lack of voluntary investment in the environment is further enhanced as a result of most “monetary” information being in the sub-category of “provision for clean-up costs “. Most of the environmental information reported by local governments was “neutral” in nature followed by “good” news. “Bad news” was sparingly reported. The high extent of environmental reporting in the financial year leading up to election and in the election year, the lack of reporting “monetary” environmental information, and the lack of reporting “bad” news suggest that environmental reporting was potentially used as a public relation exercise to attract support of voters and respond to the attention of political candidates at times leading up to an election.

The study contributes towards theoretical development by testing “agency theory” in the context of public sector voluntary reporting and by investigating the significance attached by agents to environmental reporting to minimise agency costs. The study finds following the environmental reporting pattern of local governments that such agency cost increases significantly at the time of election and reporting of environmental information is perceived to be a tool to minimise such agency costs in the public sector.

The study contributes towards the future development of public sector reporting standards in the area of environmental reporting by outlining the dearth in such reporting. The findings that voluntary environmental reporting increases just at the time of an election and declines thereafter and that most of information reported are “non-monetary” and “narrative” suggests selective reporting. Hence, that there is need for reporting requirements in this regard. The development of such reporting requirements will need to emphasise the reporting of environmental information in each year’s annual reports on a comparative basis and reporting of quantitative data. This will facilitate comparison of local governments’ environmental performance across years and between entities. The findings that most of the environmental information reported by local governments is “good” and “neutral” news and that there is a lack of “bad” or negative news suggest that such development of future reporting requirements will need to emphasise the reporting of such news. The lack of prospective monetary environmental information and the lack of reports on external audits regarding environmental data have implications for the future development of reporting and auditing requirements in this regard.

### **Limitations and directions for future research**

The present study is limited to the investigation of the extent of environmental reporting in annual reports of New Zealand local governments. In such an investigation, the study did not include reporting of environmental information in the form of pictures, captions to pictures and graphs. The study is also limited to the investigation of annual reports for the five financial years before the restructuring of New Zealand local governments.

Future research is suggested to investigate environmental reporting by New Zealand local governments in other media such as web sites and include reporting in forms such as pictures, captions to pictures and graphs in annual reports. Future research is also

suggested to investigate the effect of restructuring of New Zealand local governments on their environmental reporting.

#### **Note**

1. Also see Margolis and Walsh (2003) and Soyka (2012), who have provided comprehensive environmental performance related literature analyses comprising environmental reporting and performance of private sector organisations.

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